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A critical evaluation of the impact coaching and mentoring has on the walking spinal community's behavioural change and motivations to being physically active.

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"A critical evaluation of the impact coaching and mentoring has on the walking spinal community's behavioural change and motivations to being physically active."

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Gillian Fowler

Doctor of Philosophy

"A critical evaluation of the impact coaching and mentoring has on the walking spinal community's behavioural change and motivations to being physically active."

Abstract

This study explores the impact coaching and mentoring have on the Walking Spinal Community's (WSC) behavioural change and motivations to being physically active. A sub-set of the spinal community, this specific population is partly overlooked due to the less likelihood of visible disability, yet sustaining such an injury can be debilitating and even life-changing, with numbers expected to increase. Existing literature within the realms of spinal community are extensive, with focus given to spinal cord injury (SCI) where paralysis has occurred, and interest shown in rehabilitation, pain, and wellbeing. However, there is limited literature in relation to the WSC in general, or otherwise referred to as SCI individuals who ambulate. This research, therefore, examines the WSC and their support needs and underlying barriers, motivators, and influencers to activity, and what can potentially aid recovery and better manage their condition. To help achieve this, the study gives a voice to this community, and explores relevant lived experiences.

This study applies an interpretative, qualitative approach, using semi-structured interviews over two phases, to which Mentees, Coachees, and Neutral groupings were created to give greater depth of data, depending on talking support program and experiences.

The findings of this study provide an in-depth understanding of the physical and psychological challenges faced by the WSC, as well as the importance of four constructs (capability, opportunity, motivation, and support) for determining behavioural change with regards to being active. Coaching and mentoring were proven to be purposeful, measurable forms of talking support, providing depth of support, including: being listened to, learning tools and techniques, assisting to improve motivation levels and promoting action, and improving overall mental health. Wellbeing and pain management were both negatively impacted as a result of sustaining a walking spinal injury, with the need for clear, consistent professional and social support established for hospital phase and beyond. By understanding the capability, opportunity, motivation, and support of a WSC individual, behaviour can be changed for the better, with influencing factors being addressed, barriers overcome, and a greater engagement in physical activity achieved.

Furthermore, this study also contributes to knowledge by the development of a new conceptual behavioural change model, namely Behavioural COMS model, and the Positive Behavioural Change Framework, which encompasses the new model and Transtheoretical model (Prochaska & DiClemente, 1986). This conceptual framework aids understanding of behaviour in relation to the stage of readiness of change, and helps in promoting progression to maintenance phase. It essentially contributes to knowledge of behavioural change, adding to academia as well as having potential for far-reaching practical use.

Keywords: Walking Spinal Community, Behavioural Change, Motivation, Behavioural Psychology, SCI, Spinal Injury, SCI Ambulate.

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Contents page

List of Tables

List of Figures

Glossary

SCI:	spinal cord injury
SI:	spinal injury
SIU:	spinal injuries unit
TDF:	Theoretical Domains Framework
TMM:	Transtheoretical Model
WSC:	walking spinal community

Chapter 1.0

Introduction

1.0 Introduction

The Walking Spinal Community (WSC) is a growing population and is expected to continue to grow due to advancements in medical treatment for spinal injuries and changing causes of injury (Lawrason et al, 2022). Sustaining any spinal injury results in emotional, physical, and psychological challenges as each person is faced with adapting to and managing their conditions, regardless if there is walking ability or paralysis (Sweet et al, 2021).

An average of seven people a day in the UK sustain a traumatic spinal injury (SI), approximately 2,500 per year (Hartley, 2020; Aspire, 2019, online), to which a third may regain walking ability, depending on the severity of the injury (Sinovas-Alonso et al, 2021; Frankel, 1967). However, there is confusion with regards to terminology, with spinal cord injury (SCI) usually applied to those with permanent paralysis, yet also has been used as a description for spinal injury as a whole regardless of walking ability, with 'incomplete SCI' (Bailey et al, 2015; Jannings & Pryor, 2012) and 'SCI who ambulate' (Lawrason et al, 2022; Van Hedel et al, 2008) also used as a reference. For clarity throughout this study, the WSC is defined as individuals with non-permanent neurological spinal condition, thus walking ability remains or sees a recovery from short-term paralysis to regaining mobility.

The trauma of sustaining a spinal injury can be immediate and life altering (Hastings & Horn, 2009), and individuals are more likely to experience both physical and psychological challenges (Sweet et al, 2021; Hoffmann et al, 2019). To date, data regarding WSC is not readily accessible and is generalised, however data shared through Spinal Injury Unit (SIU) reports provide some understanding of WSC due to referrals of SCI non-permanent neurological injuries, thus walking is possible at some stage. However, not all WSC patients will be referred to a SIU, instead be treated at their local hospital and return home to continue recovery (NHS Scotland, 2019), and those numbers are not readily accessible. Despite requiring additional support on return to home, this is not always pre-arranged nor available, and further challenges are faced by the WSC, who are at times overlooked (Ringland et al, 2019) due to not having permanent, if any, paralysis. The transition from hospital care to home life should be carefully managed to aid rather than hinder recovery, as both physical and psychological challenges are endured (Divanoglou & Georgiou, 2016; Jannings & Pryor, 2012).

Wellbeing is negatively impacted when injury is from a traumatic event or accident (Martz & Cook, 2001), with a near 80% increased risk of developing psychological conditions (Petersen, Meade & Mahmoudi, 2022). Engagement in physical activity can be greatly impacted, with perceived ability or disability framing decisions to participate and the feeling of inclusion (Kattari et al, 2018; Kippis, 2018). Perception of barriers to activity impact decisions (Williams et al, 2014), with attitudes, societal challenges, as well as empathy, judgement, and acceptance by others also impacting participation (Shields & Synnot, 2016).

Benefits of being physically active are well documented in academic, media and government bodies' reports (NHS, 2022, online; Mind, 2022, online; Scottish Government, 2020; Stuart et al, 2015; Bane et al, 2013), however not everyone can or may choose to be active, citing reasons such as lack of time or enjoyment (Hoare et al, 2017). There is much research linking physical activity and the improvement to mental health and general wellbeing (Xu et al, 2021; Caponnetta et al, 2021; Glowacki et al, 2017), with further positive links made between international sporting events, such as increase in engagement in physical activity (Brown et al, 2017; Gibson, 2012), though to which are also disputed, including promises of legacy from the likes of the London Olympic Games (Wainwright, 2022) and impact of austerity measures (Gerard et al, 2020).

Physical, psychological, and social factors impact those with SCI injuries, highlighting the need for support, particularly during rehabilitation stage, to aid recovery (O'Shea & Smedema, 2014; Gomara-Toldra, Sliwinksi & Dijkers, 2014). Furthermore, those with a SI are said to be more likely to be socially isolated due to physical changes and environmental barriers, which again can lead to poor mental health implications (Conti et al, 2022), and as such, support is not only wanted but needed in helping recovery and beyond, including from early stage of initial discharge back into the community (Jannings & Pryor, 2012).

Mental health and impact on wellbeing have increased in prominence across media channels, to which has been further fuelled by Covid pandemic, seeing support services further stretched and struggling to meet the needs (Pierce et al, 2020). Coaching and mentoring have grown in popularity as talking support (Hayden, 2021; Al Hilali et al, 2020), however, there is no consistency in awareness of such support, despite offering a service that has potential for positive contribution to recovery (Skeels et al, 2017), including being empowered to make change, decisions, and action as to what may be right to improve situation and life (Houlihan et la, 2016), as well as being able to share and have a trusted sounding board (Sweet et al, 2021). Both coaching and mentoring assist in enabling positive behavioural change, whilst also improving outlook, self-efficacy, quality of life and mental health (Cadematori et al, 2021; Rethorn & Pettitt, 2019).

Engaging with coaching and mentoring support has long-lasting effects (Beauchamp et al, 2016), though it is important that the attributes of such support, such as role model, supporter, and advisor (Skeels et al, 2017) are addressed, to bring contribution, mastery, and excellence (Association of Coaching 2022, online). Timing of coaching and mentoring is also important, being mindful of the traumatic injury, stage of recovery, as well as potentially being offered as part of rehabilitation phase (Gupta et al, 2019; Stephens et al, 2012), where verbal encouragement can be given, and help overcome self-limiting beliefs regarding ability and life moving forward (Gassaway et al, 2018; Chemtob et al, 2018).

Each person is impacted by efforts of behavioural change, whether this be self-triggered, or as a result of influences from other people, situations, and companies (Wendel, 2020). Behavioural change can be supported through a number of models and theories, examining thoughts, emotions, motivations to give understanding to barriers and pathway to acceptance (West & Michie, 2020; Graham-Jones, 2020; Davila, 2017; Maslow, 1990; Kubler-Ross, 1969). Change can be daunting as emotions are heightened, and regardless if change is sudden (such as due to accident) or transitional (slower pace to adapt), behavioural change will be experienced (Tremolada, 2015). State of readiness to change is a predictor as to the likelihood of success behavioural change, with attitudes, intentions, and behaviours considered key at each stage (Prochaska et al, 2008; Prochaska & DiClemente, 1986). Experiential processes are said to be effective in new behaviour in the early stages of change, with behavioural processes giving greater support and weight to the latter stages (Abrash Walton et al, 2022), with the balance of negatives and gains to change shifting as the stages are reached, with the ultimate goal to reach maintenance, and without reverting back down the levels (Prochaska, DiClemente & Norcross, 1992). When applied to exercise, the Transtheoretical model of behaviour change (TMM) (Prochaska, DiClemente & Norcross, 1992; Prochaska & DiClemente, 1986) has been shown to assist in understanding the stages of readiness and considered intervention strategies, ultimately assisting positive, long-term behaviours (Ferron & Massa, 2013). However, understanding the behavioural change of an individual who has sustained a spinal injury is complex, with physical and psychological aspects to be considered, including perceived barriers and motivations to action and activity (West & Michie, 2020).

1.1 This specific study, rationale, and originality

This study evaluates the impact coaching and mentoring talking support has on the WSC's behavioural change to being physically active, giving greater understanding of motivations and barriers. To be able to achieve this, the following key aspects were essential as part of the approach: to be able to give a voice (Boyle et al, 2022; Ashby, 2011; Mears, 2008) to the WSC community, and gain understanding of their lived experiences (Sweet et al, 2021; Kattari et al, 2018); to be able to measure impact of the WSC population who participate in said talking programs; to gain an understanding of what the key changes are following a spinal injury; to analyse the extent behaviours and motivations impact being physically active; and to evaluate the importance of a support network have on the WSC's activity levels. To assist, this research provided insights into the WSC's emotional, physical, and psychological experiences (Hoare et al, 2018; Koenen et al, 2017), including insights into opinions as to what helps and hinders recovery and enjoyment of life (Market et al, 2019; Michalovic, Rocchi & Sweet, 2019), and what are motivational reasons for activity (Ciammachielle et al, 2022; Chemtod et al, 2018). As a result, this study provides a deeper understanding of behavioural changes (De Leo et al, 2021; Prochaska, Norcross & Saul, 2020; West & Michie, 2020; Prochaska, DiClemente & Norcross, 1992) to activity as a result of coaching and mentoring, and bridges a perceived gap in current knowledge within what is a sub set of spinal injury population.

To be able to evaluate and analyse the impact of the said support, heterogenous sampling was applied, whereby the WSC participants who engaged in either coaching or mentoring programs formed groupings of ‘Coachees’ and ‘Mentees’. A further group participating the research study was ‘Neutrals’, to which they had not undertaken any coaching or mentoring program since sustaining their spinal injury, provided their own rich data, and also did experience coaching on completion of their interview stage, providing further feedback on the talking support experience. This permitted a greater understanding of the groupings, not only on the effectiveness of their chosen program, but also the rich data collated throughout the research. Such an approach differs from other literature, to which tends to focus on either coaching or mentoring engagement (Cadematori et al, 2021; Prochaska, Norcross & Saul, 2020; Gassaway et al, 2018; Skeels et al, 2017). Further rationale for this approach can be found in Chapter 3.

Criteria for participating in this study was concise (Guba & Lincoln, 1982), and included participants being: at least one year from accident, living in the UK, being over 18 years old, and having been physically active prior to the spinal injury, the purpose of which to examine the behavioural changes prior and post event in adulthood. This approach was important to give understanding as to physical and psychological challenges to engaging (Watson et al, 2022), and to explore the influencers surrounding these, as well as potential limiting factors (Williams et al, 2014).

Rationale and originality

The study provides greater understanding of the WSC, the population’s influencing factors to change, and how these help or hinder progress, and overall behaviour (West & Michie, 2020; Hoare et al, 2017). It gives a voice to the population, highlighting the impact to life as a result of sustaining a walking spinal injury (Keonen et al, 2017; O’Shea & Smedema, 2014), and the challenges and obstacles that are faced, whether these be self-imposed, societal or environmental (Beauchamp et al, 2016; Davis, 2005), thus providing greater understanding to better support the WSC going forward.

This study builds upon the academic work already undertaken, examining coaching and mentoring impact on the SCI (Gupta et al, 2019; Chemtob et al, 2018; Gassaway et al, 2018; Skeels et al, 2017; Beauchamp et al, 2016; Ljunberg et al, 2011; Iles et al, 2011), and those who also give focus to the WSC (Jeawon et al, 2023; Lawrason et al, 2022; Vinoski Thomas et al, 2019; Bailey et al, 2015; Jannings & Pryor, 2012). Prior to this study, there was gap in knowledge with regards to the impact support in the form of coaching and mentoring has on the WSC's behaviours and motivations in relation to being active, and as such, this research addresses this gap and give depth of understanding. Furthermore, this study looks beyond rehabilitation stage (Hoffmann et al, 2019; Gassaway et al, 2017), instead focusing on life back at home (Jannings & Pryor, 2012), the physical and psychological challenges, behaviours and motivations towards exercise and activity, and barriers to support, including talking therapies, such as coaching and mentoring.

There is no similar study examining the impact coaching and mentoring as talking support has on the WSC's behaviours and motivations regarding physical activity. Furthermore, the research approach offers fresh perspective on coaching and mentoring, which both being examined within the same study, as well as giving understanding to those who have not received any such program. What remained important throughout was giving participants the opportunity to be heard, to have a voice on the subject matter, sharing thoughts, emotions and lived experiences (Alharahsheh & Prius, 2020), and two phases of the qualitative research enabled rich data to be collected. The first phase provided a basis of understandings from mentees and coachees, with the same questions asked at the start and end of the talking programs. The second phase, to which coachees, mentees, and neutrals participated, addressed the same initial questions and with further, open ended prompts for in-depth discussions, and to where the majority of the rich data came from. Multiple phases of research are not uncommon (Hoffmann et al, 2019; Skeels et al, 2017; Gassaway et al, 2017), and the above was believed to be the best approach to be able to collate as much rich data as possible from all groups.

Behavioural change is an area with many theories and models, each of which have their positive and negatives, and were found to be not effective in providing understanding of and guidance to the WSC’s behavioural changes in relation to being active. Change models were critically evaluated, and COM-B (West & Michie, 2020) and TMM (Prochaska & DiClemente, 1986) were considered the most relevant due to their focus on behavioural intent and change, and as a result of the data analysis, have been developed further to offer a conceptual behavioural change framework that bridges behavioural intent and action with constructs to behavioural change. The conceptual framework is to be tested in future research to evaluate the effectiveness in better understanding and managing behavioural change, whilst also giving enabling greater awareness and management of influencing factors.

1.2 Research aims and objectives

The aim of this study is to investigate the impact coaching and mentoring has on the WSC’s behavioural change and motivations in relation to being physically active. In order to achieve this, it was important participants had access to coaching or mentoring programs over a period of time, and to which thoughts, emotions and experiences of life post-spinal injury could be shared at each research stage, giving an understanding to activity change, as well as physical and psychological challenges. Furthermore, access to support, as well as social interaction, inclusion, and engagement were also considered, as well as influences and motivations to action. To be able to fully address the research aim, relevant literature was reviewed and primary data gathered.

The following research objectives were set to help achieve the above:

Research Objective 1: To understand and explore the behaviours of the UK walking spinal community, and the impact the spinal condition has on being active.

Research Objective 2: To explore the walking spinal community being physically active in relation to behaviours and motivation.

Research Objective 3: To explore theoretical underpinning to further develop a behavioural model to measure the phenomena surrounding behavioural change and motivation.

Research Objective 4: To explore and critically analyse the impact Coaching and Mentoring has on the WSC's behaviours and motivation to participate in physical activity.

Research Objective 5: To provide researchers a new conceptual framework to behavioural change, to which can be used practically outwith academia.

1.3 Research design overview

This study applies an Interpretivist philosophical approach, and is based on the principle that the social phenomena are known and allows for looking at the meanings these have on social factors (Saunders, Lewis & Thornhill, 2019), and to which a greater depth of understanding is gained through seeking experiences and perceptions of the social context (Alharahsheh & Pius, 2020). This study adopts a qualitative approach, with semi-structured interviews undertaken, and experiences, thoughts and perspectives collated, with viewpoints being subjective, and therefore not scientific based (Creswell & Creswell, 2018). Inductive methodologies are used, giving a bottom-up approach to the data, allowing the data to have determined themes, and remaining open and unbias to what the data revealed (Braun & Clarke, 2018; Braun & Clarke, 2006).

1.4 Chapter synopsis

This study comprises of five chapters, with the following structure reflecting the process:

Chapter 1: Introduction – this chapter has provided an introduction to the research aim, the rationale, and originality of the study, as well as the research objectives. It has also provided an overview of the methodological approach chapter synopsis, to which concludes this chapter.

Chapter 2: Literature Review – this chapter reviews existing relevant literature, with discussions and analysis throughout. The chapter is divided into two distinct parts, the first focusing on consumption of physical activity and the WSC; the second part consisting of coaching and mentoring as talking support, and the behavioural change and motivations of the WSC and the wider spinal community. It discusses theoretical frameworks, with focus pertaining to change, perception and wellbeing.

Chapter 3: Research Philosophy and Methodology – this chapter discusses the research philosophy and methodology adopted by this study, and gives rationale for interpretivist, inductive approach using semi-structured interviews. It also discusses the engagement with a third party charity to reach a specific target audience, and how the study's credibility and rigour of data has been protected.

Chapter 4: Research Findings and Discussion – this chapter analyses the primary data collected from the semi-structured interviews from both phases of research. The chapter methodically presents findings using themes generated through reflexive thematic analysis (Braun & Clark, 2018), giving understanding as to how these were developed and highlighting both manual and software analysis. Conclusions are given for each sub section, all pertaining to the WSC impact of sustaining a walking spinal injury. It also discusses and proposes a conceptual model and framework, both of which are as a result of the primary research findings.

Chapter 5: Conclusion – this chapter presents a summary of work and discusses the study's three key areas of contribution to knowledge. Limitations of research and future research recommendations are also considered, before a final conclusion is given.

1.5 Chapter summary

This chapter has provided an overview of the study itself, including rationale and originality, and the study's contribution to knowledge. Research aims and objectives that have guided the study are identified, with a brief summary of the philosophical and methodological underpinnings for this research. The chapter synopsis provides guidance as to the structure of the thesis.

Chapter 2.0

Literature Review

2.0 Introduction

The purpose of the research is to examine the impact coaching and mentoring talking support has on the walking spinal community's behavioural change and motivations to being physically active. As such, to better understand the academic work within the focal and relating areas of behavioural change, the literature review is divided into four distinct sections (Figure 1).

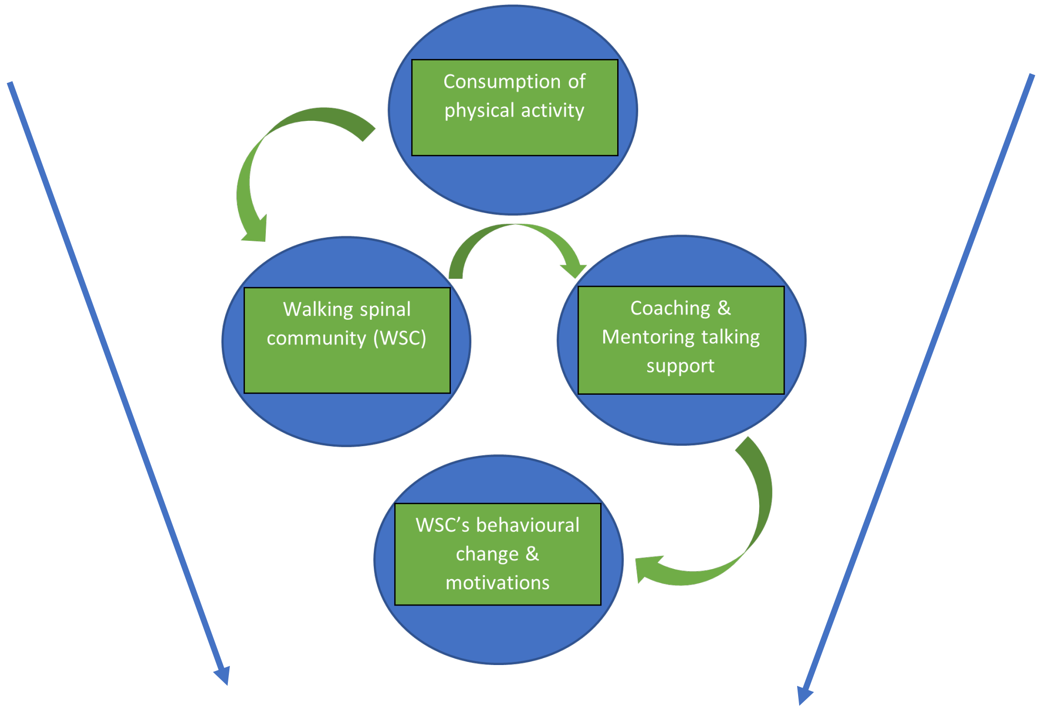


Figure 1: literature review discussion points

The first area explores consumption of physical activity, thus the influencing factors that contribute to or hinder engagement, the link to better health, and the global effort by government and authorities to promote health benefits to living a life with more movement. The purpose is to give understanding of physical activity, and is later examined in relation to the WSC. The second and third areas, walking spinal community and talking therapies of mentoring and coaching, have been given equal weighting with regards to importance and process of understanding, however for the purpose of flow and to ensure clarity on the target audience and interlinking this community with coaching and mentoring, the WSC is discussed prior to the talking therapies. To assist in understanding, current research surrounding the spinal cord injury (SCI) community gives a strong basis, with further, albeit limited, literature of the WSC being examined, as for reasons that are unclear, the WSC does not have prominence in literature, despite being a part of the spinal injury community. However, as with the SCI community, the WSC do have their own physical, emotional, and wellbeing needs, including talking support, which leads on to the third area, mentoring and coaching as talking therapies, and examining what are growing in popularity, yet are not readily available to the spinal community, and thus a greater understanding is required. The final key section of the literature review to give understanding to the research area is the WSC's behavioural change and motivations. Having reviewed past research, change models and matrices have been identified and analysed, with certain gaps in process being identified within the area of coaching and mentoring impact, as well as the understanding to behavioural change. Thus, as a result of the data analysis, two matrices are considered most relevant in relation to this study, and key for further development to enable effective and positive change management whereby behaviours, motivations, emotions, impacting factors and action are not only recognised but addressed as part of a process.

Key themes became apparent during the extensive literature review when examining to better understand the four focal areas of this research, as shown in Figure 1, and these include managing change (West & Michie, 2020; Tremolada, 2015; Prochaska, DiClemente & Norcross, 1992), motivation and consequential behavioural traits (West & Michie, 2020; Abrash Walton, 2018; Ferron & Massa, 2013), perception of self and situations (Hosseini & Padhy, 2019; Hoare et al, 2017), support networks (Simpson et al, 2020; Chemtod et al, 2018; Jannings & Prior, 2012), and health and wellbeing (Xu et al, 2021; Caponnetta et al, 2021; Radmark et al, 2020; Glowacki et al, 2017). No behavioural change model gives the required understanding of this particular focus area, which has led to two matrices being explored further and a proposed conceptual approach.

The aim of this chapter is to evaluate what is known within the above areas, and identify any gaps in knowledge. To assist, there are two distinct areas to this literature review, and as such has been split into **Part One** and **Part Two**:

Part One (Chapters 2.1 and 2.2) discusses and evaluates background information, where scene setting and context of physical activity and the walking spinal community are presented, with a mix of academic and industry supporting materials.

Part Two (Chapter 2.3 onwards) provides a conceptual academic critique / evaluation of coaching and mentoring, and the area of WSC's behaviour and motivation.

Both parts, although distinct in their literature reviews, enable a more thorough examination of the discussed areas.

Literature review – PART ONE

2.1 Consumption of physical activity

The benefits to being active, whether it involves household or work activities, physical exercise / activities or sport, are well documented in academia, media and government bodies (NHS, 2022, online; Mind, 2022, online; Scottish Government, 2020; Stuart et al, 2015; Bane et al, 2013), however not everyone can or may choose to be active, citing reasons such as lack of time or enjoyment (Hoare et al, 2017). However, by being more active, the health benefits are far-reaching, as exercise / physical activity helps to prevent and treat conditions, including related to the heart, diabetes, obesity, cancers, joints / mobility, as well as mental health (NHS, 2022, online; World Health Organisation, 2018; Glowacki et al, 2017). Regular physical activity can also increase life expectancy by 30% (NHS, online, 2022), and has long-term benefits to tackling health conditions (Reiner et al, 2013). Yet despite knowing the benefits, the motivation to participate is influenced by other factors; psychological, social, environmental and policy (Hoare et al, 2017), thus highlighting the need to understand an individual's behaviour and motivation to bring positive change to their attitude and action surrounding exercise.

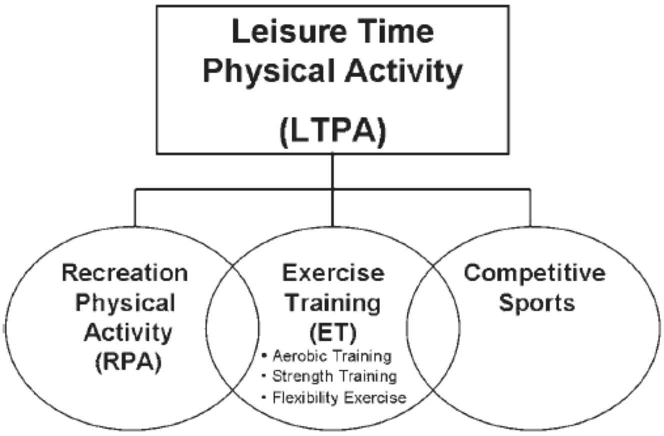


Figure 2: Categories of Leisure Time Physical Activities (Busch et al, 2008)

Leisure time physical activity, thus an activity of choice, is considered to have three main focal areas, as shown in Figure 2 – recreational, exercise training and competitive sports (Busch et al, 2008). Occupational physical activity also exists, whereby people participate in activity as part of their job / role, and this will be for a far longer duration than leisure time physical activity (Howley, 2001). As such, for the purposes of this research, leisure time physical activity will be the focus rather than occupational, and the following sub chapters look at and examine the literature and research surrounding each.

2.1.1 Physical activity – recreational and exercise training

Recreational physical activity and exercise training are intentionally considered together for this sub chapter, as opposed to separately, as the two are said to be interlinked when considering recreational activities (Liu-Ambrose & Eng, 2015; Best, Nagamatsu & Liu-Ambrose, 2014; Howley et al, 2001), just as exercise training is linked to competitive sports, as shown above.

In 2018, the World Health Organisation (WHO) published its report "Global Action Plan on Physical Activity 2018-2030: More Active People for a Healthier World", with the intention of bringing the health benefits and need for change to the global platform. The report highlights the concern across the globe of lack of movement by all ages, and the resulting impacting to individuals and also health care costs. According to this report, globally, the cost of physical inactivity costs INT$54billion per year, with a further INT$12billion in lost productivity. The cost to health in the UK also continues to the increase, as does the resulting impact to bodies, where inactivity has been named the 'silent killer' (NHS, 2022, online), and is said to be one of the leading causes of premature death in Scotland (Public Health Scotland, 2022, online). Lack in activity is associated with one in six deaths across the UK, and is costing the UK economy an estimated £7.4billion per year, including nearly £1billion to the NHS (UK Government, 2022, online). However, physical inactivity causes other issues, including obesity, with obesity-related illnesses costing the NHS approximately £6billion per year (UK Government, 2021, online). However, as highlighted by the UK Government, the health and productivity costs are not fixed, they can be reduced, but it takes everyone to play their part to achieve this. Yet, barriers to physical activity exist and must be taken into consideration (Hoare et al, 2017).

Physical activity does not necessarily mean running a marathon, sweating profusely; it can instead be anything that has a person actively moving, such as gardening, swimming, walking, running, climbing upstairs, dancing, painting, cycling, house chores, lifting, and moving items (NHS, 2021). There are also many sports activities that can also be enjoyed as recreational level, such as basketball, golf, elite swimming, skiing, elite cycling, horse-riding, and gymnastics. Essentially, physical activity is "any bodily movement produced by skeletal muscle that requires energy expenditure" (WHO, 2018, online). Nations are giving focus and effort to improving the general wellbeing of populations, with a focus on getting more active, including here in the UK: Public Health Scotland's Improving Health, Improving Activity (2022); Scottish Government's A More Active Scotland: Scotland's Physical Activity Delivery Plan (2018); UK Government's Health Matters: Getting Adults Active Every Day (2016). The UK has launched a number of campaigns to get the public more active, including undertaking further research, to which the Government's study shows approximately 34% of men and 42% of women are not active enough (UK Government, 2022, online). An example of an initiative rolled out in a concerted effort is 'HeadUp' in England, where a wrist device is worn, monitoring activity and rewarding for levels are being rolled out as incentives to get all ages moving (UK Government, 2021, online). A further study had university students use a Fitbit device to track number of steps and heart rate, and a one-mile field tests, as part of assessment to assess any improvement on physical activity, physical health and academic performance, to which it was said to using such a device aided evaluation, and the results demonstrated a direct positive correlation between performance and lifestyle (Broaddus et al, 2021).

However, rolling out campaigns does not necessarily correlate with awareness and uptake, with an example being England's Active for Life three-year campaign (late 1990s) aimed specifically at the advice that adults should exercise 30 minutes of moderate level at least five times per week, and to which showed no evidence of improved activity in the long term (Hillsdon et al, 2001). Thus, it is suggested, the need for considered education platforms and measurement is important to understand effectiveness, and that physical activity messaging may indeed play an important role in improving engagement (Williamson et al, 2020).

The recent Covid-19 pandemic, which impacted UK population as of March 2020, has also had an impact on consumption of physical activity, including accessing activities, social fears and restrictions, mental health, as well as Long Covid illness (Murphy & Mosler, 2022; Searle et al, 2021, Molodynski et al, 2021), and as such, adding further obstacles to being active. As the world population is only emerging from this pandemic, current available research is limited, yet insightful. As a result of the first Covid restrictions lockdown where day-to-day lives were severely restricted, from March 2020 to May 2020, the 'active' population across England dropped by 7.1%, meaning 3million few adults remained active, though 21million enjoyed leisurely walking, and this has continued to increase since, with more than 13million adults taking part in fitness activities at home (SportEngland, 2022, 2020). Such research is giving greater understanding of people's barriers as a result of the ongoing Covid virus, though does not examine the reasons for engaging and whether maintenance follows. With this in mind, the COM-B model (West & Michie, 2020), to which is later discussed in Chapter 2.4.1.2, is also highlighted as a working theory to understanding engagement to activity (SportEngland, 2022). This research suggests the applied analysis to the public's underlying behaviours aids overcoming and successfully transitioning to regular movement and enjoyment of the chosen activities, as well as gaining health benefits.

Over the last decade, mental health has become a more prominent topic, being more readily discussed and documented in the public through media, work of charities such as Mind, Heads Together, Mental Health Association, Samaritans, highlighting the need to talk, as well as the increasing levels of support available, including online options (BBC, 2022, online; Prescott, Rathbone & Handley, 2020). However, demand continues to increase, with has been further fuelled by Covid pandemic, which also has been linked to the varying levels with regards to mental health deterioration, from minimal to distress, and to which support has become more urgent (Pierce et al, 2020), and which has put further strain on an already stretched support service, as well as the consequences of social distancing for lengthy periods of time (Molodynski et al, 2021).

There is much research linking physical activity and the improvement to mental health and general wellbeing (Xu et al, 2021; Caponnetta et al, 2021; Glowacki et al, 2017) and the correlation between them is well documented with being more active promoted as a way of improving mental health (Scottish Government, 2022, online; UK Government, 2022, online; Searle et al, 2021). However, as charity Mind (2019) highlights, it can be challenging at times to be physically active, especially if feeling unwell, though also highlights benefits, including improving moods, enjoying better sleep, managing stress, anxiety, and negative thoughts, having a social support and connection, and improving self-esteem.

Exercise offers an anti-depressant effect, though depending on level of poor mental state, exercise alone may not provide enough assistance, and medication may also be required (Radmark et al, 2020). The best approach to help individuals with depression and poor mental health can be challenging, with more research required in this area regarding physical activity, medication, and other sources of support, yet each individual area does assist (Xu et al, 2022; Radmark et al, 2020; Glowacki et al, 2017). Millions of people across the globe suffer from poor mental health and associated disorders, for which no treatment is received, and where one in eight people live with mental health disorder (World Health Organisation, 2022, online). As mentioned previously, it is also important to understand what people’s motivations and barriers to exercise are, so they can be better assisted to become more active and reap the benefits to general health and wellbeing, including mental health (Michalovic, Rocchi & Sweet, 2019; Hoare et al, 2017; Glowacki et al, 2017; Stephens et al, 2012).

Understanding the behaviours, and resistance and motivating factors to physical activity are examined in Chapter 2.4. However, raising the idea that there are other reasons for participating / not participating in activity other than physical ability and to which also impacts engagement levels, is an important reminder that physicality is not the only consideration within this research, which focuses on the walking spinal community. Such ideology of physical, mental, and emotion considerations have already been researched and developed, with models including COM-B (West & Michie, 2020) and TMM (Prochaska, DiClemente & Norcross, 1992; Prochaska & DiClemente, 1986), as well as change management models proving relevant to this research area. Each are examined during Chapter 2.4.

2.1.2 Physical activity - competitive sports

One of the Scottish Government's objectives is to increase sports participation, as well as general physical activities, to improve the nation's general health and wellbeing, with sports clubs, voluntary clubs / groups, and individual activities all playing a role in delivering this ambition (Scottish Government, 2020, online). Funding is just one obvious obstacle, but others are leadership, equality, capability, capacity, strategy, and organisation (Jarvie Report, 2019). How these will be tackled will differ per grouping, however, the last 10 years has shown a positive movement within the UK regarding being active, following the 2012 Olympics / Paralympics events in London (Grey-Thomson, 2012, online; SportEngland, 2012, online), and to which there are further benefits to communities and the population as a whole, such as jobs, further events, tourist attraction (International Olympic Committee, 2021, online). The International Olympic Committee publicly declared in 2018 that the movement has continued to be positive in subsequent years, with substantial economic benefits, as well as sports participation and interest. The initial numbers within the same year of the Olympic Games, as released by SportEngland (Gibson, 2012), showed more than 750,000 additional people taking part in regular exercise, paving the way to support the UK Government's focus of improved health, including getting more active. However, Mahtani et al (2012) state there was insufficient evidence to support such claims at that time, and to which is later supported by Cummins et al (2018), who state main benefits were felt by the communities closest to London. For true comparison to be given, studies should be undertaken into activity engagement levels prior, during and following Olympic Games (Mahtani et al, 2012). Further research suggests the lasting legacy is perhaps limited to the realms of exercise and sport, with the London Olympic Games said to be less about sport and more on being a cash injection, with promised legacy projects not coming to fruition (Wainwright, 2022), and to which austerity measures across the UK negatively influenced sport participation, specifically grassroots sports and clubs (Gerard et al, 2020).

When examining the likelihood to participate in a sport, such as swimming, there was said to be positive effect, where there was a desire to engage, with those that watched the Olympic event in-person at a live event more likely to participate in the sport in the future versus those who watched the same sport on the television (Brown et al, 2017). This does give understanding as to whether the desire was short or long-term, but it does show there was motivation to engage in the activity as opposed to only watch.

However, a noticeable positive movement over the last 10 years has been of those living with a disability being not only encouraged to participate in sporting activities, but supported and fully engaged to compete on national and international levels (Blauwet and Willock, 2012). The Paralympics Games came as a result of the success of international multi-sport games for persons with a spinal cord injury, and has continued to grow exponentially since (Tawse et al, 2012), and has had significant growth over the past 50 years in terms of number of athletes and nations participating, as well as spectator and media reach (Peake & Davies, 2022). The London 2012 Olympics and Paralympics created a strong platform for this change (Sport England, 2016; Grey-Thomson, 2012, online), and this has been further developed with the successful introduction and highly successful Invictus Games, and Commonwealth Games in Glasgow in 2014; 2016 Olympics in Rio de Janeiro; 2021 (2020) Olympics in Tokyo, and more recently, Beijing Winter Olympics in 2022, and Birmingham 2022 Commonwealth Games.

The 2022 Commonwealth Games in Birmingham received high media coverage, the creation of 40,000 localised jobs and skills opportunities as well as 14,000 volunteer roles being celebrated (UK Government, 2022, online), and were supported by £35million investment (SportEngland, 2022, online). The Games, which are the largest multi-discipline sporting event to be held in England since the 2012 Olympics (IOC, 2022), has been hailed another great showcase for sport, diversity, and inclusion, with the para-games offering more sport than previously promoted (UK Government - Department for Digital, Culture, Media and Sport, 2022, online). A Government report, Birmingham 2022 Commonwealth Games: The Highlights, states the Games have been hailed as one for all, to encourage participation and activity beyond the time, to inspire as well as increase mental health awareness, with surveys showing 43% of spectators saying they would increase their activity levels, this increasing to 71% for under 25s. It will once again take time before research is available measuring the impact such Games has had on UK residents to being more active, and also the impact on participation in competitive sport for all, however pre Commonwealth research shows of great expectation for regional rejuvenation (De Ruyter et al, 2020), as well as the above Highlights report detailing increase in physical activity participation.

A further highlight for the sporting arena during 2022 was wheelchair rugby being given the same world sport recognition as its fully abled counterpart, as the competition was held as part of the Rugby League World Cup main event for the first time, thus also giving the opportunity of more television coverage (Rugby League World Cup, 2022, online). The Physical Disability Rugby League (PDRL) World Cup runs alongside the Rugby League World Cup, where there are both women and men’s teams for the latter, and PDRL welcome mixed gender teams and abilities. The decision to bring all Rugby League World Cup competitions (men, women, physical disability) to be played concurrently means it was the most inclusive rugby world competing event ever to have taken place (SportEngland, 2022, online). All games were aired on BBC, giving prominence to the sport and competition.

With regards to inclusion and equality, the UK Government announced in January 2020 that the Paralympic Games would remain on free-to-air television, alongside both summer and winter Olympics and the FIFA World Cup (BBC, 2020, online). The decision to add the Paralympics Games to the protected events listing underpins the efforts for inclusion, diversity, equality, and access, and to ultimately eliminate explicit bias of unintentional judgement affecting decisions and behaviours (Ciammaichella et al, 2022). It has been reported by the BBC (2020, online) that women's sports events could be further added, as parity to the men's events. But if there is to be a cultural change to keep interest and participation levels on the increase, funding, as mentioned earlier, must be considered (Jarvie Report, 2019).

Scottish Government funding for SportScotland is an example of inconsistent support, where total funding levels have moved across peaks and troughs, with 2015-2016 seeing the higher level at £97million, compared to a low of £56.7million in 2017-2018 (Jarvie Report, 2019). In part, while this is due to new facilities being funded, any net funding losses will have an impact, such as with the choice of sports and activities available to the public, as well as access charges to venues and clubs. The Jarvie Report 2019 highlighted that any increase to access charges is a key issue to the public. To understand the impact to the WSC, accessibility through choice of activities and costs form part of this research when considering barriers to participation. What is evident through the review of literature (Scottish Government, 2020; Jarvie Report 2019; SportScotland, 2019; Reid, 2012) is that sports clubs, particularly voluntary ones, make a large, positive impact, with volunteers working together to organise and deliver activities, encouraging participation and are crucial to community inclusion, and to overcome any perceived social exclusion or discrimination (Schaillee et al, 2019).

What is unclear through literature review is accessibility and issues faced by the WSC where there may be a lack of understanding of conditions that in turn impact the decision to participate. For elite athletes, this obstacle can be more easily overcome by the trained community working directly with participants, where physicality and psychology are ingrained, and encouragement, support and high-level coaching are the norm (SportScotland, 2020). However, the non-elite community is not operating within this structure, and so those with any disabilities face emotional challenges when looking at participation in activities (BackStrong, 2020, online).

Social perceptions of disability in sport can be viewed from that of the participant and that of external, third parties, namely those viewing, coaching, organising or team members. As is later discussed in Chapter 2.2.3, how someone's ability / disability is framed has a direct impact on decisions, and ultimately, can impact inclusion and participation (Kattari et al, 2018; Kiuppis, 2018; Dunn & Andrews, 2015). Other research has highlighted how social attributes can influence our perceptions of the person and their sports participation, where judgements are made on capabilities (Purdue & Howe, 2012).

Though there is a vast choice of sporting activities to choose from, and it is a personal decision as to the activity to be enjoyed, this will be based on perceived barriers to participation (Williams et al, 2014). One in five adults are reported to have a long-standing illness or disability, which impacts their general wellbeing and limitations (SportEngland, 2020, online). The organisation's surveys have shown that disabled respondents are twice as likely to be inactive compared to fully abled counterparts, yet the research stops short in that the reasoning for inactivity have not been shared, as it may not necessarily have been due to the physicality alone. Instead, attitudes, societal stereotypes and empathy and acceptance from others are considered barriers to physical activity participation (Shields & Synnot, 2016).

In January 2020, SportEngland ran a social media campaign highlighting their investment to get more people active, and refers back to their 2016-2021 strategy. It stated that 25% of their £250million funding would be used to increase activity among the population, where all abilities and ages were encouraged to not only get more active, but to sustain the activity, bringing long-term health and wellbeing gains to all. Other factors influencing sports participation in relation to SCI athletes have been examined by Wu & Williams (2001), who also highlighted friends and peers with other or similar disabilities have greater ability to influence than rehabilitation specialists by bringing a stronger bond and trust, with those who previously enjoyed sports more likely to engage than non-active patients. As such, it is important to understand barriers (Hoare et al, 2017) and who are the key influencers in someone's life, as the social organisation around someone has a direct impact on behaviour (Stephens et al, 2012; Wu & Williams, 2001).

2.2 Walking Spinal Community

To understand the WSC, it is important to consider the abilities or disabilities of having a spinal condition, and how this may impact life. There is limited literature with regards to the WSC, with instead research focussing on Spinal Cord Injury (SCI) patients who have permanent neurological damage which in turn visibly impacts walking and mobility ability, as well as general wellbeing. Individuals who have a spinal condition and can walk are referred to using varying terminology, including individuals with incomplete SCI, SCI patients who ambulate or walking spinal patients.

As such, this chapter will first examine the WSC itself, providing a clear definition for this research, before examining the size of the community and finally, explore the realms of identity, ableism, and invisibility.

2.2.1 WSC: definition

Walking recovery is one of the main goals of SCI patients of all ages, with neurological status and any impairment being important parts in what are precise evaluations (Sinovas-Alonso et al, 2021; Scivoletto et al, 2014). Walking achievement offers a level of functional independence, another key objective for post injury (Moller et al, 2021). Spinal cord injuries are complex, and are becoming a more common cause of disability (Wang et al, 2018), though where injuries are classified as neurologically incomplete, there is a higher potential to regain walking ability (Engel-Haber et al, 2020). It is this population, the WSC, that the research focuses on.

In relation to this research topic, and as will be discussed in Chapter 2.2.3 with regards to language and labelling, care and respect must prevail, and avoid a continual focus on differences in addition to labelling the WSC or person as 'special' or 'different' (Kattari et al, 2018), as if not an equal in society. For the purposes of this research, and to ensure clarity from the outset, the WSC is defined as individuals with a non-permanent neurological spinal condition, thus walking ability remains, or sees a recovery from short-term paralysis to regaining mobility. During this research, spinal injuries (SI) reference will refer to both complete and incomplete cases, therefore, a combination of paralysed and walking spinal patients / sufferers. Where SCI is used, this will refer to paralysis, in an acknowledgement of there being some level of paralysis. This will help to separate the two communities and ensure no confusion when looking at the WSC (who do not have permanent neurological damage, and as such are mobile in walking).

In the UK, the WSC is a growing population (Aspire, 2021, online), is expected to continue to grow due to advancements in medical treatment and the changing causes of spinal injury (Lawrason et al, 2022), and is one that involves emotional, physical, and psychological challenges as each person is faced with adapting to and managing their conditions (BackUp, 2021, online; BackStrong, 2021, online). This is even more challenging when the injury is caused by a trauma: an incident that, in an instant, changes what was previously a 'normal' life (Aspire, 2021, online; Spinal Injuries Scotland, 2020, online; Gupta et al, 2019; Jannings & Pryor, 2012). Due to the ability to walk, whether this was regained or was unchanged, the condition may be invisible to others, however, the injuries are very real, as are the long-term effects, and as such, regardless of classification of the spinal injury, there are varying degrees of rehabilitation requirements and needs (Gupta et al, 2019). Reasons for injuries, as detailed in Glasgow Spinal Injuries Unit reports of 2019, 2020, 2021, 2022, being fall, road traffic accident, medical, industrial injury, assault, penetrating injury, sporting injury, domestic injury, and self-harm.

What is currently unclear is the size of the WSC, and it would appear this data is not readily available due to varying factors ascertained through initial research:

- NHS organisations internally report SCI and SI but to date, the author has not been able to access this data, though it is known internal coding is used to state nature, for instance spinal fracture and neurological damage (Craig, 2021, email). As such, the reporting and lack of visibility to external people makes it difficult to understand the number of people suffering spinal injuries each year, and the WSC as a collective group. This continues to be explored further as part of this research.
- Some of the people with invisible spinal conditions wish to keep details private, not stand out and be treated differently, avoid questions and

misunderstanding on the nature of their health (BackUp, 2020; BackStrong, 2019).
- There are varying approaches to reporting across NHS Scotland and England, resulting in discrepancies.
- Not all WSC have care via a Spinal Injuries Unit (SIU), instead they may be treated in a trauma ward at a city hospital. As such, SIUs cannot capture the data for all spinal injuries (NHS Scotland, 2019).

When researching statistics of the WSC, it has become clear there are obstacles to gaining information, with annual reports being more generalised, without the statistics on patients themselves. However, Scotland's only SIU, Queen Elizabeth National Spinal Injuries Unit, based in Glasgow, does provide this information within their annual reports, and as such has been used for the purpose of gaining insight into the WSC. With regards to the point on a variation as to who attends the SIU, NHS Scotland's 2018/2019 to the most recent 2021/2022 reports from Queen Elizabeth National Spinal Injuries Unit highlight that although patients with spinal injuries are accepted for admission at the main SIU in Glasgow, this is as a referral from the treating hospital. Therefore, although those with SCI non-permanent neurological injuries are welcome, it is not a definite that the patient will go to that facility. Likewise, the patient can also be declined medical attention at SIU, with the local hospital being asked to continue care. As such, the SIU's data is somewhat restrictive in understanding the WSC, as the reports can only provide details to what has been processed from the unit, and as such, gaps remain in knowledge, understanding and statistics.

An illustration of this is from the forementioned most recent NHS Greater Glasgow & Clyde's Queen Elizabeth National Spinal Injuries Unit Annual Reports, spanning from 2018/2019 to 2021/2022 (Table 1). New patient numbers have remained level over the last two reporting periods, which coincides with the Covid pandemic, although it must be pointed out these were higher for the years previous. An important figure to be examined for the purpose of this research is the number of patients referred but not admitted. The report states this is due to the patients' conditions falling out with the scope of service and deemed not at risk of neurological compromise. Instead, the referral hospital has continued the care of the spinal injury patient. While 2019/2020 has shown a reduction in non-neurological patients being referred compared to the year before, it must be noted, this does not necessarily mean there is a reduction in the number of people with walking spinal injuries and / or conditions across Scotland within that timeframe, but only reflects the referrals to the SIU. The 2020/2021 report shows lower new patients and day cases, but again an increase in out-patients, all of which the Covid pandemic and restrictions had an impact on care, as also highlighted by patients during the research phases of this study (see Chapter 4).

	New patients	**Day cases**	**Out-patients**	**Spinal operations**	**Referred but not admitted**
2018/2019	138	757	1,297	40	388
2019/2020	139	645	1,984	60	288
2020/2021	103	434	2,251	44	200
2021/2022	137	543	2,241	38	229

Table 1 – Queen Elizabeth National Spinal Injuries Unit statistics (Annual Reports, as issued in 2019, 2020, 2021, 2022)

Although the SIU annual report provides an insight into spinal unit demand, it can be argued that it also provides a very narrow insight into the overarching data as to the WSC. According to the Spinal Injuries Association (SIA) (2022, online), data shows an increase in the number of spinal cord injuries each year, up from a previous estimation of 1,000 to more recently, 2,500 per year. Given the annual figures as revealed by the SIU, and supported by SIA, it would be fair to question the accuracy as put forward by various spinal charities and propose these figures may have increased since initial findings in 2017. It is also important to remember, NHS Scotland operates 14 organisations (Ayrshire & Arran, Borders, Dumfries & Galloway, Fife, Forth Valley, Grampian, Greater Glasgow & Clyde, Highland, Lanarkshire, Lothian, Orkney, Shetland, Tayside, Eileanan Siar Western Isles), most of which manage spinal patients and do not have to refer to the SIU in Glasgow, Scotland's main SIU, especially if it is perceived the condition is outwith SIU's remit should there be little / no neurological damage.

To date, this research highlights the restrictions and varying consistencies of reporting, particularly as NHS boards are not required to provide WSC numbers. Instead, it appears there is a tendency to report SCI numbers as a whole, with a focus on complete SCI (ie, paralysis) as opposed to spinal injuries, categorising on a scale from complete to incomplete (SIU, 2022). NHS medical teams do, however, record number of patients that sustain spinal fractures and neurological issues but are inconsistently coded as internal use, and according to a senior spinal consultant, public reporting of these is unknown, nor does the data capture those without hospital admission (Craig, 2021). The mixed nature of reporting is an area that will be investigated further, with the view of being able to gain insight into true numbers with regards to the WSC. Furthermore, the interaction with medical experts in relation to gaining accurate figures for the WSC is explained in Chapter 3.6.1.

2.2.2 Determining size of the WSC

In relation to SCI, Barbeau et al (1999) provide an equation for global SCI cases each year to ascertain general figures – between 20 and 50 cases per million per year – and to which is still considered applicable today. However, NHS considers the figures to be higher when taking into account walking spinal patients (Baliga, 2023; Craig, 2021), and will be discussed in this chapter. Although the report by Barbeau et al (1999) is over 20 years old, it has aided an initial basis to work, and also correlates with figures shared by WHO, which global incidence rate is estimated to be between 40 and 80 cases per million people (WHO, 2013, online), though there are variations between countries, including United States has 30-40 cases per one million people, Netherlands having 10.4 per million (Vazquez-Farinas & Rodriguez-Martin, 2021), and Spain showing 23.5 per one million people of the population (Perez et al, 2021). NHS Scotland spinal consultants currently consider 40 SCI cases per million per year as realistic median levels not only in Scotland, but globally, therefore the higher level of variation as to what Barbeau et al proposed. If 20–50 cases per million is applied, then the UK as a whole will have between 1,332-3,330 new SCI cases per year (based on population of 66.6million), with Scotland having between

108-270 cases (population of 5.4million). This correlates with the SIA estimate, when looked at in relation to the higher number.

What is also of interest is that Barbeau et al (1999) highlight the Frankel Scale, developed in 1967, which provides the estimation that 25% to 33% of traumatic (accident) SI patients who have initial paralysis or limitation will regain the ability to walk, and is still considered as viable, though to which percentages are expected to improve in time due to advancements in medical treatment (Lawrason et al, 2022). Further studies have suggested higher figures, including those who experience non-traumatic SI have 58% chance of walking ability, with traumatic SI said to be lower (but number unknown) due to nature and complications of injury (Sturt et al, 2009). A more recent study proposes 41% of patients with incomplete SCIs (or WSC), where spinal cord is not fully severed and neurological ability is present, who have the ability to stand or walk can regain full walking function within six months of injury (Sinovas-Alonso et al, 2021), though this does not make clear if this refers to traumatic or non-traumatic SI injury. With the absence of more recent statistics surrounding SI likelihood of walking, to which further research highlights there is limited accuracy of validated models to ascertain this (Phan et al, 2019), the Frankel Scale is deemed as the most relevant guide for traumatic injury, giving basis to understand those with a SI regaining some mobility, and is still supported by NHS today (NHS Scotland, 2021).

When examining Queen Elizabeth National Spinal Injury Unit’s report figures, it can be argued that the SI figures are far greater than what the Barbeau et al (1999) equation identified, to as mentioned, when applied, would mean Scotland having a further 108-270 new SI cases per year, and UK 1,332-3,330 new SI cases per year. With focus back on Scotland and the Glasgow SIU reports, the 2018/2019 figures show SI figures to be higher, as 138 new inpatients were recorded with a further 388 referrals that were declined, a total being 526 known spinal patients via SIU within Scotland. This total number decreases to 427 for 2019/2020 (139 new inpatients, 288 referred but declined patients), and then from 2020, Covid pandemic occurred, impacting general hospital admissions and care for over two years - 2020/2021 did show a decline of inpatients (103) and referred but declined patients (200), the total being 303, with 2021/2022 having a total of 366 (137 inpatients, 229 referred but not admitted). It is important to note the last two reported years may not give a full picture or normal reflection, as services were severely impacted due to Covid. It is also important to remember, these figures exclude any record of SI patients who have mobility but still sustained serious spinal conditions (eg. breaking back, damaging discs or vertebrae), and so it is unknown how large the number is for all spinal injuries sustained in Scotland (or UK) each year. Estimations can only be given, as described next.

On discussion with a NHS spinal consultant (Craig, 2021) surrounding the validity of information as presented in NHS reports and literature, there is a split in recorded information, as it is apparent there is a large number of SI cases that continue to be overlooked in data, yet some recordings are made albeit in code for internal NHS purposes. As such, a higher level of cases per million must be examined. Therefore, based on the SIU data and the information as verified by NHS consultant Craig (2021), it can be argued that the equation for Scotland is 80-120 new SI cases per million, and to which can be applied globally, providing a more realistic view of SI cases. When applying to Scotland's population, this new evaluation equation of 80 to 120 new cases per million per year is derived by:

$80\ x\ 5.4 = 432\ cases$

$120\ x\ 5.4 = 648\ cases$

The first equation uses 80 cases per million and multiplies by the population unit of 5.4 to capture the minimal SIU new cases in Scotland. Needless to say, this is a conservative estimate as there will be other unknown cases, as NHS Scotland's authorities are not reporting fully to show paralysis and walking spinal injuries. The second equation uses 120 cases per million and multiples again by population unit of 5.4 to give an upper scale of SIU cases. Therefore, the SIU number plus additional 10% gap with the view of the likelihood of a further 100 cases unrecorded due to not requiring SIU support and have walking ability. This new evaluation has been supported by a NHS spinal consultant, who has given feedback that the updated assessment gives a fair insight into the SI community in Scotland as a whole (Baliga, 2023; Craig, 2021, email). For the purpose of this research, this proposed new evaluation of SI cases in Scotland will be referred to as Fowler SI Case Evaluation and will be used with the Frankel

Scale to identify the feasible walking spinal sufferers from the identified SI community.

When comparing the two evaluation methods (Barbeau et al and Frankel Scale vs. Fowler SI Case Evaluation and Frankel Scale), it is interesting to view the difference between the identified community figures. When using the evaluation of Barbeau et al and the Frankel Scale, the following estimation of the WSC community figures are based on the higher percentage SCI case number range:

- Annually, up to 89 new additional walking spinal sufferers in Scotland
- Annually, up to 1,099 new additional walking spinal sufferers in the UK.

However, when explored further when applying Fowler SI Case Evaluation (80 to 120 new cases per million) and Frankel Scale for regaining walking ability, the numbers are higher, and more aligned to the SIU reports, though this research also recognised WSC numbers are not fully documented by NHS and an exact number cannot be gained:

- Annually, up to 213 new additional walking spinal suffers in Scotland
- Annually, up to 2,637 new additional walking spinal suffers in the UK.

Based on this evaluation, as opposed to estimating from UK figures as given by spinal charities, it is proposed the WSC in Scotland is 2.5 times, or 250%, higher than predicted. Although the above now enables an understanding of the number of individuals who have sustained a SCI, it does not give a sense of the magnitude of those that suffer a SI each year.

For the purpose of this research, and until further data and more accurate insight and intelligence can be gathered, this research will use Fowler SI Case Evaluation and Frankel Scale, to closely reflect SIU findings, bearing in mind further cases beyond this report.

As demonstrated and discussed above, Scotland’s WSC community, and even SCI community, would appear to be far greater than what recent research reveals. Aspire (2019, online) stated that 50,000 people were affected in the UK as a result of SCI trauma, equating to 0.07% of the UK population, and in addition, NHS England states there are 1.2million wheelchair users in England. There can be multiple reasons for the need for wheelchair use, but it does raise the question on reliable figures to consider in relation to WSC. Furthermore, the

CEO of Spinal Injuries Association also supports Aspire's statement that a further 2,500 people sustain a SCI in the UK each year (Hartley OBE, 2020, email). Should the above percentage of 0.07% be applied to Scotland, the Scottish SCI community can be estimated to be over 4,000 of the 50,000 UK's population, though this is entirely conjecture as there is no solid basis for this. While this is mentioned as guidance, it still remains restrictive as the number of SI community in Scotland and UK remains unclear. Instead, to date, this research has been limited to establishing a new method to estimate new SI cases, as detailed above. Furthermore, the SIA website (2021) states they have a membership of more than 11,000, a large number in Scotland, and therefore raises the question whether any research has been successful in identifying the SI community. However, understanding the membership of just one of the Scotland-based spinal charities highlights the work to represent and support their community, as well as campaigning on members' behalf to the Scottish and UK Governments.

To verify literature and industry information regarding statistics, a lead clinician at Glasgow SIU (MacLean, 2019, email) was contacted for verification and evaluation purposes surrounding data, and stated there is a proportion of the WSC neglected in literature, and that no concise data has been gathered on the number of those regaining walking abilities. Reasoning for this gap in data, and efforts to collect and collate, are unknown, as the community is large in itself and still has a requirement for medical support, whether short or longer term.

For the purpose of this paper, the proposed approximate figures are used as giving a basis for the size of WSC in Scotland and UK as a whole, and bringing attention, clarity, facts and awareness to this overlooked and yet growing community.

2.2.3 WSC: identity, ableism & invisibility

According to the UK Government's Family Resources Survey 2020/2021 (2022, online), there are over 14.6million residents who currently live with a long-term illness or disability, of which approximately 1million live in Scotland (University of St Andrews, 2019, online). But the word 'disabled' itself can be ambiguous and emotive, and this is reflected by people who do not deem themselves to have a disability, but instead live with a condition (Dunn & Andrews, 2015; Ward, 2015). It is expected that figures gained through central reports will not include those who have made the conscious decision not to label their condition as a disability, and therefore it remain unreported.

Under the Equality Act 2010, someone is considered as having a disability if they have a physical or mental impairment that has a 'substantial' and 'long-term' negative effect on their ability to do normal daily activities (UK Government, 2022, online). Further legislation already existing to protect disability includes the Disability Discrimination Act 1995. This Act was amended in 2005, incorporating Disability Equality Duty (DED), giving further protection to those with disabilities to empower equality, as well as placing further pro-active-approached demands on public sector bodies with regards to employees, consumers, and visitors. Although there's been progress, there is still work to be done to make this mainstream across public sector (Pearson et al, 2011).

A framework for disability identity has been created by Putnam (2005). This illustrates six domains, each of which have sub-domains listed underneath. Although this was created in relation to political disability identity, the first five can be applied to this research, with the last (political) not being relevant:

- Self-worth
- Pride
- Discrimination
- Common cause
- Policy alternatives
- Engagement in political action.

Putnam states: *"...disability, thus a minority characteristic, may be thought of as substantively different than gender, race, ethnicity, or sexual orientation"* (2005, p195). However, this approach can perhaps be perceived as negative grouping (Dattilo & Smith, 1990). Disability labelling has been identified as potentially negative when grouping people into categories, or also known as identity-first language (eg, 'wheel-chair bound teenagers'), rather than using person-first terminology, (eg, 'teenagers who use wheelchairs'). Furthermore, Kattari et al (2018) have highlighted in their study the varying experiences of ableism by those with invisible disabilities, while warning society needs to more inclusive, and be mindful not all disabilities are visible, to avoid further harm to wellbeing. Language and terminology play a significant part in a person's self-confidence, belief, and general wellbeing, with first-person language highly encouraged as mindful communication to address any negative attitudes towards disability, and instead promote discussion and understanding (Dunn & Andrews, 2015; Dattilo & Smith, 1990). Though what is not highlighted within these studies is the impact language and ability restrictions have on a person's perception of, and impact to, self-worth and life satisfaction (Lieberman, 2022), which ultimately sits within their behavioural choices and will fluctuate accordingly based on ability to successful undertake tasks, activities, roles (Putnam, 2005).

There are many conditions that are not apparent to the observer, which in turn can cause confusion as to what is a disability, with more obvious examples being chronic pain, depression, other mental health conditions, post-traumatic stress disorder, seizure disorders, migraine or chronic fatigue (David, 2014; Davis, 2005), as well as specific spinal conditions such as, *s*pina bifida occulta, slipped disc, chronic back pain, fibromyalgia , spinal stenosis, kythosis, scoliosis, cauda equina and spondylitis. There are also many other conditions that can prove difficult for the non-affected person to understand and empathise with a person with such condition(s), and it is considered that similar barriers to support (Midtgaard et al, 2015) are experienced as with those with hearing loss, cancer (during and post stages) (Bennet et al, 2007), spinal deterioration, poor mental health – all of which may appear 'normal' to the bystander but for those with the condition, the disability is impactful (Chemtod et al, 2018). Varying degrees of ableism, discrimination and rejection are experienced by those with an invisible disability (Ringland et al, 2019; Dunn & Andrews, 2015), with social stigma being an issue, perhaps not as frequently as those with visible disabilities, yet are exposed due to attitudes of others (Kattari et al, 2018). The ability to function as a well-abled person is hindered by the invisible aspect of the health condition, and can lead to unhelpful and unhealthy requirements by society to prove the disability (Davis, 2005). This perhaps does not go far enough as our lives are impacted not only by the community we live in, but by cultural attitudes, governmental reign, policies, industries of work as well as workplace practices (Prince, 2017). Kattari et al (2018) support the belief in highlighting from their study that participants believed their bodies were being policed by society and ridiculed as the perception from others included not seeing any disability and therefore do not see the need for assistance. It can also be argued psychosocial disabilities are made more complicated due to the invisible nature of no outwardly medical condition (Ringland et al, 2019). When someone who has a spinal injury / condition but has a level of walking ability, the true extent of their ability and impact to life is often hidden and misunderstood, leading to other health impacts, including mental health (Lawrason et al, 2022; Buckinghamshire Healthcare NHS Trust, 2022, online; SIA, 2021, online; Jannings & Pryor, 2012).

While the literature reviewed to date reveals substantial research with regards to spinal cord injury (SCI), there is a lack of research on the WSC. However, when examining invisible disability conditions, there are conditions that may first be considered visible, but this is not always the case. Before discussing further, it is important to clearly define what disability and invisible disability is, for the purpose of clarity within this research. Prince (2017) highlights what he states as the perspective from an international standpoint, whereby disability is the relationship and essentially limitation of varying factors, including body capability and functionality, ability to carry out activities (Alleva & Tylka, 2020) as well as social participation. Those with invisible disabilities may appear as ‘normal’ as their condition is hidden, in that there is no outward sign of limitation, which in itself poses challenging in understanding the health condition, and allowing equality and social inclusion (Davis, 2005). Furthermore, it is important to again highlight that spinal injury is different from spinal cord injury, whereby the former condition is not overly obvious as in the event of any paralysis, it is unlikely to have any permanence. Thus, physical effects of sustaining a spinal injury are easier to understand by others where this is a visible element (Lieberman, 2022), though this may not always be the case, also where there is negative impact to mental health and wellbeing. Quality of life is an overall measurement of wellbeing, with life satisfaction being a part of quality of life, both of which are pivotal in an individual’s subjective experience (Lieberman, 2022), to which independence can also be correlated to quality of life (Moller et al, 2021), regardless of visible or invisible disability.

An example of invisible disability challenges and impact on physical and psychological wellbeing is someone with cancer. Not all who have cancer outwardly exhibit signs of their condition, and when it is not obvious, misunderstanding regarding behaviours, emotions and needs can occur, as well as forms of ableism, discrimination, and rejection (Kattari et al, 2018). The literature review surrounding the psychological impacts of having cancer helps to better understand the area of WSC, to which there is limited research in this area, yet psychological challenges are comparable to cancer patients. Example being the sudden change to life and outlook (when a patient is told they have cancer, when someone sustains an injury that results in life-changing spinal condition), motivation and behaviours surrounding activities, and impact to general wellbeing. Studies have already been undertaken regarding quality of life during and post cancer treatment, the need to introduce physical activity to improve mental health, rehabilitation, and support (Bennett et al, 2007). As with other conditions, it can be said no two journeys are the same, and a person-centred approach is required (Vries et al, 2016), whereby also mental health impact is understood and supported (Mental Health Foundation Scotland, 2018, online). Emotions and thoughts are heightened significantly during cancer diagnosis and treatment, with one in three people with cancer experiencing mental health challenges before, during or after treatment, with 49% of those interviewed stating they have no support of advice about managing their mental health, and 42% asking for better access to information (Mental Health Foundation, 2018). As with spinal conditions, cancer is not just physical but also has a significant psychological impact, and there’s a need for a stable support system. Furthermore, exercise during cancer treatment has been the focus of research, whereby evidence strongly suggests improvement to fatigue, physical functioning, cardio fitness as well as quality of life (Rock at al, 2012; De Backer et al, 2008). Low-intensity intervention has also been shown promote smaller behavioural changes that can be maintained beyond an intervention program (Grimmett et al, 2019), thus achieving long-term behavioural change.

De Backer et al (2008) have researched longer-term benefits of physical rehabilitation programmes, showing what are now known and widely accepted factors such a cardio improvement, quality of life and physical conditioning in the short and longer term to increase motivation for self-led activities. This has been taken further have taken this further by Midtgaard et al (2015) who have examined the benefits to longer-term programmes, approaches / attitudes, and overcoming perceived stigma. The study focussed on exercise training and preferences as part of cancer rehabilitation, and is relevant to the WSC research as there are parallels with regards to perception of ability, social interaction and the value to undertaking said activities, playing a part in regaining social inclusion through physical activity (Ciammaichella et al, 2022; Davis, 2005). This understanding has been applied by cancer charities across the UK, including Macmillan who invested £6million in its MoveMore initiative, which ran 2012-2018, NHS' 5kYourWay, which was introduced across the UK, and CLAN Cancer Services' GetActive.

Mental health is an important factor to be considered, to which may also prove invisible to others, and perhaps can be considered as a key influencer in recovery and the life ahead, as indicated by the Mental Health Foundation (2018). One in four people in England experience poor mental health each year, and within a lifetime, one in five will have suicidal thoughts and one in 14 self-harm (Mind, 2020, online), whilst Scotland is reported to have a higher rate of poor mental health, with one in three people affected each year (Scottish Government, 2022, online). In relation to spinal cord injuries, adults who have experienced a traumatic injuring resulting in living with SCI are said to have a near-80% increased risk of developing psychological conditions, compared to those who have not experienced such trauma (Petersen, Meade & Mahmoudi, 2022), which does raise the question as to what support is available as part of recovery, including discharge back into the community (Jannings & Pryor, 2012). Their studies also suggest chronic pain may have an equally large, negative effect on mental health.

Pain is another factor that can be linked to identity and ableism, as well as proving disabling for an individual (Muller et al, 2022). Pain is an indicator to the current state of the body, in that immediate and short term (acute) pain advises something has happened, that there is a need for treatment or action, and to move away from what is harming the body. Chronic (ongoing) pain can prove weary, even debilitating and impact quality of life (Collier, 2018), and can also prove impact ableism and wellbeing. Treating chronic pain can prove challenging, as pain is subjective (LaChapelle & Lavoie, 2014), with NHS and medical bodies using various pain scales, including but not limited to commonly used numeric pain rating 1-10 (Bakshi, Rathod & Salunkhe, 2021; Hawker et al, 2010); Wong-Baker pain face scale; and the visual analog scale which uses intensity rating (Mometrix, 2022, online; Hawker et al, 2010) to ascertain perceived levels of pain endured, covering a variety of measurement areas, including pain quantity, pain interference, physical functioning, emotional functioning, quality of life and overall rating (Faculty of Pain Medicine of the Royal College of Anaesthetists & The British Pain Society, 2019). Chronic pain is a distressing and complex problem that has a profound effect on an individual (Mills, Nicolson & Smith, 2019) and is common within the spinal community (Muller et al, 2022; BackCare, 2019; Widerstrom-Noga et al, 2016; Boldt et al, 2014), and continues to be challenging to treat, and as pain develops, emotional wellbeing can be impacted, leading to the likes of anxiety, which then reinforces the pain signals as the focus remains directed on pain (Collier, 2018).

Interestingly, a study evaluating recreational physical activity levels by those with chronic lower back pain was undertaken, using a combination of behavioural-change based counselling and the TMM (Prochaska, DiClemente & Norcross, 1992), with the purpose of matching intervention with the individual's readiness to change (Ben-Ami et al, 2017). This particular study highlighted the effectiveness of targeting the challenges surround physical activity and chronic pain, addressing self-efficacy and avoidance, and found the likelihood of longer-term disability to be reduced. This is discussed further in Chapter 2.4.1.1.

With regards to perception of pain, tracking or using a diary to monitor pain levels and patterns can prove effective in better managing and assessing levels of pain, as greater awareness of triggers is gained and as such, decisions can be made to avoid these (Charoenpol et al, 2019). Though for some, such focus may heighten the pain, rather than being distracted which has shown to give lower pain levels (Chayadi and McConnell, 2019). Both pain management and diary entry are explored later in this chapter, section 2.4.4.

Invisible disability such as the above discussed cancer, mental health and walking spinal conditions means those affected share the experience of their condition or medical needs not being fully understood or supported (BackUp, 2020; Ringland et al, 2019). There is a wide range of emotions which will be experienced by those being diagnosed with cancer and other invisible disabilities, including fear, anxiety, frustration, isolation, loss of self-esteem and independence (Moller et al, 2021; Williams et al, 2019). In addition, the parallels of encouragement to participate and enjoy physical activities, to have social interaction and improve general wellbeing continue to be documented.

The direct link between enduring an invisible disability as a result of a walking spinal condition, the behaviours, motivations and change surrounding physical activity, and the access to support, including talking support, offers deeper understanding of what appears to be an overlooked niche spinal community.

Literature review – PART TWO

2.3 Mentoring and Coaching – talking support

Whilst counselling and psychotherapy services are essential offerings to the WSC and SCI communities who require such help (Disability Plus, 2022; Spinal Injuries Association, 2022, online; Princess Royal Spinal Cord Injuries Centre, 2022, online), over the last 10 years, coaching and mentoring have been growing in popularity and availability as further forms of talking support (Hayden, 2021; Al Hilali et al, 2020; Sweet et al, 2018). However, coaching and mentoring are not readily brought together in papers to understand any variations and benefits, but kept separate (Cadematori et al, 2021; Gassaway et al, 2018; Skeels et al, 2017).

The positive outcome for those receiving include being empowered to make change, decisions and do what is right for themselves (Houlihan et al, 2016; Cornett et al, 2009), whilst being able to share and having a trusted sounding board (Sweet et al, 2021). As such, spinal charities have been investing in such offering, including BackUp who undertook their own research surrounding mentoring, and then launched their Mentoring Service in 2015 (Ward, 2015), to which demand continues to grow, and new mentors are trained every year to help meet the higher numbers, with 120 hours undertaken by mentor trainers to deliver training and guidance to mentors 2020/2021 (BackUp, 2021, online). In the same time frame, the charity's Mentoring Service saw significant investment of £212,323 to deliver the range of support to mentees.

Literature review to date highlights greater focus on SCI peer mentoring as opposed to coaching as talking therapy options, however Skeels et al (2017) and Cadematori et al (2021) have given focus to the latter. It should be noted that to date, limited literature examine the WSC, including impact from mentoring and coaching (Lawrason et al, 2022; Sinovas-Alonso et al, 2021; Jannings & Pryor, 2012; Stuart et al, 2009; Van Hedel, 2008), though there are many studies in relation to spinal cord injured patients and cohorts.

It is believed this research study will contribute knowledge to this field, giving greater understanding of the impact coaching and mentoring has on the WSC. This sub chapter discusses mentoring and coaching, and examines the correlation to the WSC, developing the academic understanding of behaviours, motivations and behavioural change, and the theory to better assist in promoting engagement in physical activity.

Firstly, for clarification for this research, it is important to highlight there is a mixed use of terminology surrounding mentoring and coaching (Garvey & Stokes, 2021), with another term of 'motivational interviewing' also used, with the latter being highlighted as a technique of coaching (Iles et al, 2011). The definition of coaching has evolved over the last three decades, giving varying understanding to the context (Passmore et al, 2018), and a definition previously proving challenging, with mentoring and coaching being seen as variables of each other (Ives, 2008). Furthermore, the meanings associated with coaching and mentoring are said to be evolving, with hybrid versions emerging (Garvey & Stokes, 2021). However, for the purposes of this research, Coaching and Mentoring are considered separate 'talking therapies' and defined as:

- Mentoring: "the practice of helping and advising a less experienced person over a period of time." (Oxford Dictionary, 2021, online)
- Coaching: "a facilitated, dialogic and reflective learning process that aims to grow the individuals (or teams) awareness, responsibility and choice (thinking and behavioural). ... Put simply professional coaching is the best

> way to support an individual, team, organisation and society to reach its purpose and potential.” (Association for Coaching, 2021, online)

Both coaching and mentoring can be related to PERMA model, a positive psychology theory as developed by Seligman (1998), and who has continued to evolve the idealism. PERMA focuses on five main areas:

- Positive emotions
- Engagement
- Positive relationships
- Meaning
- Accomplishment

Behaviours, attitudes, and motivation all were highlighted and can be considered attributes fitting of the PERMA theory, where all impact the five areas:

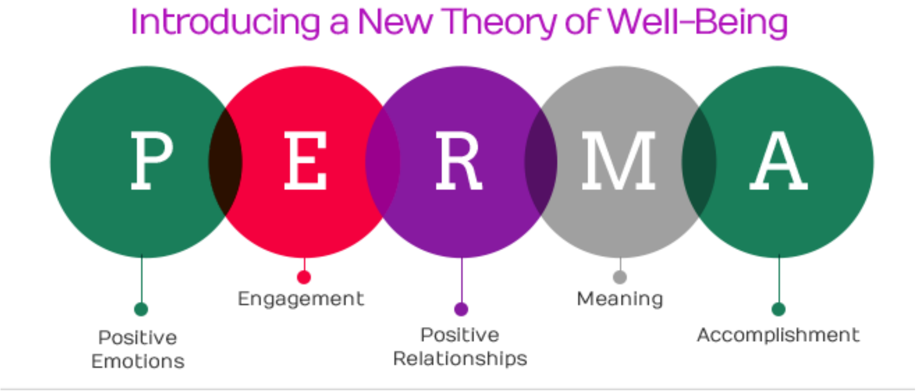


Figure 3: PERMA model (Seligman, 1998)

The PERMA theory is an updated theory of wellbeing, where positive psychology is used to not just improve personal happiness but the ability to flourish in life (Seligman, 1998), and has relevant to adapting to life following traumatic injury and change. Quality of life, life satisfaction, and mental health (Lieberman, 2022) are frequently discussed across research within SCI and mentoring / coaching support (Cadematori et al, 2021; Rethorn & Pettitt, 2019; Rocchi et al, 2018; Gassaway et al, 2018; Hoffman et al, 2018; Gassaway et al, 2016; Iles et al, 2011), and this research paves the path to consider how general wellbeing is impacted by the spinal injury, recovery and life thereafter, associated behaviours, and what are barriers to flourishing (West & Michie, 2020; Beauchamp et al, 2016). Furthermore, Madeson (2017) highlights the strength of the theory, with Forgeard et al (2011) giving weight for using PERMA as a predictor to psychological distress. Psychological needs are readily monitored within coaching and mentoring in relation to SCI community, examples being experiences (Chemtob et al, 2018), offer of emotional support (Gassaway et al, 2018) and coping mechanisms (Rocchi et al, 2018), however research to date has shown it would seem they psychological needs of the WSC may be overlooked or not understood.

Regardless as to which route to peer talking support is offered, what does become clear through this study is that recovery is aided by the ability or opportunity to talk to someone who directly understands a personal situation, and self-efficacy is a common theme (Divanoglou & Georgiou, 2016; Gassaway et al, 2016; Ljungberg et al, 2011; Bennett et al, 2007). Peer support helps to reduce feelings of overwhelm, isolation, and improves understanding of their situation whilst learning from someone they see as an example of overcoming similar obstacles, thus empowering the patient (Gassaway et al, 2016).

The last 10 years has seen a growth in number of coaching studies in healthcare literature, and highlight a purpose and benefit of coaching, in particular health and / or wellness coaching, is to help reduce cost burdens as a result of behavioural changes (Cadematori et al, 2021). Moreover, having the patient-centred approach also gives greater patient satisfaction (de Vries et al, 2015) and improvements in self-efficacy, quality of life and a decline in health worries and depression (Cadematori et al, 2021; Rethorn & Pettitt, 2019). Such coaching is based on TMM model, originally developed by Prochaska and DiClemente in the 1970s and has evolved since. The basis of this model is illustrated below, giving five key stages (Prochaska & DiClemente, 1986), to which a sixth stage of Terminal was later added.

Figure 4: Stages of change: Transtheoretical Model (Prochaska & Diclemente, 1986), drawn for illustrative purposes

Prochaska & DiClemente (1986) examined the intentions of changing addictive behaviour, with and without treatment, in relation to TMM, and noting that some people will go through stages several times, sometimes referred as experiencing relapse, before successfully completing the process change (Velicer et al, 1998; DiClemente, Prochaska & Gibertini, 1985). TMM is discussed in greater detail in Chapter 2.4, however, the above is to highlight the relation between coaching and TMM, though indeed, mentoring can also be applied to this model of change.

2.3.1 Mentoring

Although to date, initial research shows mentoring for the WSC as an area that appears to be under-represented in research, there is a large volume around mentoring and the impact to those with SCI (those with a level of paralysis) as part of their recovery (Chemtob et al, 2018; Gassaway et al, 2018; Beauchamp et al, 2016; Ljunberg et al, 2011). Much research focuses on the time in hospital and first home, where newly injured patients are faced with adapting to the physical changes, as well as the psychological obstacles of moving from hospital to home (Divanoglou & Georgiou, 2016).

Ljungberg et al (2011) examined the use of peer mentoring, where relevant life experiences are shared as a way forward (Gassaway et al, 2018), for those with spinal cord injury, with their study highlighting the importance of offering this in rehabilitation phase, and ultimately promote health and social re-integration (Gutpa et al, 2019; Stephens et al, 2012). This is supported through research whereby the mentors were praised by mentees for giving verbal encouragement, helping on both daily and social activities (Chemtob et al, 2018). Although O'Halloran et al (2014) further support this, and their study demonstrates motivational interviewing leads to modest improvements in physical activity, they call for strong trials to be undertaken before any further recommendation. Yet, just three years earlier, Iles et al (2011) clearly stated telephone coaching can increase activity levels, this time for those with non-chronic low back pain, and so already had paved the way in encouraging greater research in this area. The feasibility of a nationwide volunteering peer-mentoring program for SCI in-patients was examined, and to which it was reported such a mentoring approach gives significant improvements in quality of live, both physically and psychologically (Hoffmann et al, 2019).

Such understanding and the desire to help improve a patient's quality of life is mirrored by Shaw et al (2018), who highlight a peer mentor has gone through something similar so has that first-hand experience of understanding and can be a positive role model (Skeels et al, 2017). They go on to highlight the work of Bass & Riggio (2006), stating that the mentors that show qualities of transformational leadership, to which incorporates knowledge, experience, and coaching, make more effective support networks and role models. Effective leadership is considered akin to effective mentoring, with the following four dimensions having their part to play (Beauchamp et al, 2016):

Inspirational motivation	Promote values or vision through enthusiasm
Intellectual stimulation	Encourage creativeness, seek solutions (look beyond obstacles)
Idealized influence	Act as a role model to behaviour can be mirrored
Individualized consideration	Each person is unique and should be empowered

Table 2: summary of four dimensions of effective leadership (Beauchamp et al, 2016)

Interestingly, mentees were more positively impacted by mentors showing all four of the transformational leadership qualities, and reported outcomes including improved motivation, self-belief, wellbeing, and social participation (Beauchamp et al, 2016). Though it has been argued the willingness to accept the injury and determination to go on are coping strategies directly impacted by the number of years since the said accident (Rocchi et al, 2018). However, again this focus is on having a spinal cord injury as opposed to having walking ability, and as such only part of the walking spinal community.

With regards to self-efficacy, this is in relation to the self-belief a person has in their ability to complete a task or accomplish a behaviour, and is examined by Bennet et al (2007) in relation to long-term cancer patients. Interestingly, self-efficacy is stated as being a predictor of outcome (Divanoglou & Georgiou, 2016; Emmons & Rollnick, 2001), as unless the belief is there on the task or goal, as well as giving the desired outcome, there is little to incentivise or motivation to carry out what has been identified as needing to be done (West & Michie, 2020; Michie & West, 2014). Self-efficacy and the impact to motivation will be discussed further as part of Chapter 2.4.

Peer mentorship has strong support as a value-add to rehabilitation as mentees are given verbal encouragement, helping to overcome self-limiting beliefs so they can complete the tasks successfully (Gassaway et al, 2018; Chemtob et al, 2018). Referring back to the PERMA model (Seligman, 1998), mentorship does encourage positive emotions, engagement, positive relationships, meaning and accomplishments, though within the parameters of the mentorship, such as the depth and duration.

2.3.2 Coaching

Skeels et al (2017) state the nature of having a SCI, a complex condition, in turn results in significant adjustments being required for not just the patient, but also for family and their wider environment. The research focuses on health coaching, where behaviour and self-awareness changes are encouraged by the patient so they can better manage their condition (Cadematori et al, 2021). The nature of having an invisible spinal injury or condition makes the situation challenging, as previously highlighted in Chapter 2.2, and supported by charities and community groups SIA (2022, online), SIS (2022, online), BackCare (2022, online) and BackStrong (2022, online). Furthermore, emotional disorders should not be overlooked in terms of support required following a traumatic incident, and should be given at any level or stage (Koenen et al, 2017). Coaching has been stated as having a powerful role in recovery (Skeels et al, 2017) and engaging with support after an injury has long-lasting effects (Beauchamp et al, 2016).

As previously stated at the beginning of this chapter, coaching is *"a facilitated, dialogic and reflective learning process that aims to grow the individuals (or teams) awareness, responsibility and choice (thinking and behavioural). ... Put simply professional coaching is the best way to support an individual, team, organisation and society to reach its purpose and potential"* (Association for Coaching, 2021, online). Thus, regardless of type of coaching, the underpinning is one of dialogue, support, learning and guidance, and has a number of contributing factors or attributes, namely Role Model, Supporter, and Advisor as shown in the below diagram (Skeels, et al, 2017).

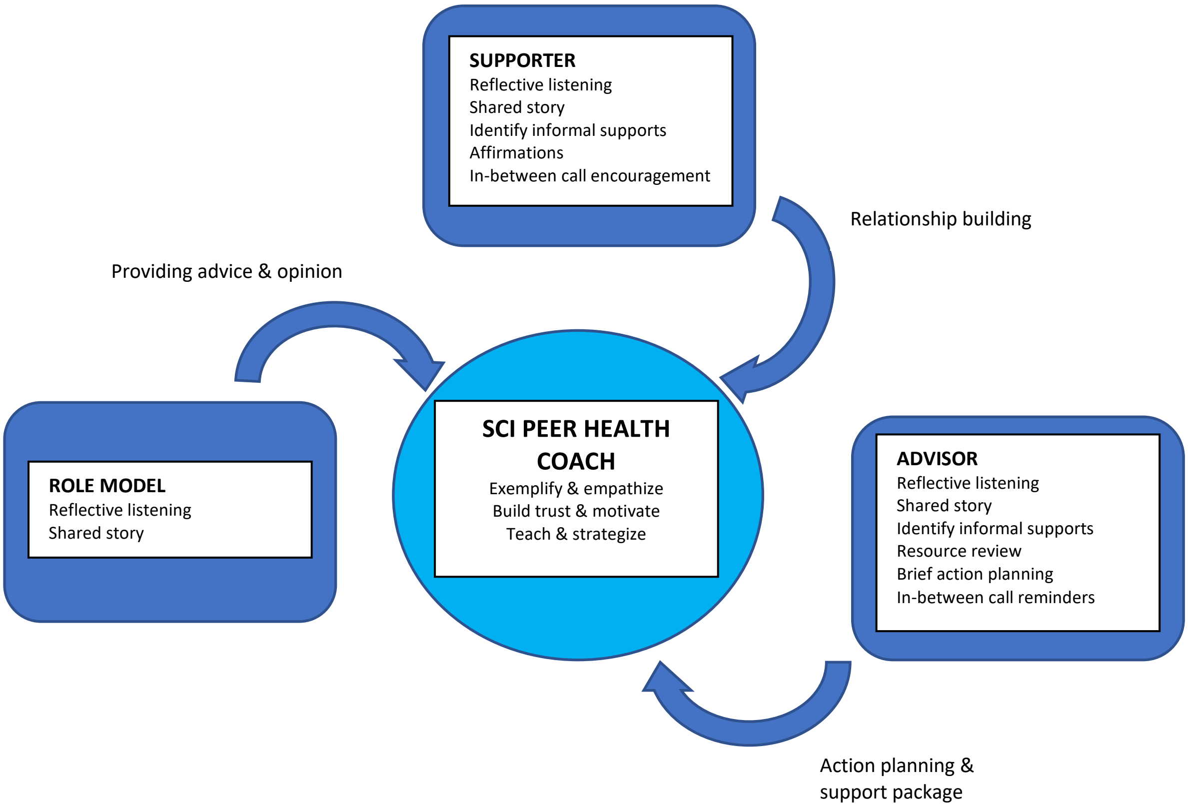


Figure 5: My Care My Call (MCMC) Peer Health Coach model (Skeels et al, 2017)

This model can be expanded to state the role a coach plays in general, as the different factors of role model, advisor and supporter are relevant not just to health coaching, but all forms of coaching and mentoring, and brings impact, contribution, mastery and excellence (Association of Coaching, 2022, online).

However, terminology such as health coaching and peer coaching are more commonly found in literature, and coaching is seen to be also integrated into physiotherapist and physical therapists practice (Zachary et al, 2019).

The timing of coaching in the recovery duration may give weight to what type of coaching is offered (O’Shea & Smedema, 2014), especially through professional channels. For instance, health coaching focuses on changing behaviours around health itself, thus promoting general wellbeing, including sleep, diet, stress levels, physical activity (Zachary et al, 2019), which in turn reduces healthcare costs as even chronic (long term) conditions will be better managed (Cadematori et al, 2020). Yet it is proposed through this research that coaching offered or being available after being discharged by medical teams may see other forms of coaching become relevant and invaluable, including life coaching, mental health, wellbeing, transformation, mindset, all of which will help the coachee, within the niche they wish to focus on. This has been further supported by a study that used motivational coaching intervention to promote physical activity with those with SCI and reviewed secondary benefits from such engagement (Nooijen et al, 2017).

Interestingly, especially during recent times of the Covid pandemic, talking support had to move away from in-person, instead being offered via telephone, or video conferencing, such as Zoom and Microsoft Teams as lockdown and socialising restrictions meant in-person meetings were not viable (Institute for Government, 2022, online) (see Appendix 1). As yet, there is little research to show how pre-Covid talking support changed in effectiveness, though it is suggested that the combination of technology and enforced restrictions meant people of all ages throughout the world had to adjust to communicating with each other, when in-person was not possible (Berninger-Scharer, 2022; Wiederhold, 2020). Iles et al (2011) have already highlighted the effectiveness of telephone coaching, thus in-person was not a part of the talking support time and the geographical boundaries were removed. As such, there was significant increase in levels of self-report activity as well as improvements to the patient’s recovery expectations, as well as measurable impact made to lives as a result of telephone coaching (Skeels et al, 2017; Iles et al, 2011). Thus, telephone coaching was already known as effective access to talking support during the recovery time, but what is lacking in the literature to date is the continuation of recovery post medical discharge, and how to bridge the gap between having available support that has easy access to when being back at home, no longer under supervision yet still having to adapt to life as it is now, which may be very different prior to the spinal injury (Jannings & Pryor, 2012). In addition to telephone coaching, coaching via online platform, or also known as video coaching, (eg, Zoom, Teams, Skype) offers a further option for effective remote communication (Freytag et al, 2022), and without the need for any party to travel. Uptake has grown significantly across age groups, helped by Covid pandemic as online video platforms offered a way to connect with loved ones during times of isolation and restrictions over a two-year period, however, during the pandemic years, 'Zoom fatigue' was common, which also triggered anxiety and tiredness, normally in relation to day job (Wiederhold, 2020). However, in relation to coaching, an individual has a choice as to whether to engage in coaching via such a platform, and therefore it is an agreed means to the desired support. Video-coaching is similar to face-to-face sessions as the participants can see one another, and helps to facilitate higher level of engagement, accountability and the feeling of support, whilst also reducing the risk of misunderstandings compared to emails and other written communication (Alley et al, 2014). Furthermore, video coaching offers leadership, motivation, and an authoritative voice (reassurance), to which the ideology of the 'watchful eye' is common (Bennett, 2021).

Gap in overall support is a common theme through the process of literature review, and it has highlighted the need to look at what care is and perhaps should be readily accessible to ensure not only improvement to physicality, but also general wellbeing. That said, mentoring and coaching are recognised support systems of those who have suffered a spinal injury, and aid recovery in terms of mental health and behavioural aspects (Sweet et al, 2021; Divanoglou & Georgiou, 2017; Beauchamp et al, 2016;), and this correlation is examined in Chapter 2.4.

2.4 WSC: behavioural change and motivation

Behavioural psychology is a theory suggesting the environment shapes human behaviour (Rivier University, 2022, online; Marteau, 2018), and examines the connection between mind and behaviour. Every person is impacted by behavioural change efforts, whether this be self-triggered for a desired outcome, or as a result of influence from people, situations, as well as companies including marketing campaigns to entice purchase (Wendel, 2020). Decisions may not always carefully thought out, as at times the brain gives what feels an automatic response, or Mental Reflex Action (Kamble, 2021) and can be considered in having two parts – one side with deliberate, conscious thinking to which is slower, focused and takes more effort in processing, and the other being the responsive, fast, subconsciously thinking which uses past experiences, perceptions and self-rules to evaluate and prompt action (Wendel, 2020), to which the mix of both conscious and subconscious processes work together to meet an individual's needs at that time, and facilitate the action (Baumeister & Bargh, 2014). For behavioural change to occur, to which is "the modification or transformation of behaviour" (Lewis et al, 2021, p158), the environment around an individual should be addressed and re-designed (Marteau, 2018), whilst ensuring capability, opportunity and motivation are evaluated (Michie, Van Stralen & West, 2011). Those who are motivated by their own needs and desires are likely to maintain their new behaviour (Samdal et al, 2017).

As this research examines the change in uptake of exercise and sports participation following sustaining a spinal injury, behavioural change is key to this understanding of the WSC's engagement, and as supported by Nooijen et al (2017), who led a behavioural intervention study giving focus on promoting physical activity with subacute spinal cord injury individuals (to which, wheelchair bound). Although behavioural intervention is outwith the scope of this study, the research is interesting in highlighting the promotion of physical activity. Consumer psychology also has its place within the area of behavioural change, as it also examines human behaviour, but with regards to buying / consuming patterns, preferences and attitudes in relation to products and services, and aids understanding to behaviour, attitudes, motivation and beliefs, as all have a direct impact on choices, decisions (Hayden, 2018), as well as the effect on individual responses, power of perception, and impact on behaviour. It is also important to consider access to professional support, including rehabilitation, following SCI trauma (Simpson et al, 2020; Gupta et al, 2019; Gomara-Toldra, Sliwinksi & Dijkers, 2014), and, as highlighted by Williams et al

(2014), consider the barriers as well as enablers to physical activity, which in turn impacts mood, motivation as well as giving other health benefits (Zimmermann, 2017).

UK-based spinal support charity Back-Up undertook research (Ward, 2015) to better understand the WSC and what was perceived as a changing demographic due to the number of people suffering spinal injuries but who were able to walk after the trauma. The research findings highlighted those who did not suffer permanent neurological damage, and therefore able to walk, suffered from varying degrees of guilt and as such, do not feel comfortable engaging with support services, and their limitations, which may not be obvious to others, prove challenging both physically and psychologically, impacting how they lived their lives (Jeawon et al, 2023; Lawrason et al, 2022; Sweet et al, 2021).

Bloom's Taxonomy of Learning has evolved over the years, and includes three domains of cognitive, affective and psychomotor (Hoque, 2016) (see Figure 6). Bloom et al (1956) first published a model for Cognitive learning to which was revised in 2001 by Anderson & Krathwohl, and is shown on the below figure. The second hierarchy of learning, Affective domains, was published in 1964 (Krathwohl, Bloom & Masia), with the third domain, Psychomotor (Dave & Armstrong, 1970) completing what has become known as Bloom's Taxology. However, criticism has been given to the approach, partly due to the complexity of verbs, process-orientation and not seeking depth of understanding (Bereiter and Scardamalia, 2005). Although there is a further taxonomy, Bloom's Digital Taxonomy (Muhlise Cosgun, 2022; Amin & Mirza, 2020) and focuses on technology and digital tools to facilitate e-learning, it is not relevant for this research, and as such, not discussed.

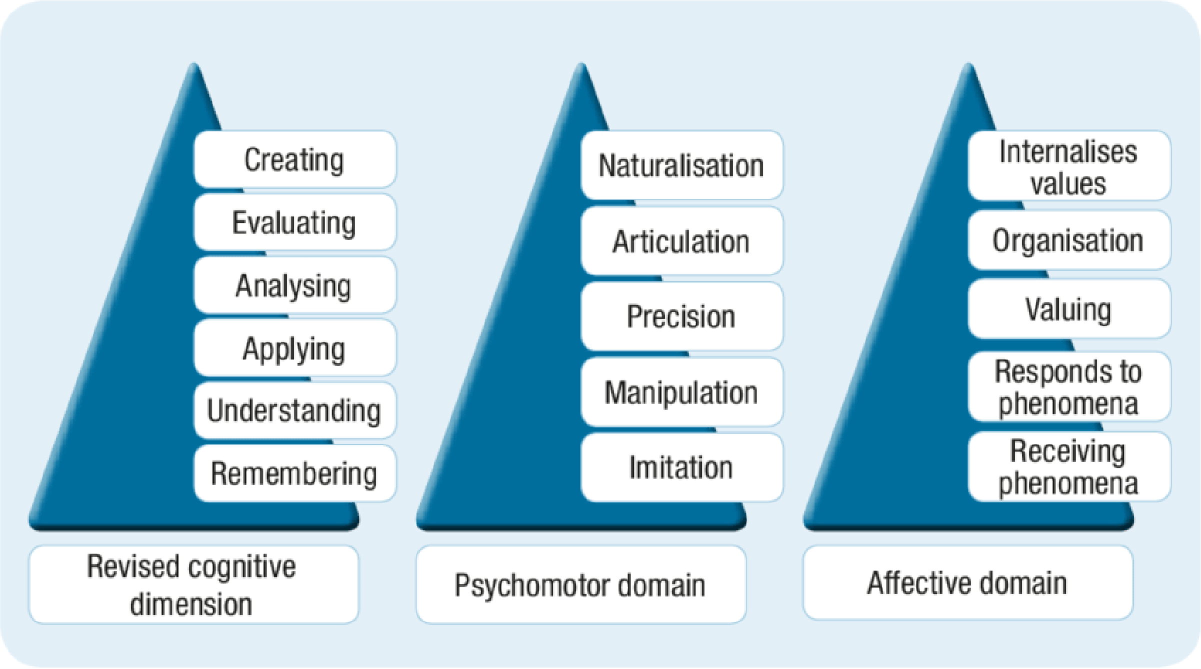


Figure 6: Bloom's Taxology of Domains – cognitive, psychomotor, and affective (CEDEFOP, 2017, p34).

Bloom's Taxonomy of the Affective domain (2001) (Figure 7) focuses on the emotional-based traits and reactions, and although the focus of the model is about learning, the model is relevant in its application to better understand the WSC with regards to changing behaviour due to variations in emotions, attitudes, and feelings. Each may be newly learned or occur, in this instance, as a result of sustaining the SI, and become habitual.

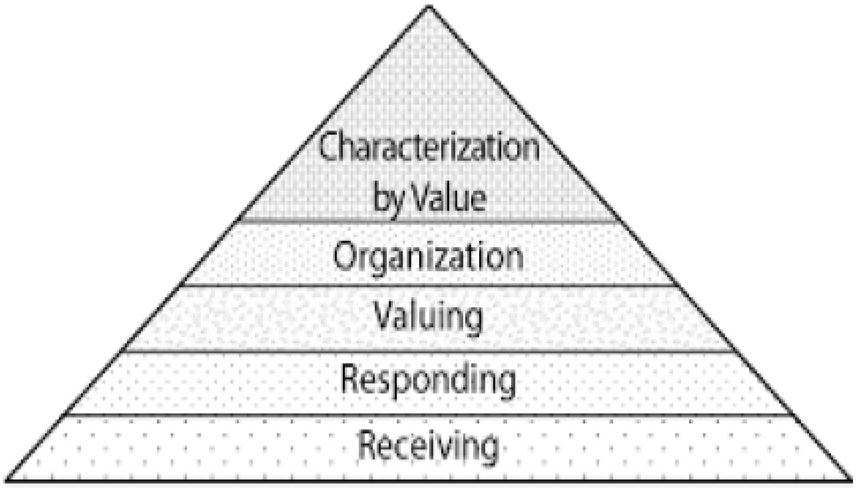


Figure 7: Affective domain (Hoque, 2016, p49)

The five levels of the Affective domain (receiving, responding, valuing, organising, and characterising) are hierarchal, moving from the bottom of the pyramid to the top, and can be considered in terms of where the person is in their recovery and acceptance, which will vary for each participant (BackUp, 2015; Bloom, 2001). Ward (2015) also highlighted the belief that there was a lack of understanding of the WSC's invisible disability / condition, and frustration experienced as a result, with such emotional responses can have an impact on recovery and engagement.

A further taxonomy, and to which sits outwith Bloom's, is behavioural change techniques (BCT), or 'active ingredients', to which has been developed as an extensive taxonomy to provide step change as a method for assisting in behaviour intervention (Michie et al, 2015; Michie et al, 2013), and has been commonly directed towards physical activity (McEwan et al, 2018; Michie et al, 2015). However, the effectiveness of such step methods is questioned, and it has also been suggested to being counter-productive to intervention development (Kok et al, 2015). This is a relatively new area, and where potential use of BCT taxonomy continues to be examined and evaluated for its effectiveness of implementation interventions (Presseau et al, 2015), including within shared decision-making in clinical practice to help patients (Agbadje et al, 2020). As behavioural intervention sits outwith the scope of this study, this taxonomy is not examined further.

Initial research to date shows extensive studies have been undertaken on perceived quality of life on the impact on wellbeing as well as behaviour. Tasiemeski et al (2005) reviewed a number of studies, and found a varying degree of quality of life satisfaction experienced by those with SCI, to which coaching (Rethorn & Pettitt, 2019) and mentoring (Hoffmann et al, 2019) enable significant improvements. The general consensus was that the quality of life was lower than that of the general population. What Tasiemeski et al (2015, p253) did surmise was that *"…highest level of satisfaction existed within social domains such as: family life and contacts with friends"*. Importantly, they also identified life in general was perceived as more satisfying when those with SCI were involved in sporting activities as opposed to not being physically active.

Penedo & Dahn (2005) go further by investigating the relationship between physical activity with both physical and mental wellbeing. General moods are often improved when people are more active, which raises the question as to the impact exercise can have on the SCI community with regards to recovery and a more positive mental health attitude despite challenging times (Penedo & Dahn, 2005), a theme supported by SportScotland (online, 2009). The impact of physical activity on decision-making, which could also be related to health decisions, is unclear (Zimmermann, 2017).

It is important to highlight anxiety and depression are common illnesses experienced by those who have suffered a spinal injury (SIA, 2019). Hancock et al (1993) state between 30-40% of this population will become clinically depressed. Access to support, whether medically or through mentoring, coaching and counselling, has been developed through various SCI charities to help people struggling with mental wellbeing. BackUp not only identified this need for the complete SCI community, but also further developed their own support services and networks aimed at the WSC by identifying the mental hurdles faced by respondents in a survey. Thus, it is suggested, examining the impact talking, mental and emotional support have on the recovery, and the influence this has on getting active, will pave the way for further discussions in the academic field, as well as giving deeper understanding to help bring practical suggestions for positive change in support.

2.4.1 Adapting to change

Adjustment to life changes following a SI involves more than physical care and support. Chemtob et al (2018) state that post-SCI life requires a plan so that individuals can adjust to their new normality, with those who have SI injury but have ability to walk also requiring an assistance program for returning back home (Jannings & Pryor, 2012). However, there is a need to be cautious if applying disability identity as this can cause its own issues, though can be useful when used carefully and precisely (Putnam, 2005).

Despite updates to the model in later years (1990, and is shown later in this chapter), Abraham Maslow’s (1943) original Hierarchy of Needs Five Stage Model (Figure 8) is relevant, highlighting the following three sub areas: basic needs, psychological needs, and self-fulfilment needs. When looking at this in the event of a trauma resulting in SI, the immediate focus will automatically reflect the base of the pyramid, where there is a need for feelings of security and safety, ensuring nutrition and warmth are available. There is a strong need by the SCI sufferer for those around them to understand and support (BackUp, 2019, online; Ward, 2015), and as recovery continues, psychological needs become dominant, followed by the top pyramid stage of self-actualisation. For example, someone sustaining a walking spinal injury as a result of a traumatic incident of, say, a fall from height, will first be requiring basic needs of warmth, comfort, medical care, food, water, rest, and to be made to feel secure, safe with little risk to further injury. These are foundational, and indeed then there are psychological needs, including identity and belonging (Ferrie et al, 2018; Kattari et al, 2018), where connection with others is desired, helping to underpin the basic needs, and the feeling of love, support, being listened to, and cared for, whilst mindful not to impact independence as much as possible, to build confidence even in the most challenging of times. As these needs build, and are successfully achieved, confidence in the medical condition builds, is better understood, and the patient can look ahead with purpose of returning home, managing their condition, to live their life in what is hopefully a healthy manner and where their spinal injury is accepted and becomes part of them, rather than constant obstacle.

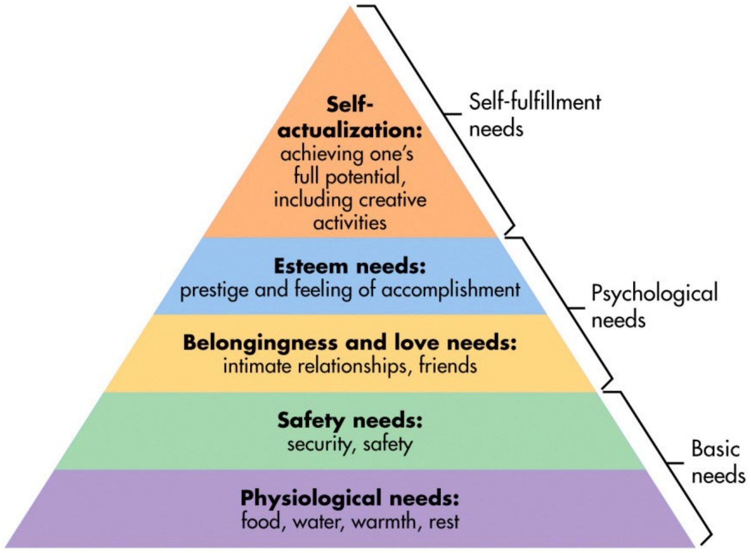


Figure 8: Maslow's Hierarchy of Needs Model, 1943

The staged needs are important as part of this research, allowing those in the WSC to be able to identify barriers to their recovery and being able to return to, or enjoy for the first time, physical activity, and non-elite sports participation. Understanding reasonings and areas of resistance assists in finding the best solution to move forward and give a greater chance for the person to flourish as opposed to retract (Prochaska, DiClemente & Norcross, 1992). It has been argued that Maslow's 1943 model does not go far enough, with one article highlighting the missing component of social connection and support (Denning, 2012, online). Denning (2012) also argues that evidence of a hierarchy does not exist, one to which Maslow later in 1987 agreed by stating order of needs are changeable, based on individual's circumstances. This also follows Maslow's amended Hierarchy of Needs in 1970, which adds two components: aesthetic and cognitive, with a further addition in 1990 of transcendence needs (helping others to achieve self-actualisation) (see Figure 9). When comparing to the previous example given when related to Figure 8, the below updated Hierarchy of Needs Model brings attention to other areas, such as someone who has just endured a walking spinal condition will have basic needs and growth needs, that also include social / belonging which includes social support network, understanding and learning are sought, and self-awareness of ability and physical changes become magnified.

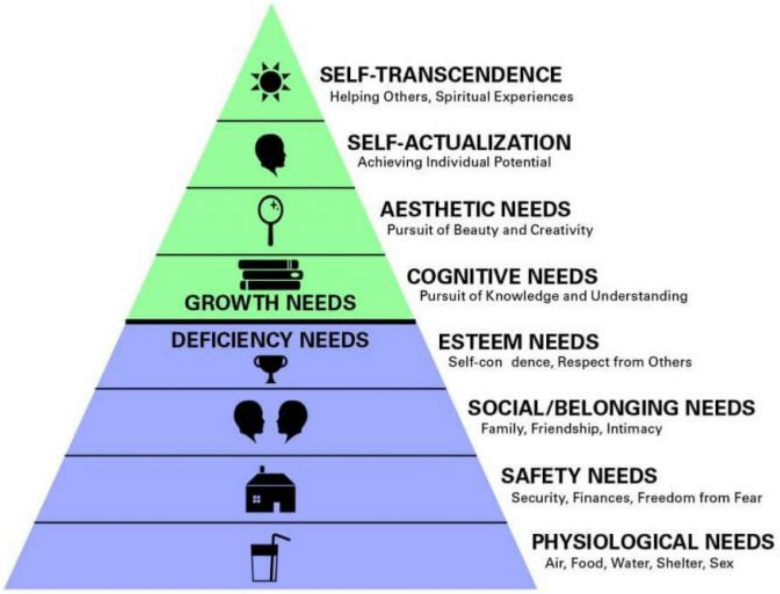


Figure 9: Maslow's Hierarchy of Needs Model, 1990

However, it does perhaps limit further understanding of social connection and collaboration, especially in today's society and social media (O'Shea & Smedema, 2014; Rutledge, 2011).

Maslow's stages (1990) can also be evaluated in relation to the Reactions to Change Model (Davila, 2017), as shown below, as both show relevance of needs being addressed for change to be managed and accepted, which in turn assists in moving forward, with Figure 10 being commonly used in corporate settings. Regardless of subject area, the below model is relevant to change in general (Belyh, 2015), as the steps are applicable to the changing emotions experienced over time. In relation to SCI trauma effects, a trauma takes place which results in the physical and psychological change. Shock will be experienced, resulting in lower self-esteem, and the unknown / fear of the future is realised (BackUp, 2015). Denial is a stage that will see further emotions, which results in a more negative outlook and impact on self-esteem. This period of time will vary for any individual, to which when reality is fully understood, there can be a plummet of emotions, as anger and low mood hits the psychological self (Davila, 2017).

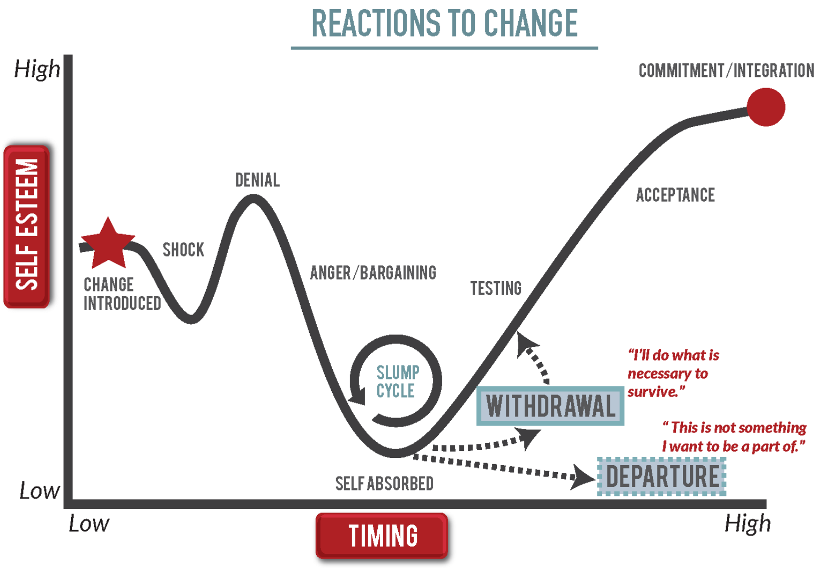


Figure 10: Reactions to Change (Davila, 2017)

Davila (2017) shows there can be options as to what is experienced next, where 'departure' is where the person is able to leave the situation. However, in the case of SI, this is not possible due to the physical injury and potentially lifetime permanence of physical and mental issues (BackStrong, 2020, online; Ward, 2015), with only loss of life being offering such a departure from reality. Therefore, it would be expected that the road to acceptance is either self-driven determination or a stage of withdrawal until further understanding and goals are set to help make that route more manageable. Ultimately, the model highlights that over an undefined period of time, higher self-esteem can be regained and a more positive mindset for commitment and in the case of SCI, acceptance of a new ‘normal’ life (Graham-Jones, 2020).

Table 3 highlights various other examples of change models, which commonly focus on business organisation change, yet this does not mean they cannot be applied when looking at life changes, emotions and finding a way forward.

Model	**Published**	**Stages**	**Positives**	**Negatives**
Lewin's Change Management Model	1950s Kurt Lewin	Unfreeze Change Refreeze	-Remains valid today -Looks for understanding, preparation, reasoning, transition, communications and embrace by all -Highly rated for huge changes	-More effective for indepth analysis and large changes -Time consuming
McKinsey's 7S Model	1980s McKinsey & Company	Strategy Structure Systems Shares values Style Staff Skills	-Encompasses emotional and practical components	-Inter-related parts may be result in failing of process -Complex -Every component supports each other
Kotter's Change Management Theory	1995 John P Kotter	Increase sense of urgency Build team / coalition Ensure strategic vision Communication Reduce likelihood of barriers Shorter-term goals Keep momentum Incorporate the change	-Step by step model -Preparation for change -Focuses on the people behind the change -Inspires sense of urgency and reasons why it's needed -Instils passion and engagement	-No steps can be skipped -Time consuming -Considered as top-down approach, which may result in pushback in those being told what to do at lower levels -Does not give a platform for 2-way discussions on change
Nudge Theory	2008 Cass R Sunstein & Richard H Thaler	Not a model but concept – nudging, encourage, inspiring Define the changes Understand the employees' point of view Evidence reasons for change Listen to feedback and communicate	-Can create strong mindset for momentum -Be used as supplementary to the model, whereby it is a more positive manner	-Not a model -Time-consuming to roll out, measure and act on feedback -Supplementary, but will the emotions of others be considered?
ADKAR Model	2003 Jeffery Hiatt	Awareness Desire Knowledge Ability Reinforcement	-Bottom-up approach, focusing on employees -Set of goals to be achieved	-Risk of top level ignore the requests from employees
Bridges' Transition Model	1991 William Bridges	Ending, losing & letting go Neutral zone New beginning	-Focuses on transition rather than change -Personal approach -Encourages loyalty	-No actionable steps -More of a guideline
Kubler-Ross Five Stage Model / Change Curve	1969 Elizabeth Kubler-Ross	Denial Anger Bargaining Depression Acceptance	-Emotional reactions to change is at the forefront of this model -Allows understanding to issues, where proactive action can be taken - Can limit damage by listening to the feedback	-Individual responses means unlikely everyone's needs can be met -Reactions will vary and at different paces

Table 3: Comparison table of Change Models (Author, 2022)

Lewin’s (1950) Change Model, for example, has three main stages, Unfreeze, Change and Unfreeze, where a deeper understanding is sought to prepare and transition to the change. In relation to those who have suffered a traumatic incident resulting in a spinal condition, the impact of external sources could be considered as an impactful source (Hancock, 1993), and will naturally become a part of this adaptation, especially in relation to communication and ‘people first’ philosophy (Dattilo & Smith, 1990). However, although such a process can be applied for the WSC, such an in-depth analysis perhaps is not realistic in relation to this research area, as those who have suffered trauma and face life-changing effects will not look to Unfreeze the normal, as it is forced upon them.

Each change model is important in its own right, though limitations must be carefully contemplated, for instance those focused more solely on business change will be discounted as part of the research. Thus, there are three models that are considered by the author as key models to apply or even integrate with each other, and to which each focus on the emotions, behaviours, understanding and acceptance of change, and the process to move forward in a positive way to a new way of life:

- Kubler-Ross Five Stage Model (Kubler-Ross, 1969)
- Bridges’ Transition Model (Bridges, 1991)
- Nudge Theory (Sunstein & Thaler, 2008)

Key to this literature review of change is the Kulber-Ross Five Stage Model (1969), often referred to as the Grief Model. Timescale will vary per person, but in essence, the flow of the model gives understanding to the five steps of denial, anger, bargaining, depression, and acceptance. This model is widely used in business, and continues to hold weight despite its creation being in 1969, though does alludes to the process of change as linear, and that individuals may not experience all five stage, nor experience in the order as set out (Corr, 2020). That said, the model’s origination was of bereavement and grief, even though some 50 years later, this is perhaps overlooked and instead viewed only as a generalisation for change (Shoolin, 2010).

Bridges’ Transition Model (1991) has three key stages: endings, neutral zone and new beginnings. It provides a clear correlation to emotions experienced as transitioning to change (Tremolada, 2015), and in the case of this research, trauma. Tremolada (2015) highlights an important difference between transition and change, whereby transition will be at a slower pace and can be seen as a choice as opposed to change, which will happen with or without support and can happen quickly. However, in terms of the curve, it mirrors Kulber-Ross' model (1969), with the neutral/transition phase being pivotal for the transition forward.

The Nudge Theory, created by Sunstein & Thaler in 2008 to encourage and inspire, is a concept as opposed to an actual model and can be incorporated with any model. This is a supplementary resource in the positive mindset it encourages, and its ability to influence behaviour. Whilst Kosters & Van Der Heijden (2015) agree, arguments opposing the theory are also highlighted, including the view that it does not allow people to have freedom to make decisions and emotions to be taken into account. This does detract from the underpinning stages which includes understanding fear of change and asking for feedback and communication to allow better transitions, and over time can see productivity continue to decline or level, as opposed to build once more.

The importance between the last two models may be subtle, but it is important to consider the approach of questioning the terminology and the impact to the recipients, bearing in mind they currently are, and have adapted to, life following a trauma that has resulted in a perceived end of their old life.

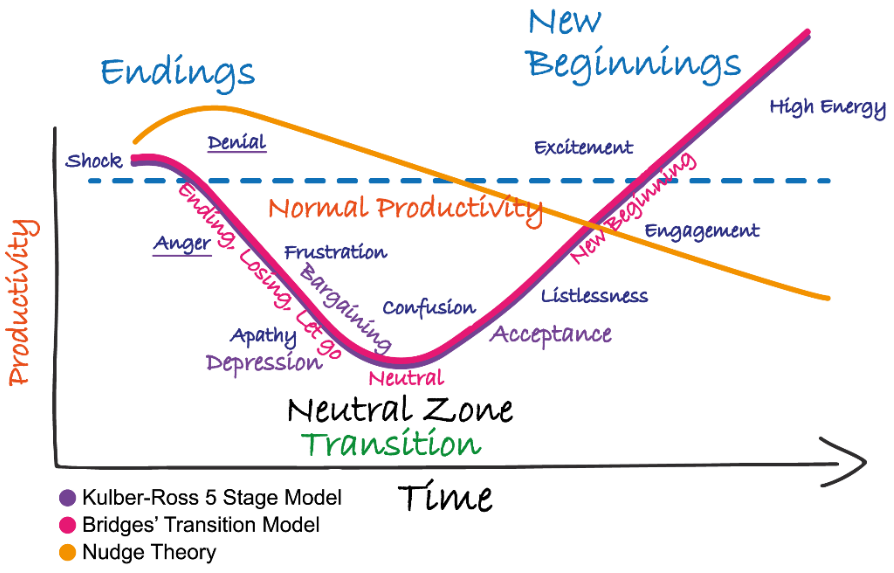


Figure 11: Adapting to change: combining theory with models (Author, 2020)

As shown in Figure 11, it is proposed that the two models and one theory can be combined to give insight into the process that the WSC face with regards to emotions and productivity surrounding change. The Bridges' Transition Model (1991) takes centre stage as the basis, with Kubler-Ross Five Stage Model embedded fully, giving understanding on the emotions that are not only faced over time, but what are perceived barriers to adaptation (BackUp, 2020, online; Graham-Jones, 2017; Ward, 2015). Supplementing this combined view with Nudge Theory (2018) takes the established models further than first developed. The diagram illustrates that the Nudge line begins at the same level of productivity/activity line, but then increases as concentrated efforts are required in the early stages and will naturally lessen as shock, denial, frustration, and acceptance are experienced, and efforts are made to forge new beginnings.

Combining these models can give a greater understanding of what the WSC face at the initial stage of trauma, with the duration varying per person depending on varying factors that have an impact on recovery, such as nature of injury, pre- and post-trauma support (through both medical / professional and social support network), personality, determination, and self-belief (HelpGuide, 2020). It is proposed the blue dotted line demonstrates a stabilisation level, whereby encouraging the starting point of higher productivity as one that can be sustained should adaptation to change be better managed, and always seeking to best manage change to avoid the pitfalls of negative emotions and behaviours, and instead find ways to make the change a more positive experience (Mills, Nicolson & Smith, 2019).

2.4.1.1 Transtheoretical Model (TTM)

Each of the above highlighted models give an understanding of emotional changes due to situations, with Kubler-Ross Five Stage Model (Kubler-Ross, 1969) and Bridges' Transition Model (Bridges, 1991) very similar in their path in relation to productivity, time and emotional stages, whereas Nudge Theory (Sunstein & Thaler, 2008) is more of a concept that highlights change in behaviour which requires more effort in the first place, and then lessens as behaviour changes. However, although these have proven very relevant models in relation to this research, and adapting to life-changing situations and conditions, there are two further standalone models to be considered further to the above mentioned models, with the first being discussed is TMM (Prochaska & DiClemente, 1986), to which first was discussed by Prochaska and Clemente in the 1970s, and aims to give understanding to behavioural changes.

The TMM is one that is highly regarded with Google Scholar showing thousands of citations of TMM papers, and over the decades has been further developed. The TTM considers behaviour change as dynamic as opposed to all in or not at all (Marshall et al, 2001), and as a result move through stages of transition, though the stages are not set in a linear direction but instead, movement forward and backwards will occur in a cyclical approach as a result of relapses, based on the adapting of the change; this is also considered a spiral model of Stages of Change, see Figure 12 (Prochaska, DiClemente & Norcross, 1992).

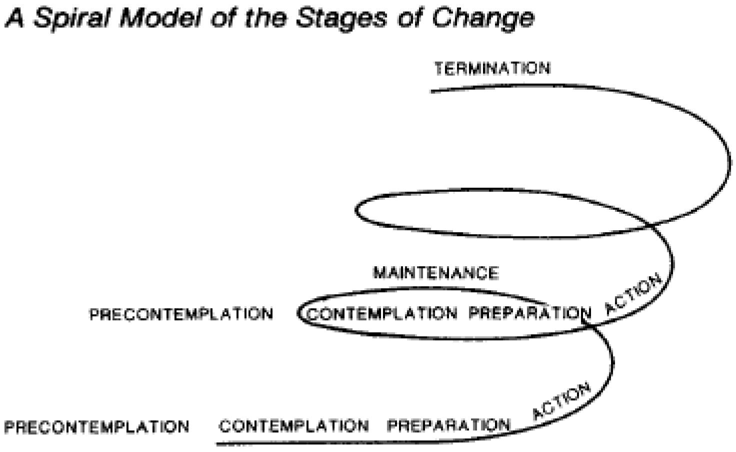


Figure 12: Spiral model of the stages of change (Prochaska, DiClemente & Norcross, 1992, p1104)

It is also argued that interventions based on TMM can help shape motivation and target behaviours, resulting in different outcome behavioural changes (Norcross, Krebs & Prochaska, 2011; Prochaska et al, 2008; Basler et al, 2005; Prochaska & Norcross, 2002). To give an overall understanding of TMM, Abrash Walton (2018) and Abrash Walton et al (2022) highlight there are essentially four major constructs to this model, to which gives understanding to and assisting in the facilitation of change of behaviours:

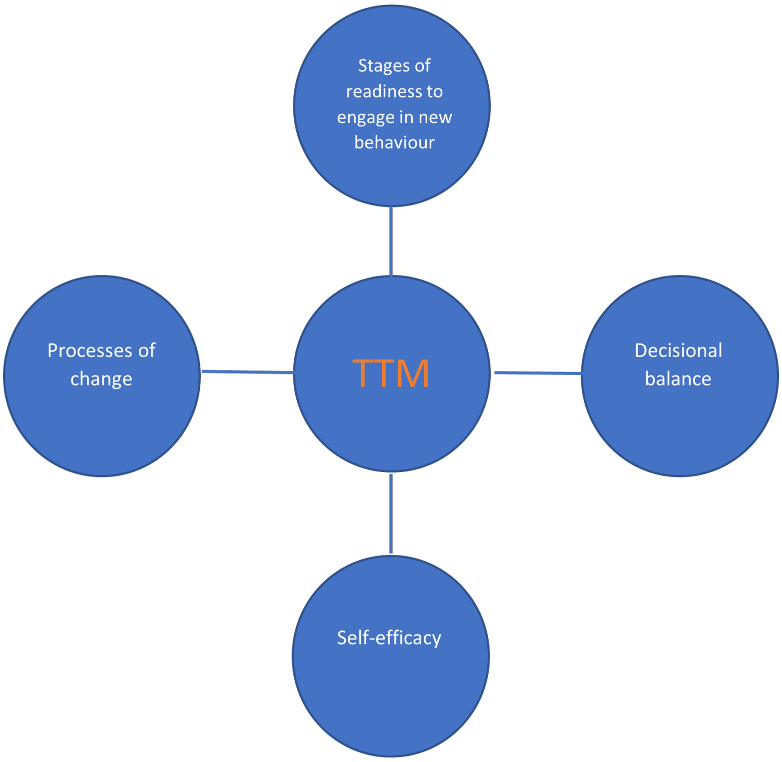


Figure 13: Core TTM constructs (Abrash Walton, 2018, p236)

When considering engagement in physical activity, TTM can be applied to give understanding on and assistance to changing behaviour, as well as tackle the barriers to successfully making a transition, and can be effective in motivating people to move towards target change (Houlihan et al, 2016; Basler et al, 2005). As shown in the above model by Abrash Walton (2018), one of the TMM parameters is 'Stages of Readiness' to which refers to the Prochaska, DiClemente & Norcross (1992) key five stages (Figure 14), with the additional sixth stage (termination) representing either relapse or end as new habit have now been learnt and an individual leaves the TTM stages (Prochaska et al, 2008; Prochaska & Velicer, 1998).

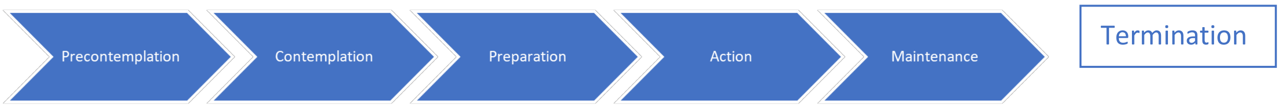


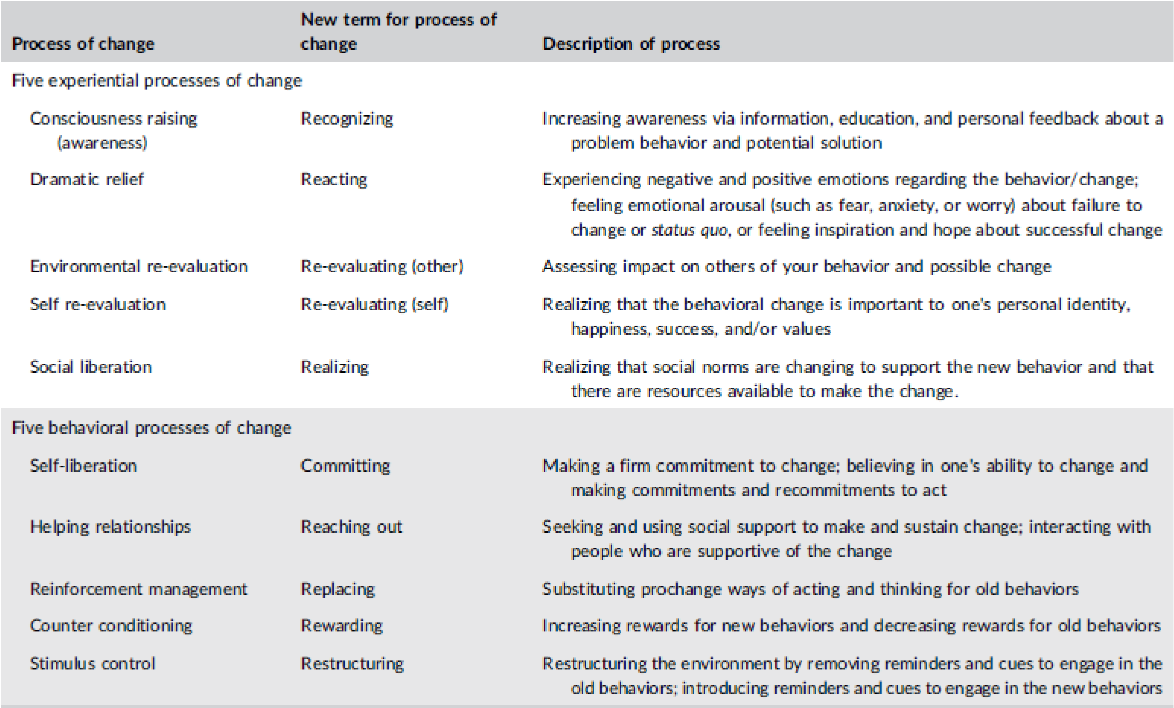
Figure 14: TTM stages (Prochaska et al, 2008)

Each ‘readiness’ stage shows the journey to readiness, execution, and completion, with the end result being a change in behaviour, and for this behavioural change to be long-standing due to new habits being learnt and ingrained (Norcross, Krebs & Prochaska, 2011). A summary of each stage, from pre-contemplation to termination, is shown below.

Precontemplation	Not ready	Not intending to take action, and can be unaware of the impact their behaviour
Contemplation	Getting ready	Beginning to recognise that behaviour is a problem or barrier, and start to look at impact of continued actions
Preparation	Ready	Intending to take action in the immediate future, making small steps to changing behaviour
Action	Action	Specific changes have been made to better behaviour and acquire new healthier traits
Maintenance	Six months plus	Maintaining new behaviours and attitudes for at least 6 months, not wishing to revert
Termination	End of engagement	New habits have been learnt and ingrained, making people have zero temptation to reverting to unhealthy ways

Table 4: Summary of TTM stages of readiness (Prochaska et al, 2008)

Throughout the change processes, as shown above, there are also Processes of Change, another TTM construct as illustrated in Figure 13. Processes of change gives understanding of when there are changes in attitudes, intentions, and behaviours (Prochaska, DiClemente & Norcross, 1992), and encompasses 10 stages, split between experiential and behavioural processes, all of which help to explain how changes in cognition, emotion and behaviour take place, as illustrated by Abrash Walton et al (2022) in Table 5 below. Experiential processes are said to be effective in new behaviour within the earlier stages of readiness of change, whereas behavioural processes give greater support to the latter stages (Abrash Walton et al, 2022; Abrash Walton, 2018). Although the overlay of stage and processes of change have been examined for over four decades, with Prochaska and DiClemente first developing TTM concept in 1977, a more recent evolution has come from Abrash Walton et al (2022) who have developed new terminologies for process of change as they argue the terminologies to date were not intuitive and therefore limiting. Table 5 below illustrates the original and new terminologies, and are aided by description of process, and Abrash Walton et al (2002) then apply the terminologies to the Stages by Processes of Change model (Figure 15).



Process of change	New term for process of change	Description of process
Five experiential processes of change		
Consciousness raising (awareness)	Recognizing	Increasing awareness via information, education, and personal feedback about a problem behavior and potential solution
Dramatic relief	Reacting	Experiencing negative and positive emotions regarding the behavior/change; feeling emotional arousal (such as fear, anxiety, or worry) about failure to change or *status quo*, or feeling inspiration and hope about successful change
Environmental re-evaluation	Re-evaluating (other)	Assessing impact on others of your behavior and possible change
Self re-evaluation	Re-evaluating (self)	Realizing that the behavioral change is important to one's personal identity, happiness, success, and/or values
Social liberation	Realizing	Realizing that social norms are changing to support the new behavior and that there are resources available to make the change.
Five behavioral processes of change		
Self-liberation	Committing	Making a firm commitment to change; believing in one's ability to change and making commitments and recommitments to act
Helping relationships	Reaching out	Seeking and using social support to make and sustain change; interacting with people who are supportive of the change
Reinforcement management	Replacing	Substituting prochange ways of acting and thinking for old behaviors
Counter conditioning	Rewarding	Increasing rewards for new behaviors and decreasing rewards for old behaviors
Stimulus control	Restructuring	Restructuring the environment by removing reminders and cues to engage in the old behaviors; introducing reminders and cues to engage in the new behaviors

Table 5: TMM process and new terms for processes of change (Abrash Walton et al, 2022, p390)

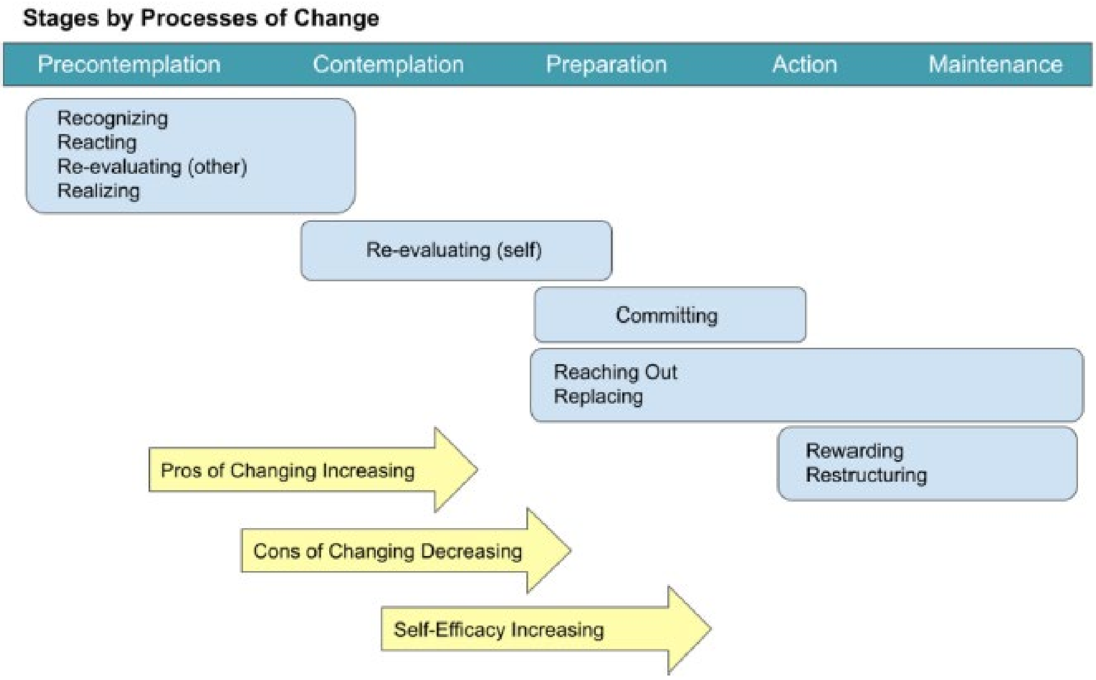


Figure 15: Stages by processes of change (Abrash Walton et al, 2022, p391)

When examining the above diagram, and compare to the previous terminology (Table 5), it can indeed be argued that Abrash Walton et al's (2022) updated TMM detailed model now gives a clearer understanding of stages, as the terminology is indeed intuitive, and there is clear acknowledgment to the growth in self-belief and the positives of change being experienced, from pre-contemplation to maintenance, and beyond (termination). However, although the Change Spiral model (Prochaska, DiClemente & Norcross, 1992) shows a final stage of 'termination', it can be argued if termination is even possible, as although new habits will hopefully have become embedded, there are multi-level influences (West & Michie, 2020; Werch et al, 2009) and stimulants that can weaken the resolve, and therefore, maintenance may indeed be permanent for some (Prochaska et al, 2008). For instance, when applying the Change Spiral model (Prochaska, DiClemente & Norcross, 1992) to those that smoke, there may be relapses at varying times through the idea of giving up through to cessation, but there is no guarantee that 'termination' stage of the model is permanent, as a relapse can come at later stage (Agboola, Coleman & McNeill, 2009), and there is a level of maintenance that is required. This thinking is supported when considering statistics, with approximately just 15% of those in England who stop smoking for four weeks will continue to do so for at least a year, thus the behavioural change has been tested and proven limited (Agboola, Coleman & McNeill, 2009), though the percentage rate of success increases linearly with the increasing level of motivation (Kotz, Brown & West, 2012). Thus, it would be prudent to view the change model's termination stage with caution, and bear in mind, the earlier TMM stages model in the 1970s and 1980s (Prochaska & DiClemente, 1986; DiClemente, Prochaska & Gibertini, 1985) did not state 'termination', and can be argued for good reasons, as maintenance remains ongoing to avoid the relapse and old returning.

That saying there are still two further constructs of TTM (Figure 13), as shown by Abrash Walton, 2018 - Decisional Balance and Self-Efficacy. With regards to decisional balance, this is based on considering positive and negative consequences, and that an individual is more likely to be satisfied and invested in a decision after considering both sides (Abrash Walsh, 2018). Yet a support network and helping relationships are also encouraged and helpful individuals reinforce new behaviours and habits (Chemtob et al, 2018), and better manage temptations which may lead to relapse or giving up with their efforts (Prochaska et al, 2008). As illustrated in Figure 13, stages by processes of change, when someone is in pre-contemplation stage, the perceived negatives to the change outwith the positives, yet there is a balance shift as the person moves to contemplation (where they are focusing on the positive outcomes) and will move to preparation when the positives are outweighing the negative, and as such self-belief, or self-efficacy, begins to increase. The decisional balance continues, and maintenance will only be achieved should the positives outweigh the negatives (ProChange, 2022, online).

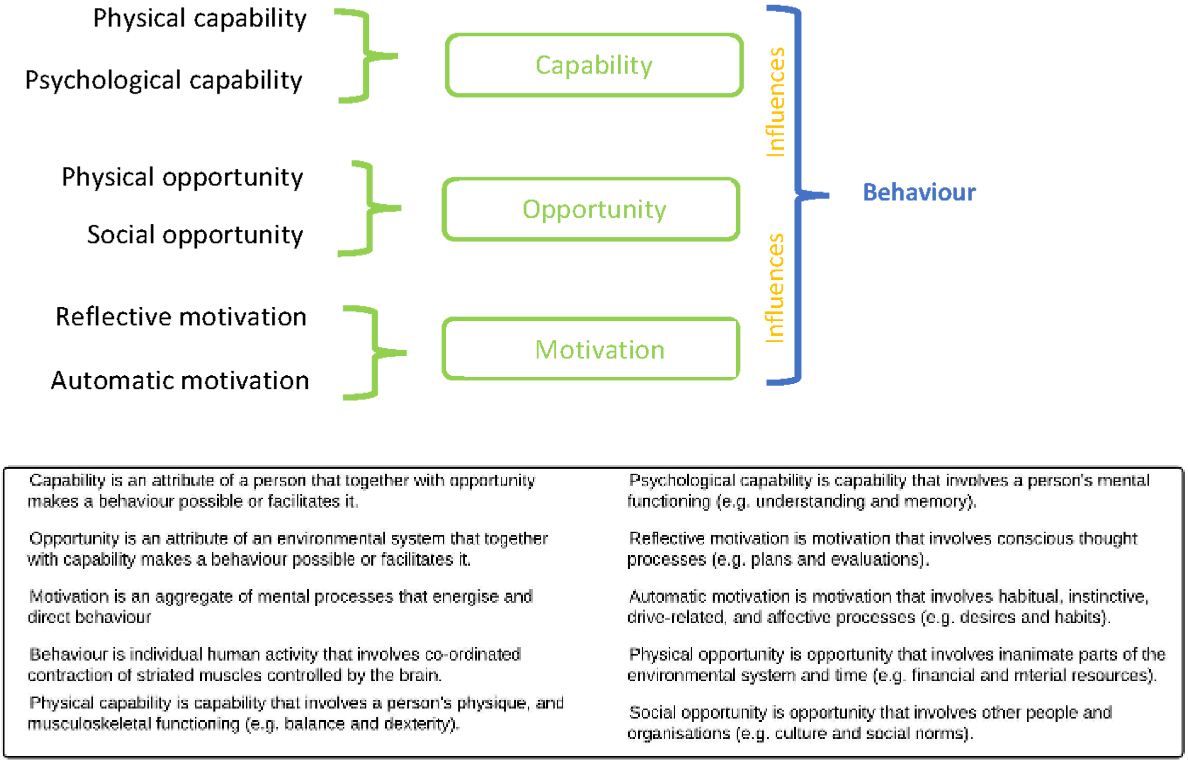
The self-efficacy TMM construct (Abrash Walton, 2018) (Figure 13) is based on Bandura's self-efficacy theory (1977), and highlights the relationship with behavioural changes. Self-efficacy can influence an individual's motivation and determination to successful change behaviour, and as shown in Figure 15, self-efficacy changes as an individual moves from preparation to action and maintenance, with self-efficacy levels continuing to increase, thus reducing the likelihood of relapse (Abrash Walton et al, 2022; Abrash Walton, 2018).

TMM has been further developed more recently as a result of research by Maccabi Healthcare Services and the ethics committees of Tel Aviv University.

From this, the Enhanced Transtheoretical Model Intervention (ETMI) was introduced in 2017, whereby physiotherapists were trained to include behavioural change techniques in their practice with the view of improving pain levels, disability, and recreational physical activity in patients with chronic lower back pain (Feldman et al, 2022). The content of the behavioural change training included communication skills (Freytag et al, 2022); detection of TTM stages; using motivational interviewing in relation to physical activity self-efficacy and addressing fear of walking and movement (Ben-Ami et al, 2017). ETMI was found to be more effective than solely physiotherapy (Canaway et al, 2017), with significant improvements were recorded in relation to measurement of disability and physical activity engagement, although pain scores saw no difference between the groups of ETMI and control group. Although ETMI model is not one that necessarily fits with this research, as it is based on physiotherapists undergoing behavioural change training and implement as part of their sessions, it is important to highlight this new academic development, one that does have some crossovers, albeit for talking support.

2.4.1.2 COM-B model

TTM model (Prochaska, DiClemente & Norcross, 1992) gives an understanding of behavioural changes, however, considerations to behaviour can be taken further by considering not just attitudes and behaviour, but capability, opportunity and motivation, as highlighted in the COM-B Model of Behaviour (West & Michie, 2020), to which has six antecedents, two being relative to each of the main three constructs of Capability, Motivation and Opportunity (see below Figure 16). COM-B model is designed to provide an overarching model capturing all known factors influencing behaviour change (Keyworth et al, 2020; Michie, Atkins & West, 2014).



Capability is an attribute of a person that together with opportunity makes a behaviour possible or facilitates it.

Opportunity is an attribute of an environmental system that together with capability makes a behaviour possible or facilitates it.

Motivation is an aggregate of mental processes that energise and direct behaviour

Behaviour is individual human activity that involves co-ordinated contraction of striated muscles controlled by the brain.

Physical capability is capability that involves a person's physique, and musculoskeletal functioning (e.g. balance and dexterity).

Psychological capability is capability that involves a person's mental functioning (e.g. understanding and memory).

Reflective motivation is motivation that involves conscious thought processes (e.g. plans and evaluations).

Automatic motivation is motivation that involves habitual, instinctive, drive-related, and affective processes (e.g. desires and habits).

Physical opportunity is opportunity that involves inanimate parts of the environmental system and time (e.g. financial and mterial resources).

Social opportunity is opportunity that involves other people and organisations (e.g. culture and social norms).

Figure 16: COM-B Model of Behaviour (West & Michie, 2020), text taken from p2

The literature review suggests it is important to consider influences and the impact each have on capability, motivation, and opportunity, with above Figure 16 illustrating the interlink between each of the three key factors, all ultimately impacting behaviour (Biddle, Mutrie & Gorely, 2015). The WSC are said to face unique barriers to engaging in recreational physical activity, with lack of knowledge and interest, cost, proven interventions being examples (Lawrason et al, 2022), with little guidance or support given when discharged to the community (Jannings & Pryor, 2012). Yet, giving greater understanding to Capability, Opportunity, and Motivation constructs, as illustrated in the figure above, helps to identify individual, environmental and social influential factors, all of which interlink and give behavioural outcomes (Willmott, Pang & Rundle-Thiele, 2021).

It is proposed COM-B model (West & Michie, 2020) complements TMM (Prochaska, DiClemente & Norcross, 1992), as thoughts on change and activity become present in the mind (from the contemplation stage), and then behaviour is dictated by perception regarding what is highlighted in COM-B model. Both approaches of TTM and COM-B models enable a greater understanding to perceptions and have the ability to positively impact the proposed Adapting to Change model (Figure 11), assisting in maintaining productivity over the duration of change, due to deeper understanding, intervention / assistance and action, and potentially avoiding the largely negative effects to emotions, stress levels and productivity. Furthermore, when considering Figure 11, in relation to exercise / physical activity, recognising behaviours enable intervention strategies to be applied and at an earlier stage of required assistance, as shown in Figure 17, thus, guiding the person to a more positive place of learnt traits, ultimately giving greater positive consequences (Ferron & Massa, 2013).

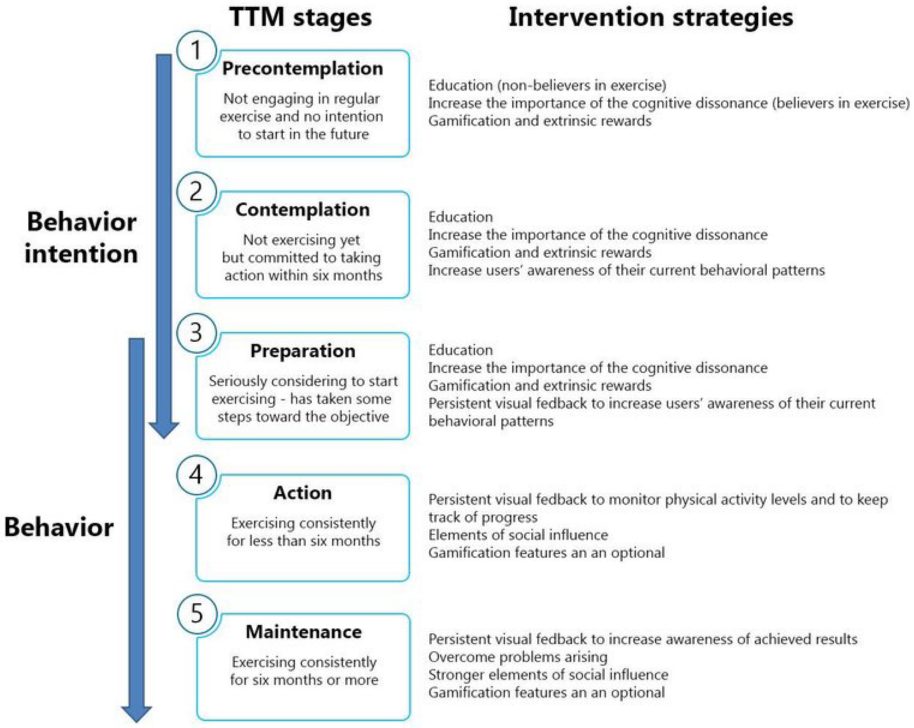


Figure 17: Transtheoretical Model applied to exercise (Ferron & Massa, 2013)

This updated TMM by Ferron & Massa (2013) was updated with regards to examining behaviour surrounding exercise. For over 30 years, there has also been development of theoretical frameworks to assist in the understanding, prediction and intervention to assist in the promotion of physical activity, with social cognitive approach the most common whereby social learning and mental representation of motivation are considered, basing reasoning on people form and act upon expectancies of events and outcomes, and their behaviour is formed as a result, however although all frameworks assist, they have weaknesses in providing understanding and promoting activity (Rhodes, McEwan & Rebar, 2019). However, it has been important to reflect on the discussed change models and remain open minded with regards to what best assists in the understanding of behavioural change.

Further to discussing and considering the close relationship that can be potentially formed between COM-B and TMM, literature research has presented a further combination involving COM-B, this time Theoretical Domains Framework (TDF), to which De Leo et al (2021) have built upon the initial six antecedents as highlighted in Figure 18, expanding to demonstrate 14 domains, as illustrated below. TDF builds upon COM-B's platform of understanding what could be potential influencing factors, and gives attention to underlying barriers and facilitators of change (Keyworth et al, 2020), to which the below is an adaptation. The below COM-B and TDF matrix (De Leo et al, 2021) clearly demonstrates all antecedents feeding into the main areas of Capability, Motivation, and Opportunity, each giving direction, understanding and areas as a result of all 14 domains of TDF now being assigned to their behaviour category:

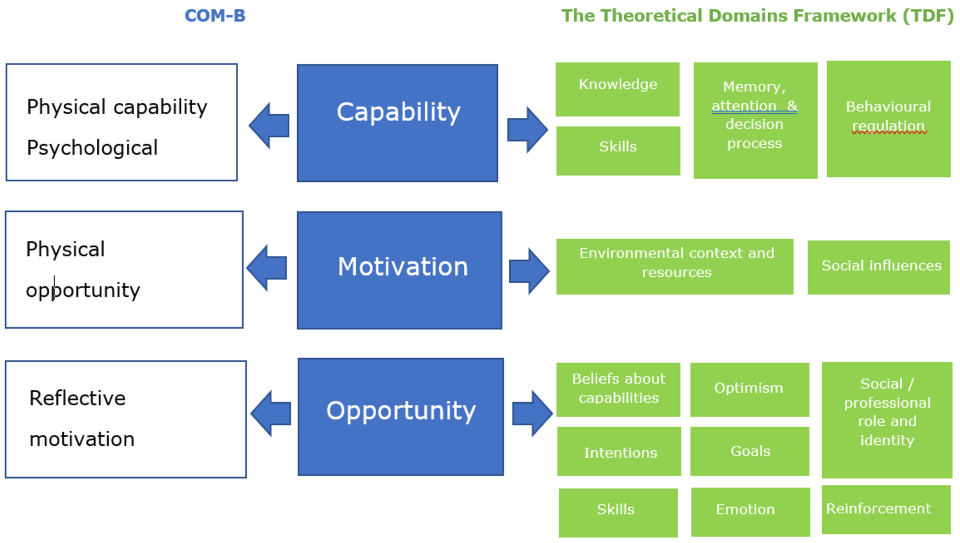


Figure 18: The COM-B and TDF matrix (De Leo et al, 2021)

This matrix has proven interesting in relation to this study’s focus of coaching and mentoring effectiveness, though the matrix does appear to leave a gap in understanding where an individual is in the stage of change process and where outcome would flow, with the ‘now what?’ question being raised. This questioning mirrors the question posed earlier surrounding Termination stage of TMM (Figure 14), highlighting the need for clarification as to what happens after completing the above. That aside, TDF’s domains do give focus to a number of underlying factors that may influence an individual’s behaviour, and essentially actions and outcomes (Keyworth et al, 2020). However, TDF does have its own limitations as although the 14 domains can be mapped directly into COM-B, the framework is said to be descriptive and fails to establish a link between domains (Timlin et al, 2020), and therefore should be used as reference rather than limiting influences to what is listed. Yet, health studies have found the combination of COM-B and TDF to provide a comprehensive framework (Bentley et al, 2019; Alexander, Brijnath & Mazza, 2014), however the application to the target group of the WSC remains limited, and to which potential development is considered as part of this research thesis.

On reviewing the literature review and the relevant models, it is proposed that should Ferron & Massa (2013) had applied a further layer to their evolved TMM, to which does not include Termination but regards change as ongoing process where maintenance is required, and included the COM-B theory, greater depth would be realised, as there would be greater understanding as to motivation, capability and opportunity that result in behaviour, regardless at what stage of change they are at. As such, the literature review highlights a potential relationship between COM-B and TMM (Figure 19) to better understand behavioural change, though to which there are a number of models as already discussed.

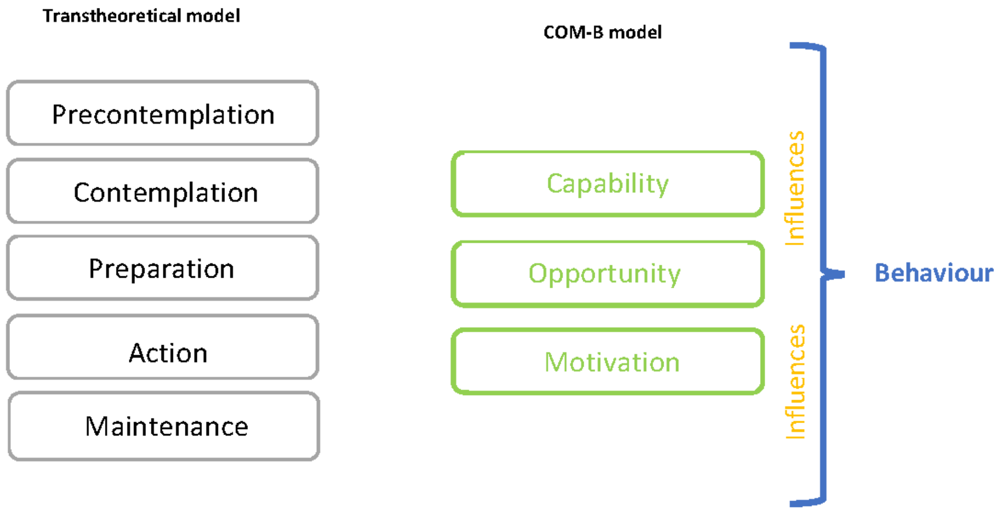


Figure 19: TTM and COM-B models

Although the TDF model is not illustrated in the above, it remains an important behavioural change model, and as already demonstrated by in Figure 18's COM-B and TDF matrix (De Leo et al, 2021), the 14 domains are offset considerations of Capability, Opportunity, and Motivation, though not an exhaustive list. It is also argued PERMA model (Seligman, 1998) also has its place as COM-B considerations (Figure 3), with its five key areas being positive outcomes, engagement, positive relationships, meaning and accomplishments, all of which said to impact behaviour. The above matrices acknowledge the findings of the literature review and enable an understanding to an individual's behaviour and motivations in relation to change, that ultimately lead to outcomes, whether that be through action or refusal to change. Perception of capability, opportunity and motivation can shift, and are impacted by self as well as external factors, all of which give behaviour, regardless at what stage of change they are at.

2.4.2 Trauma and emotional wellbeing

The topic of wellbeing has seen decades of research and investment to given enlightenment and direction to governments throughout the world so that sustainable future is achieved, on that brings greater health and happiness to people, and an overall healthier planet (Searle et al, 2021). Wellbeing can be examined from various perspectives, including subjective wellbeing (SWB) and psychological wellbeing (PWB) (Williams et al, 2014). Both of which are key as they consider life satisfaction and happiness (SWB) in conjunction with psychological growth and development (PWB). However, as wellbeing is very personal to an individual, and is subjective in nature, this is hard to measure accurately (Layard, 2010), though self-awareness and assessing wellbeing as an ongoing process may make this easier for an individual (Frijters, 2020). For this research to fully understand the change in behavioural psychology, specifically behavioural change and motivation, wellbeing is explored further.

As already highlighted, many people within the WSC can be considered as having a long-term disability, depending on the change to ability and quality of life, and as such, it is important to not only look at the change and their behaviours from a physical impact perspective, but also the emotional and mental considerations (Lieberman, 2022; Wefald, 2021; BackStrong, 2020; BackUp, 2019). The link of emotional disorder and trauma has been extensively documented over the last 10 years, both within academia and in the general media (Petersen, Meade & Mahmoudi, 2022; Aspire, 2019, online; BackUp, 2020, online; SIA, 2019, online; Koenen et al, 2017).

In 2014, the US Department of Health & Human Services published a report examining the impact of trauma and the care offered. The term Trauma-Informed Care (TIC) has been used to discuss the understanding of traumatic stress reactions and the associated responses. As highlighted by various spinal resources in the UK, including spinal injuries units, and spinal organisations BackUp, BackStrong, SIA, SIS, individuals will respond differently to experiences. But what also stands out in the US governmental report is resilience when facing adversity, and that many factors play a part in recovery, including personality, traits, socio-cultural aspects, and support. Behaviour and the ability that any negative, restricting behaviour can be changed over time, ultimately impacts consequences and wellbeing (West & Michie, 2020). The trauma of sustaining a spinal cord injury can be immediate and life altering (Hastings & Horn, 2009), and this is indeed also the case for a spinal injury, even where walking ability remains, as highlighted by this doctorate's research participants.

The US report states a variety of reactions follow a traumatic incident, where these lessen over time due to the development of reliance and coping strategies through the time of change and / or adjustment (Divanoglou & Georgiou, 2016). A traumatic incident does not necessarily mean that a person will suffer from Post Traumatic Stress Disorder (PTSD), however, emotional disorders should not be overlooked as support can and should be given at any level or stage (Koenen et al, 2017; Bryant et al, 2015). Furthermore, people who had endured physical impairments, including SCI, following a traumatic event or accident are more likely to experience negative wellbeing in the form of post traumatic distress compared to those with no physical injury (Martz & Cook, 2001).

In a 2008 Australian study, it was revealed that 48.5% of the SCI population suffered from mental health issues including depression (37%), anxiety (30%), clinical-level stress (25%), and PTSD (8%) (Migliorini, Tonge & Taleporos, 2008). The support network offered to the sample SCI community is unclear for it to be reflective to other countries, particularly the UK. The study clearly highlights the need for further examination into SCI and mental health as despite the sudden, traumatic nature of SCI (whether it is through an accident, fall, sporting event or another cause), the link between PTSD and SCI is not well researched to date. However, as already highlighted in this paper, there are varying degrees of mental health issues that can be experienced, and to which there is no definitive guide as to likelihood of experiencing mental health issues following a spinal injury, though 12-month prevalence estimates for depression alone is stated as 6.7%, and that SCI population are at greater risk (Williams & Murray, 2015).

One rule cannot be applied to all with regards to resilience responses to trauma as they are individualised, with timeframes undefined (US Health Services Report, 2014). In addition, people who have endured a stressful and traumatic incident often engage in evaluation of the experience, with focus given to the impact on their own lives, those around them and also consider their life in general (deRoon-Cassini et al, 2009).

Although those who are within the WSC have mobility, albeit to varying degrees, there is still a period of change to work through, and this research will provide insight into the impact a traumatic incident has on emotional wellbeing, which in turn will impact social inclusion including physical activities. Furthermore, as discussed by Stephens et al (2012), there are a number of perceived emotional and organisation barriers to overcome, as well as those put in place by others. The ability to listen and to be listened is an essential part of effective communication (Freytag et al, 2022; Jahromi et al, 2016) to which can also impact wellbeing, with the essence of listening being empathy, to which being fully present is required to achieve this (Nichols & Straus, 2021). Coaching and mentoring, in the nature of listening and encouraging, offers a safe space for an individual to consider and analyse their situation and outlook from different perspectives but to be able to move forward in all areas of life (Wefald, 2021). According to Rubtcova & Varlamova (2019, p196), *"in order to improve performance, the listener need to develop strategies for increasing a repertoire of and for addressing non understandings and misunderstandings that occur".* Thus, listening, engaging, promoting discussion can help to build repertoire with an individual (or team), whilst also lessening the opportunity for confusion, and further depth of information can be gained (Wefald, 2021). Coaches are trained to actively listen and continually build upon their skills to deliver impactful service to clients (Association of Coaching, 2021, online). Coaching can have a profound impact on wellbeing, with a study showing 2.4 times greater enhancements in physical wellbeing, and over two times more psychological wellbeing (Prochaska, Norcross & Saul, 2020).

The relationship between physical, psychological and social factors for those with SCI injuries are demonstrated in bio-psychosocial models, highlighting the need for psychosocial support (interrelation between social factors and individual thoughts and behaviours) during rehabilitation stage (O'Shea & Smedema, 2014; Gomara-Toldra, Sliwinksi & Dijkers, 2014), thus to aid recovery. However, patients with walking spinal injuries do not necessarily form part of these models, but if they were considered part of the SCI grouping, they could also benefit from the reported positive outcomes, including mental health. However, despite the benefits of psychosocial rehabilitation of SCI (Williams et al, 2014; Bennett et al, 2007), this remains an area that is said to require further research which may help the current lower priority by healthcare professionals (Li, Bressington & Chein, 2017). This interlinking of physical (or biological), psychological and social / environmental factors have also previously been examined in relation to depression, with chronic pain and traumatic life change, including the subsequent effect on wellbeing, playing a role in poor mental health (O'Shea & Smedema, 2014). Furthermore, those with a spinal injury are said to be more likely to be socially isolated due to physical changes and environmental barriers, which again can lead to poor mental health implications (Conti et al, 2022).

A hypothesised model of adaptation to SCI, as developed by Martz et al, 2014 (Appendix 2), examines the predictors of adapting to spinal cord injury or disorder, and includes an area for psychosocial elements of acknowledgement, adjustment, and quality of life. When considering this model to WSC, the latent variables of 'negative affectivity', 'disability severity / impact' and 'disengagement coping' are also relevant, and it is suggested could be further developed for specifics of this community.

2.4.2.1 Body image

When an individual has been involved in a traumatic incident or accident, and there is a resultant physical change, such as what a spinal injury brings, psychological experiences are impacted in relation to attitudes and feelings towards the body (Markey, Dunaev & August, 2019; Bailey et al, 2015; Taleporos & McCabe, 2002). Body image is subjective to each individual, and is the perception of one's own body, irrespective of the reality of how the body looks (Hosseini & Padhy, 2019). Body image is a complex psychological construct comprising thoughts, feelings, perception, and behaviours, and may relate to size, shape, functionality, and capability (Taleporos & McCabe, 2002), and more recently, has increasingly been linked to the area of weight loss and appearance, to which social platforms are magnifying these areas as societal idealisation (Bailey, Gammage & Van Ingen, 2017).

Health and wellbeing cultural focus has given more attention to how an individual is physically and psychologically (Zachary et al, 2019), with social media platforms providing easy access (Rutledge, 2011) to guidance whether from experts or those that choose to share their thoughts. However, these social platforms may prove negative for self-comparison, where an individual may focus consciously or subconsciously on the areas of their body they dislike or feel less confident about (Marks, De Foe & Collett, 2020), thus, negatively impacting any health and wellbeing efforts.

Poor body image can affect both physical and psychological health and can influence self-esteem, mood, competence, social functioning, and occupational functioning (Hosseini & Padhy, 2019). However, where an individual learns to change their focus from body appearance to functionality, there is a greater likelihood of a more positive body image perception (Vinoski Thomas et al, 2019), to which highlights the need for supporting someone during such challenging times. Yet, this may not always be the case, with patients feeling disconnected from treatment, including that of their bodies, and that rehabilitation professionals have a role in ensuring being treated as individuals and not by injury (Bailey et al, 2016).

In relation to positive body image experiences for those with a SCI, the severity of the spinal injury is not considered in proportion to any negative feelings about body changes and body image, with emotions varying across the spectrum (Vazquez-Farinas & Rodriguez-Martin, 2020). Interestingly, a 2015 study by Bailey et al identified the following categories influencing positive self-image, as shown in Figure 20:

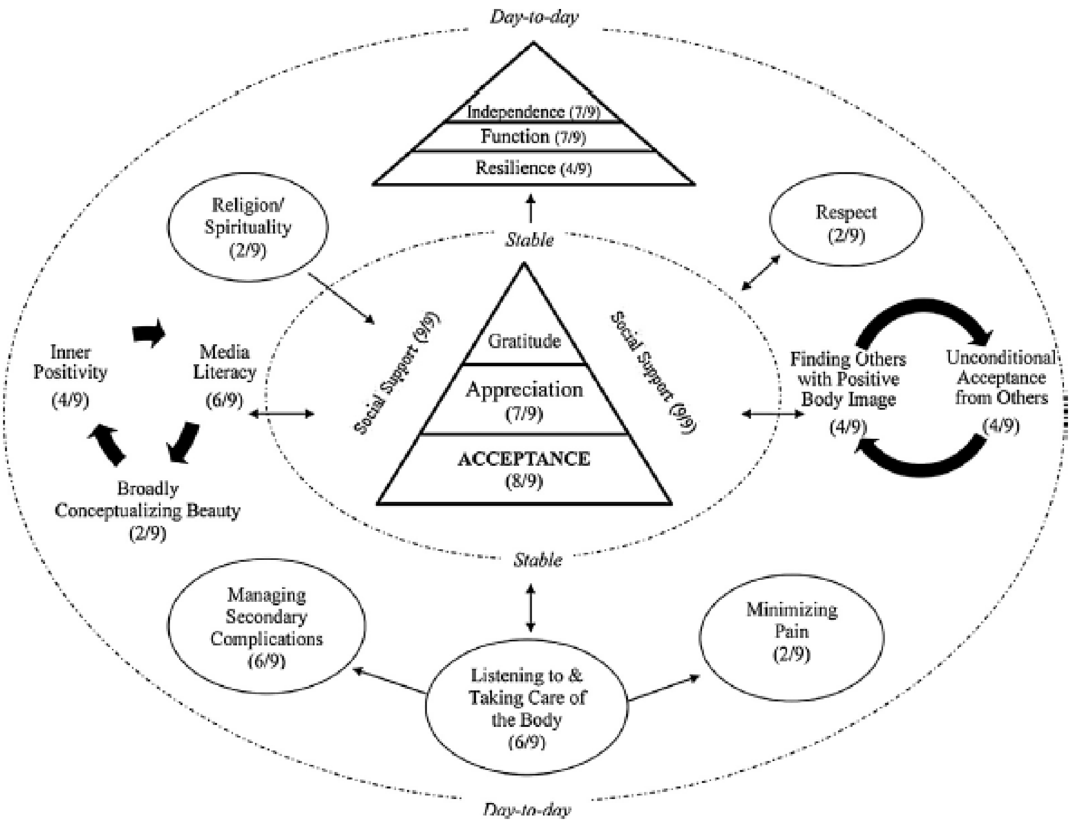


Figure 20: Preliminary positive body image model for people with SCI (Bailey et al, 2015, p28)

The above diagram highlights a number of categories that are said to impact positive body image for those living with a SCI, and the relationship between day-to-day factors and what helps to bring stability, with social support, gratitude, appreciation, and acceptance shown to have a direct relationship to the feeling of independence, and perception of functionality and resilience. Timely intervention with appropriate health care and support can assist in recovery and perception of situation and self (Bailey et al, 2015; WHO, 2013, online; Taleporos & McCabe, 2002), with learning positive behaviours and attitudes and having flexible beliefs, values and habits considered facilitators (Vasquez-Farinas & Rodriguez-Martin, 2021).

A large proportion of the population who have sustained a spinal injury endure pain for many years, if not permanently, following injury and gaining support at an early stage to better manage pain may prove beneficial, physically, and psychologically (Finnerup et al, 2016). The perception and management of chronic pain can impact an individual's self-body image, with pain acceptance being a consistent predictor to the negative or positive outlook (Markey, Dunaev & August, 2020). Thus, it is suggested, pain is an important consideration to not only manage the physical impact on mobility and functionality, but also the psychological challenges.

2.4.3 Pain management

As first highlighted during Chapter 2.2, pain is an indicator to the current state of our body (Woolf, 2010), in that immediate and short term (acute) pain advises something has happened, we need treatment or action, and to move away from what is harming us. Whereas, chronic (ongoing) pain can prove weary, even debilitating and impact quality of life (Collier, 2018), having a profound impact on an individual (Muller et al, 2022; Widerstrom-Noga et al, 2016; Boldt et al, 2014). Chronic pain normally occurs as a result of injury or disease, however it also stands alone as a separate condition (Mills, Nicolson & Smith, 2019), with approximately 18% of the global population currently being impacted by moderate to severe chronic pain (Scottish Intercolleglate Guidelines Network - SIGN, 2019), back pain is deemed a leading cause of disability and a significant global health problem (Feldman et al, 2017). In the UK, 80% of the population will at some stage in their life suffer from back pain (Muller et al, 2022; BackStrong, 2022, online), thus understanding pain and pain management, with chronic pain affecting between 33% and 50% of the population, thus up to 28million adults (Fayaz et al, 2015).

Ongoing, severe pain is common after sustaining a spinal cord injury, with approximately 80% of this population, the spinal community, experiencing neuropathic and / or musculoskeletal pain within the first year (Widerstrom-Noga et al, 2016), yet it remains complex to treat, and is highly subjective in experience (Collier, 2018; LaCapelle & Lavoie, 2014). A cure for chronic pain may be unlikely, however the negative impact on mood, function, and quality of life can be significantly reduced by appropriate pain management (SIGN, 2019), and as such in Scotland, the Scottish Service Model for Chronic Pain (Figure 21) has been developed for health professionals as guidance.

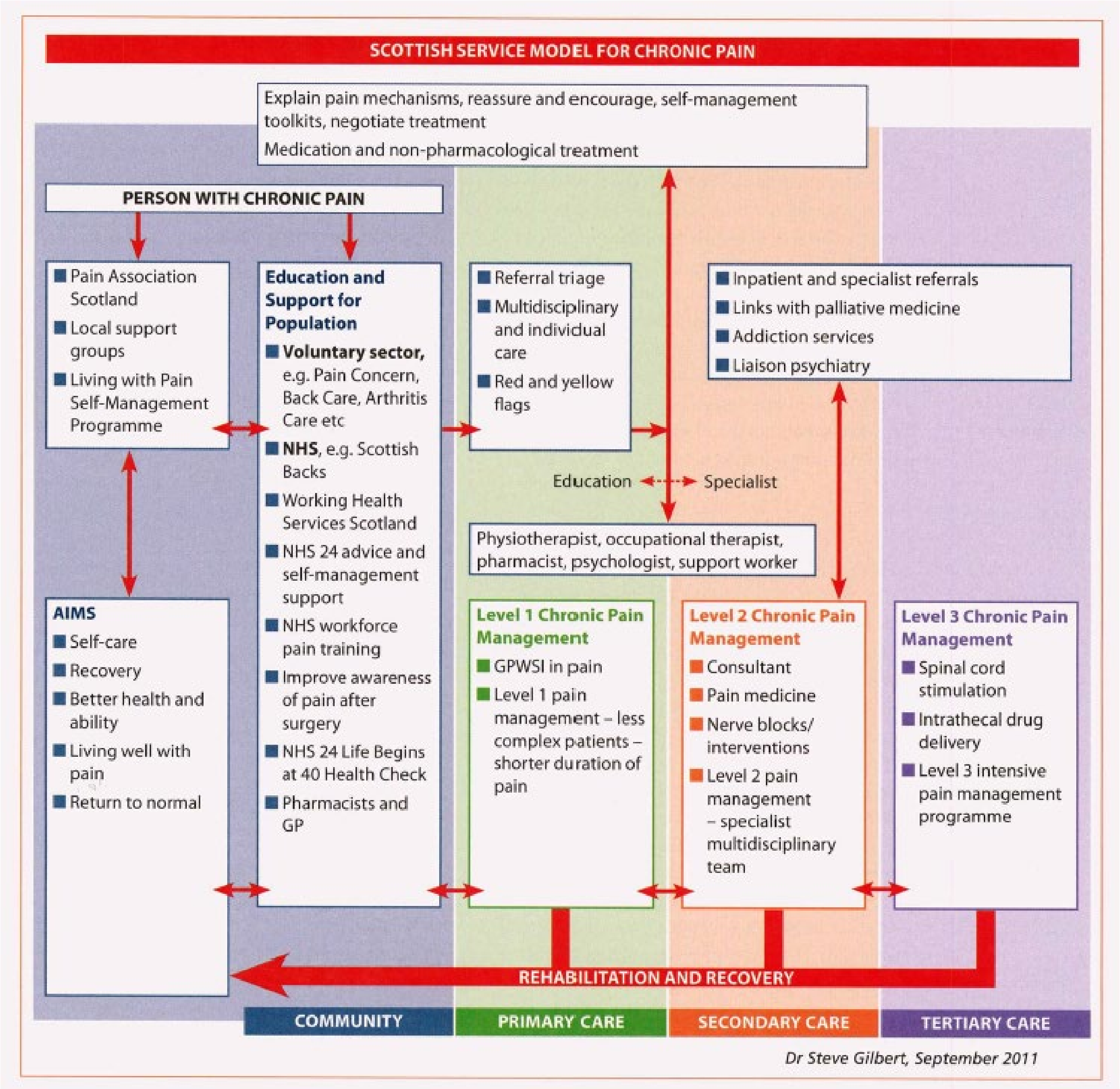


Figure 21: Scottish Service Model for Chronic Pain (NHS Education Scotland, 2011)

SIGN report (2019) states key clinical recommendations as offering pain management pathways, all of which involves assessment and planning of care, and the report highlights the following:

- **Self-management** – patients will be signposted to self-help resources as recommended by local health and pain services, and may be used from early stage of condition through to long-term pain management strategy.
- **Pharmacological management** – patients using pain relief medications should be reviewed at least annually, though more frequently if symptoms change.

- **Psychologically-based interventions** – patients may be referred to psychiatry, cognitive behavioural therapy (CBT), counsellor, mindfulness programs. Health professionals should also consider referring patients to dedicated pain management programs.
- **Physical therapies** – remaining active is the purpose of such therapy, and patients will be recommended to engage in exercise and exercise therapies, with options presented.

The waiting list to see a pain specialist is lengthy (NHS, 2023, online), to which these have been extended further due to a backlog as a result of the Covid pandemic. Engaging with chronic pain management services can help to improve quality of life and pain management itself, and to which should not just be prescription based, but multi-disciplinary, including physiotherapy and psychology (talking support) services (Gilbert et al, 2014). Chronic pain management services have been heavily criticised for not meeting the needs of patients, with priority action given by NHS to improve this (Health Improvement Scotland, 2020). As such, proactive pain management efforts between the non-specialist and patient may assist in the interim. However, a person's personal beliefs and attitudes surrounding their pain can impact how they cope, their outlook, and the likelihood of developing longer-term pain (Muller et al, 2022; Mills, Nicolson & Smith, 2019; Kindt et al, 2015), to which a combined physical and psychological treatment program can prove moderately effective (AlMazrou et al, 2020). Changing a person's attitude regarding their pain, and how they are perceiving and responding to it, can reduce level of pain (Chayadi and McConnell, 2019; Mills, Nicolson & Smith, 2019), and how disabled they will be by this (Caneiro et al, 2020). A recent study has further demonstrated the impact of the mind on pain, with positive psychology exercises said to be effective in reducing the intensity of pain beyond the effects of pharmacological treatment (Muller et al, 2022). However, it is important to also consider dominating fear-avoidance beliefs occurring as a result of back pain, with thoughts and emotions underpinning any concerns and fears about engaging in physical activity and the subsequent expected pain and perhaps further harm (Rainville et al, 2011). These fear-avoidance beliefs can be disproportionally strong, and impact day-to-day life, and restricting choice as a result.

As pain develops, emotional wellbeing can be impacted, leading to the likes of anxiety, which then reinforces the pain signals as the focus remains directed on pain, as does the mind (Collier, 2018), hence if an individual can learn how to change how they cope with pain mentally, they can improve their quality of life (Mills, Nicolson & Smith, 2019). Furthermore, if clinicians also explore their own beliefs and biases surrounding musculoskeletal pain, to which may be impacting clinical care, a deeper understanding and further assistance to the patient may be achieved, including examining behavioural change (Caneiro et al, 2020).

Understanding pain patterns, thought processes, perspective and behaviour can be helpful in assisting how to better manage (Kindt et al, 2015), thus tracking or using a diary to monitor pain levels and patterns can prove effective in better managing pain, as greater awareness of triggers is gained and as such, decisions can be made to avoid these (Charoenpol et al, 2019). Though for some, such focus may heighten the pain, rather than being distracted which has shown to give lower pain levels (Chayadi and McConnell, 2019). The timing of the onset of pain is another important consideration, with a resulting impact on psychological wellbeing, with neuropathic pain being experienced within the first 12 months from injury, and usually was persistent, whereas musculoskeletal pain being resolved where there is early onset or developing at a later stage (Finnerup et al, 2016).

Another consideration in pain management is using behaviour technique Neuro Linguistic Programming (NLP), as developed by Bandler and Grinder in the 1970s. NLP uses visual (sight), auditory (sound), kinesthetic (touch / feel) modalities as a way to reduce impact of thought and emotions (Bandler & Grinder, 1985). Although there are another two modalities, olfactory (taste) and gustatory (smell), these are not dominating factors and instead the initial three are deemed key in positively impacting how to change the viewpoint of the mind and ultimately the resulting sensations. A recent study examined and concluded the effectiveness of using NLP to reduce post-operative pain and increase the levels of comfort during recovery (Dogan & Saritas, 2021). Using what is considered a simple, calming technique, the perception of pain was altered by focusing on auditory, visual, and kinesthetic modalities. However, ethical considerations have been raised, highlighting the need for boundaries surrounding patient expectations, as well as impact on mental health (Kotera, Lieu & Aledeh, 2022). Further research is required in this area, however for the purpose of this research thesis, NLP is suggested as another form of pain management tool.

2.4.4 Diary entry vs. journalling

During the literature review, there have been mixed findings on reliability and importance of diary entries, depending on the health issue, to help those with varying invisible disabilities. For instance, Charoenpol et al (2019) highlight that pain diary entry from those with chronic non-cancer related pain saw a reduced level of intensity and improvement in moods in general. Yet, Ferrari et al (2013) have found diary entry tool to be less effective for those with acute back pain, drawing attention to the pain which in turn gives pain focus (Collier, 2018). However, although there have been mixed findings, such personal records richness of data is collected from diaries / journalling due to the duration of monitoring, and being able to ascertain change of behaviours, such as habits, attitudes, and beliefs (Flaherty, 2016).

Another written, reflective tool discussed in literature is ‘journalling’, however literature concerning this approach within qualitative research are scant (McGrath, 2016). Journalling is not highlighted in papers focusing on spinal conditions and injuries, instead any such written exercise is labelled diarising, or diary entries. Journalling has been detailed in academic research in the field of nursing (Blake, 2015; Epp, 2008), dental, education (Blake, 2015) and support work. To be clear, although diarising and journalling may be considered the same by many, however although indeed similar, there are differences. The main difference is diary entries tend to track day-to-day data collection including thoughts surrounding what has happened, whereas journalling captures thoughts, observations, experiences, hopes and aspirations, also may involve noting habits, behaviours and emotions (Crossman, 2021), as well as managing anxiety, reducing stress and coping with mental health challenges (Watson et al, 2022, online).

It is suggested the encouragement to journal will give understanding of the perceived challenges, and changes in wellbeing and activity choices, thus also allowing comparison of recovery stages. Over time, participants will also be able to recognise patterns and progress, as well as use as a reflective aide. Journalling is subjective, giving a personal viewpoint of life, and information shared by participants will be used as reference points in Chapter 4.

2.5 Chapter summary

This literature review has set the scene with consumption of physical activity, examining the walking spinal community, before researching coaching and mentoring as talking support, followed by literature review surround the WSC's behavioural psychology in terms behavioural change and motivations, ultimately the field this research sits within. It has revealed the depth of relevant research relating to people with spinal cord injuries (permanent neurological damage is experienced, which in turn has impacted mobility), however, highlights there is limited yet growing literature focusing on the WSC, and remains an area that is either overlooked or has perhaps not been understood to see the importance of this community and how they can be better supported following a traumatic injury. Despite having varying levels of mobility, essentially the WSC can walk to varying levels, and is suggested this population is overlooked as a result.

A number of key points have been raised during the literature review:

- Behaviour and motivations are driving elements of what become decisions, outcomes, change, and consequences.
- COM-B (West & Michie, 2020) and TTM (Ferron & Massa, 2013; Prochaska, DiClemente & Norcross, 1992) models when referred in relation to the WSC give greater understanding of what may be considered challenges, barriers, and opportunities to behavioural change. A conceptual matrix is suggested to explore further, underpinned by the data analysis of this study.
- There is a lack of recorded information as to the size of WSC in Scotland, and as such engagement in understanding the needs and ability to consume services and products post injury.
- There are tangible impacts of injury with regards to the emotional and psychological sides (pre- and post-injury life) in relation to physical activity.

- Sustaining a spinal injury impacts mental health, and has high likelihood of impacting behaviour and general wellbeing.
- There is limited academic papers surrounding coaching and mentoring as talking support in relation to those with spinal injury community, in particular to those with walking ability.
- Coaching and mentoring studies relating to spinal injuries tend to look at one or the other, as opposed to a study reflecting on both talking supports.
- There is a lack of literature giving understanding to the WSC's engagement in physical activity, how to overcome perceived hurdles, and to gives a greater opportunity to participate.

Existing literature has a dominant focus on those who have sustained spinal injuries and a level of paralysis, as opposed to those who have sustained a spinal injury and can still walk. However, where research has focused on the latter, focus has been on rehabilitation, physical activity experiences and pain barriers, but literature to date leaves a gap in knowledge with regards to the impact coaching and mentoring have as talking support to the WSC, and understanding the WSC's behaviours and motivations to being active, as opposed to the activity experience itself. As such, the literature review has identified gaps in knowledge, and has helped to form the aim of this research: to critically evaluate the impact coaching and mentoring has on the WSC's behavioural change and motivation to being physically active.

2.6 Development of research questions

As a result of the literature review, the following research questions have been developed with the purpose of examining and evaluating the WSC behavioural psychology, specifically behavioural change and motivation, surrounding engaging in physical activity, and the impact coaching and mentoring has as a support mechanism:

- **Research Question 1:** To what extent are coaching and mentoring effective platforms for talking support for the WSC?
- **Research Question 2:** What are the key factors regarding impact of sustaining a spinal condition?

- **Research Question 3:** To what extent does WSC's behaviours and motivations impact participation in physical activity?
- **Research Question 4:** To what extent does having a trusted support network impact the WSC's activity levels?

Questionnaire questions and prompts

Furthermore, this literature review has highlighted areas to consider as part of this research, those that give greater understanding to the overall purpose, and to which will help to answer the above research questions. These areas include the impact coaching / mentoring as talking support has on the WSC, managing change, perception of physical and psychological abilities, motivational factors and influencers, outlook on life, support network, wellbeing, and the opportunity to engage in activity (Simpson et al, 2020). See Chapter 3.

Chapter 3.0

Research Philosophy and Methodology

3.0 Introduction

This chapter discusses the considered and chosen research approaches, as well as the methodology underpinning this research, giving understanding to the strategy, philosophy, and methodological research design to best achieve the research aim of critically evaluating *"the impact coaching and mentoring has on Walking Spinal Community's behavioural change and motivations to being physically active".*

The following sub chapters explain the reasoning for choosing an interpretivist philosophical approach, to which drives the inductive research, giving a flow from focused, specific observations, patterns, to tentative generalised hypothesis and theory (Burney & Saleem, 2008). The following also discusses ethical considerations, and addresses reliability, validity, and any bias of data, to which reflexive thematic analysis has been applied (Braun & Clarke, 2018).

3.1 Research philosophy and design

Research philosophy refers "to the system of beliefs and assumptions about the development of knowledge" (Saunders, Lewis & Thornhill, 2019, p130), and is "a set of beliefs or metaphysics that represent your world view" (Stainton, 2022, online), to which ontology, epistemology and axiology address the unspoken assumptions and are as such considered for each philosophical approach. The set of beliefs or perception is known as a paradigm, the way in which a person thinks about a subject area or worldview (Killam, 2013).

Ontology is the area of philosophy that studies the reality of the nature of human beings' existence in society and generally, the world (Hudson & Ozanne, 1988). Questions posed consider the influences surrounding decisions and actions, whether made solely and / or if others play a factor in decisions, ideologies, beliefs (Lyon, 2017). The individual and group dynamics are examined, and ontological assumptions can become apparent through the focus on people themselves. Ontology examines underlying belief systems, and brings understanding to philosophical assumptions about the nature of reality (Kivunja & Kuyini, 2017).

Epistemology is a branch of philosophy that studies the knowledge or 'knowing', and allows a deeper examination to question said knowledge, as is embedded in theoretical perspective (Moon et al, 2021; Al-Ababneh, 2020; Lyon, 2017). Examples of questions posed include "what is knowledge?", "what do people know?", "what is the basis of this knowledge?" There are different positions presented, one being knowledge is already out there waiting to be discovered, another being knowledge is gained through experience and perceptions, and thirdly, knowledge is a social construction, created and accepted as knowledge (Lyon, 2017), all of which sharing the ideology of questioning the knowledge base (Moon et al, 2021). Another is that knowledge comes through the interaction between people and objects (Crotty, 1998). An example of an epistemological issue is the first-hand experience which in turn gives far deeper understanding of a subject matter. Although an ethnographic standpoint can be offered as part of epistemology, and is one of many qualitative approaches where the researcher becomes immersed in native populations to more deeply learn about people (Jones & Smith, 2017), ethnography does not apply to this research as individuals are not being observed in their natural home and life, instead semi-structured interviews are the source of information and data for the purposes of collecting data relation to social and behavioural aspects. Essentially, epistemology involves knowledge on a subject matter and, necessarily, a certain understanding and indeed depth of what that knowledge entails (Al-Saadi, 2014).

Axiology is a brand of philosophy that studies values and goals, as in what values are perhaps guiding the research, and what are the values that become apparent as an outcome of the research, which in turn affect the research itself (Dudovskiy, 2022, online). Axiology is also important in determining goals and objectives of research, with researchers needing to be clear about the values that motivate the study, whilst also be mindful of ethical considerations (Yulianto, 2021).

These areas are discussed further below.

3.1.1 Determining the philosophical strategic route - interpretivism vs. pragmatism

Initially, both Interpretivism and Pragmatism were considered as underpinning philosophies for this research, where the latter would have guided towards a mixed methods research, and would offer the opportunity to explore concepts from different viewpoints, combining both constructivism and objectivism philosophies, where social factors can be examined in a balanced way. Saunders, Lewis & Thornhill (2019) state objectivism is based on the principle that the social phenomena are known and allows for looking at the meanings these have on social factors, and constructivism is essentially the opposite, whereby the social factors are said to be the force that create the social phenomena. Therefore, Pragmatism would allow both sides to be used and developed as part of the research, which looks at both the injury as sustained by a trauma and the social, emotional, and psychological aspects.

However, given the study area and objectives, it was decided that the philosophy of Interpretivism underpinned this particular research. Meaning is sought, and subjective truth, views, and knowledge are applied (Ryan, 2018; Morrow, 2005), and the purpose of interpretivism is to create new understandings, greater depth, richer in material with interpretations of the social worlds and human perceptions (Saunders, Lewis & Thornhill, 2019; Goldkuhl, 2017). However, as highlighted by Stainton (2022, online), due to the nature of being subjective, interpretivism data cannot be stated as true but as a perception from an individual, their truth from their viewpoint. Yet, in relation to this research study, by the nature of gaining data on personal perspective and lived experiences (Sweet et al, 2021; Kattari et al, 2018), a greater understanding of the Walking Spinal Community (WSC) can be created. Due to the subjective nature, the researcher must remain aware of personal views, be vigilant of any bias, and approach the research with open mind (Creswell & Creswell, 2018) (Chapter 3.6).

An interpretivist approach can be considered as social research, as it examines many personal aspects, including in relation to this study, perceptions, thoughts and feelings, decisions, motivations, behaviours, and resulting wellbeing of those in the WSC (Alharahsheh & Pius, 2020; Corbin & Strauss, 2015; Clough &

Nutbrown, 2012), and adopts a qualitative methodology. Semi-structured interviews are generally undertaken, as well as the observations of the participants, including examining language and perception used throughout. Interpretivism considers individuals as complex (Thompson, 2015, online), with multiple realities (Hudson & Ozanne, 1998) each having their own experiences, thoughts, and perspectives to their reality of situations and life, thus viewpoints are subjective, and not scientific based (Creswell & Creswell, 2018). Knowledge and truth are subjective and based on experiences, perceptions, and understanding (Ryan, 2018), yet are important to capture (Eriksson & Kovalainen, 2015), whilst also being aware of any bias, acknowledging and detaching it from the research as part of reflexive practice (Braun & Clarke, 2019).

The below table gives understanding to the correlation between interpretivism with ontology, epistemology, and axiology, with the following figure showing the inter-relationship of all four areas to which underpin the philosophy.

Ontology (nature of reality or being)	**Epistemology (what constitutes acceptable knowledge)**	**Axiology (role of values)**	**Typical methods**
-Complex, rich. -Socially constructed through culture & language. -Multiple meanings, interpretations, realities. -Flux of process, experiences, practices.	-Theories and concepts too simplistic. -Focus on narratives, stories, perceptions, and interpretations. -New understandings and worldviews as contribution.	-Value-bound research. -Researchers are part of what is researched, subjective. -Researcher interpretations key to contributions. -Research reflexive.	-Typically, inductive. Small samples, in-depth investigations, qualitative methods of analysis, but a range of data can be interpretated.

Table 6: Interpretivism*, as taken from Chapter 4.4: Five Management Philosophies (p144-146, Research Methods for Business Students,* Saunders, Lewis & Thornhill*, 2019)*

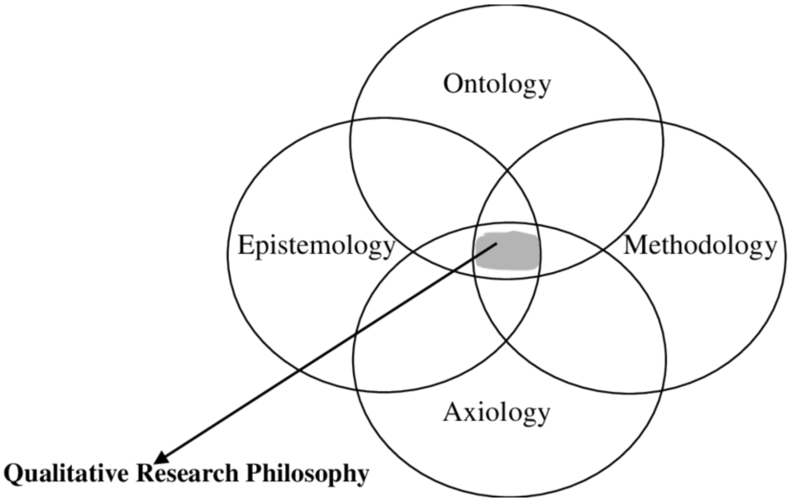


Figure 22: relationship between ontology, epistemology, axiology, and methodology (Aldawood & Day, 2017, p19)

Throughout the literature review for this research, qualitative approach was the preferred approach, offering the more in-depth, open answers responses, thus allowing personal perspective rather than closed reference points, enabling rich data from the interviews with participants. The methodology applied to this research is shown in the following outline of research process:

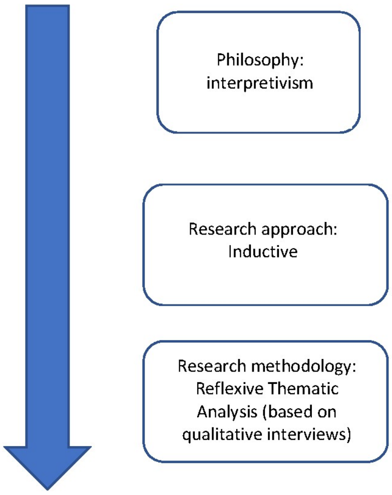


Figure 23: Research process (Author, 2022)

With regards to this research area, the paradigm of interpretivism enables deeper conversations and understanding to be achieved, where focus is on perception of quality of life pre- and post-injury, motivation and behaviours surrounding physical activity (Williamson et al, 2020), as well as the perception of talking support as part of recovery and moving forward (Xu et al, 2021; Caponnetta et al, 2021). There is no right or wrong to someone's experiences, it is their own personal view and therefore, subjective (Alharahsheh & Pius, 2020; Corbin & Strauss, 2015), and gives understanding to decisions, barriers, attitudes and change processes, all impacting quality of life, and ultimately health and wellbeing (Lieberman, 2022).

3.1.1.2 Further considerations

The author examined several methodological approaches in addition to interpretivism and pragmatism as discussed above, with the following table highlighting further considerations of ethnography, grounded theory, and phenomenology. Furthermore, the qualitative data analysis approaches of Reflexive Thematic Analysis (R-TA) and Interpretative Phenomenological Analysis (IPA) were examined carefully, before making the decision on what has already been highlighted as a qualitative, interpretative approach, using R-TA as the chosen data analysis approach. The following table highlights the overview of each.

	Overview	**Limitations**
Ethnography	First-hand observation of the field / subject area is used to then assist in analysis human behaviour; group observation and interactions are noted; commonly used in cultural and societal studies; enables a voice to be given to a group or representative of culture (Grossoehme, 2015)	Relies on direct observation over a longer period of time; greater opportunity for bias and influence from others due to the subjective nature of viewing a small group; requires extensive training and time commitment; researcher immerses into the group and data, and can trigger emotional challenges (Jones & Smith, 2017).
Grounded Theory	Focuses on language used, behaviour shown and social process; can assist where homogenous sampling is applied; studied in the environments as to where they take place. (Starks & Trinidad, 2007)	Procedures are considered more complex and less clear (Stern, 2022); varying versions of grounded theory makes process challenging (Chun Tie, Birks & Francis, 2019); can be time heavy; line-by-line coding; more suited where research questions focuses on social process (Hassan, 2022).
Phenomenology	Searching for and gives understanding and meaning of a phenomenon; the study of experience, thoughts, and perception (Van Manen, 2017);	May not be as helpful where generalisations are to be made from the data (Grossoehme, 2015); describes rather than explains; data analysis can be

	gathers data to contribute to new theories; a variation of interpretivism (Dudovskiy, 2022)	complex and misunderstood (Van Manen, 2017).
Reflexive Thematic Analysis (R-TA)	Involves first generating codes to which themes are later developed, identifying patters of shared meaning; subjective process; can be considered as belonging to phenomenological or experiential qualitative research, but stands in its own right; assists in exploring and interpretating data and telling story about patterns of meaning; promotes trustworthiness due to reflexivity of researchers own potential bias (Braun & Clarke, 2018).	Themes are generated by the researcher, thus any bias must be addressed and removed (Crowther & Grecic, 2022); the 6-steps must be followed to ensure a thorough R-TA process has been followed; subjective in nature (Braun & Clarke, 2019).
Interpretative Phenomenological Analysis (IPA)	Dual analytic focus (thematic and idiographic); procedure includes detailed analysis of each case before developing themes across the cases (Braun & Clark, 2013); enables understanding of the experience; findings can influence and contribute to theory for research and practice; research subjectivity is fundamental resource as with R-TA; focus on use of language (Smith & Osborn, 2015).	Ambiguous, lacking standardisation, mostly descriptive; involves interpretating experiences and therefore not provide a generalised viewpoint; usually applied to homogenous sampling; interpretation of how language is used gives assumption to thoughts and feelings (Willig, 2013); small sample group (up to 10, according to Smith & Fieldsend, 2021) subjective in nature.

Table 7: Further considerations

As the above demonstrates, several methodology options in relation to qualitative analytic approaches were considered, and the author was mindful of there not being just one option. In relation to methodology, Ethnography is not applicable to this study as the three groups of participants would not be observed in their natural homes / places of living and working, instead rich data would be gathered during the Phases of collection, as highlighted in Chapter 1 and again later in this chapter. Grounded Theory was viewed as not offering an approach conducive to having heterogeneous sampling and aligned to the research questions to be asked, and thus was discounted. Although Phenomenology was considered as a solid methodological option, its variation of interpretivism was decided upon as being a stronger option, as discussed previously, and to is considered as inspired by phenomenology but is not phenomenological methodology (Van Menan, 2017), but can assist in capturing rich data of participants' experiences, thoughts, emotions, and outlook could be explored, captured and analysed to give greater depth of understanding to this subject area, thus each participants’ perception of reality (Anderson Hudson & Ozanne, 1988). This methodological approach is also applied by other similar studies (Cogley et al, 2021; De Leo et al, 2021; Sweet et al, 2021; Jannings & Pryor, 2012).

With regards to data analysis approach, IPA was discounted as although this approach assists in interpretating lived experiences (Smith & Fieldsend, 2021), it uses both thematic and idiographic approach, therefore looking at data collected across the sample as well as focusing on unique information as shared by each participant (Braun & Clarke, 2020). There is greater focus on language, and assumptions are made on meaning, feelings, and emotions of those in a particular group, as opposed to allowing the data to lead the information. That said, IPA is useful when examining highly emotive, complex subject matters (Smith & Osborn, 2015), and psychology studies are seeing increase in IPA being used.

As such, the decision of using Reflexive Thematic Analysis (R-TA) (Braun & Clarke, 2018) was based on what was decided to best to deliver the study’s purpose, and ensuring alignment of theoretical assumptions, research design as well as the research questions and methods (Braun & Clarke, 2020). Furthermore, the decision to choose R-TA approach is also reflective of similar qualitative studies within the realms of spinal injury (Cogley et al, 2021; Rees, Sherwood & Shields, 2021), as well as coaching and psychology (Crowther & Grecic, 2022; Leeder, Russell & Beaumont, 2022), to which R-TA is commonly applied.

Reflexive thematic analysis has assisted in giving a true voice to the WSC, whilst exploring their lived experiences, emotions, and perceptions (Rees, Sherwood & Shields, 2021; Smith & Fieldsend, 2021; Kattari et al, 2018), with focus given to behavioural change with regards to being physically active. As a researcher, values and beliefs may influence the collection and interpretation of data, and any bias should be addressed (Ryan, 2018), and trustworthiness of data safeguarded (Morrow, 2005). In order to build rapport, trust and understanding, the author shared about their own spinal injury history prior to interview sessions (Tufford & Newman, 2010), establishing a connection to the research and participant, whilst also acknowledging and recognising the need for care surrounding bias (Kattari et al, 2018; Fischer, 2009; Morrow, 2005). Bias is discussed in Chapter 3.6.

3.1.2 Inductive research approach

This research, as discussed earlier in the chapter, has chosen an interpretivist philosophical approach, to which inductive research has been applied, offering a process from focused, specific observations, and patterns, to tentative generalised hypothesis / theory and suggested theory (Streefkerk, 2019; Burney & Saleem, 2008). This approach allowed the data to lead towards theory, as opposed to entering this with pre-conceived notions. Furthermore, reflexive thematic analysis in relation to inductive research is more common than in the use with deductive research, and due to the nature of reflexive thematic analysis, the process has more flexibility and adaptability (Braun & Clarke, 2021; Braun & Clark, 2019).

To illustrate the methods and process applied, the following diagram (Figure 24) is used as a guide in giving the following illustrative process of inductive reasoning – this is purely for demonstration purposes, with accompanying example being: Step one, the specific observations or hypothesis put forward as a result of initial data gathering may be talking therapy (coaching and mentoring) has a direct resultant factor to the behaviour someone in the WSC has in relation to being physically active. Step two, patterns included short-term optimism, motivation, activity level and mental health, as a result of engaging in the talking support. Step three, a general conclusion, shared as an example to illustrate this process only, could be the type of talking therapy has a direct impact on activity levels for a period of time.

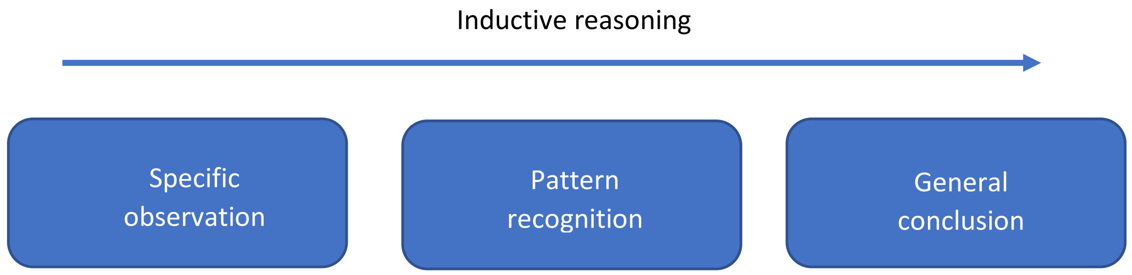


Figure 24: Inductive reasoning

Semi-structured interviews were undertaken with the WSC participants in both Phases One and Two, with the latter giving greater opportunity for open, unhindered discussions, and to where the rich data was predominantly gathered (see Chapter 3.2). Participants formed the heterogeneous sampling of three groupings – Mentees, Coachees, and Neutrals, with all involved in Phase Two (neutrals did not participate in the first as they did not undertake a talking program). Reflexive thematic analysis was applied to the data, where coding and themes were developed as a result of the collected data (Braun & Clarke, 2018), and both Nvivo software and manual interpretation were applied, with cross-checking by a member of the supervisory team, ensuring rigour of research (Guba & Lincoln, 1982). Discussions of results and conclusions follow in Chapter 4 and 5.

3.2 Qualitative methods

This chapter discusses the qualitative methods as applied in this research, to which has been chosen as it is an approach for understanding human or social problems, whether as individuals or groups, with the resulting data being subjective, and is accepted as a collection of individual meaning and perceptions, and highlights the complexity of the research area (Creswell, 2014). For this study, inductive methodologies are used, giving a bottom-up approach to the data, allowing the data to determine themes, and having no preconceived ideas but are open to what the data reveals (Braun & Clarke, 2018; Braun & Clarke, 2006).

Literature review of relevant studies and research papers (Charoenpol et al, 2019; Williams et al, 2014; Ferrari & Louw, 2013; Stephens et al, 2012) has revealed a preference for either qualitative or mixed methodology, with the former providing a more personal, in-depth conversation, with semi-structured interviews, including open questions where appropriate, and enabling common themes being identified. On reviewing the material, it has been surmised mixed methodology enables greater understanding with a larger pool of participants, yet qualitative offers depth from a small number of participants, and overall, there is a stronger bias in this research field towards qualitative approach.

As already highlighted in Chapter 2, research reviewed to date shows a gap in the understanding of the WSC, as focus has been given to the 'complete' SCI conditions, which involves varying degrees of paralysis due to the level of the spinal cord damage. However, despite not having an accurate figure of the size of the WSC (NHS Scotland, 2019), and to which this research has proposed a way to calculate this (Chapter 2.2.2), it is suggested this research and its methodology will give a greater understanding of the impact of such injuries to their behaviour, something that can be changed and better managed in future.

Each participant of this research was interviewed as an individual, regardless of any common themes, with much care given to avoid any prejudice and bias, and be respectful of each person's circumstances and health (Kattari et al, 2018; Dattilo & Smith, 1990). The sample population criteria remained consistent throughout the research – adults who have suffered a spinal injury as a result of a trauma, and having walking ability, ie. they are part of what has been known in this research as the WSC, and to which the literature tenders to instead focus on spinal cord injury where paralysis is present.

Phases One and Two

The qualitative data-led approach of this research involves two phases, to which there is a distinct approach:

Phase One consisted of semi-structured interviews (Chapter 3.2.2), combining questions to be rated but also encouragement given to provide greater details and discussions (Creswell, 2007) during each early stage interview. These interviews took place at the start and end of the talking support programs, as a way to gain insights and data to the experience of coaching and mentoring, and provide descriptive statistics and overview. The purpose of Phase One was to provide a basis of comparison from the start to end of the program, and to ensure consistency of collecting this early data, as this involves the author (who has direct contact with coachees throughout) and third party BackUp (the organisation delivering the mentoring program, see Chapters 3.2.8 and 3.6).

Phase Two consisted of the main follow-up interviews (Gassaway, 2017), to which the author had direct contact with all participants and where rich data was gathered. The initial Phase One interview questions were asked again to assist in benchmarking early stage data with thoughts, experiences, and emotions also shared, whilst Phase Two enabled semi-to-unstructured interviews to take place, each participant therefore able to give a true, unhindered voice and not also be filtered through third party interaction. Essentially, participants were given the freedom to share their lived experiences with the aim of gaining in-depth insights. This phase took place after a period of at least three months having completed the mentoring or coaching program, as well as the encouragement of journalling (Crossman, 2021) from the coaching participants, which assisted in highlighting behaviours, impact, and enabling further rich data during the discussions (Flaherty, 2016).

Neutral group were not part of the full process as they had not undertaken initial coaching or mentoring programs to date, thus could not be asked for a three-month follow-up to their program. Instead, the participants within this group took part by completing the full questions of Q1-13, therefore answered all the same questions as coachees and mentees based on their own experiences and perception, and with the semi-to-open structure of Phase Two. Neutrals were also offered a complimentary coaching session as a thank you for taking part in the study, to which they could also reflect and share regarding this support. An offering of thank you for participating is common practice, and varies in offer, from service to a small monetary donation (Shaw et al, 2018; Beauchamp et al, 2015). During Neutral group's coaching sessions, again journalling was discussed, and the positive impact it may have, keeping consistency with the other groups. Neutrals were also invited to share follow-up feedback, where they could reflect on the interview, discussions, the complimentary coaching session and any changes that have occurred from interview to feedback. A detailed discussion on research method follows.

As discussed in Chapter 2.4.4, diary entering is more commonly highlighted as a writing tool (Charoenpol et al, 2019; Collier, 2018), with journalling not mentioned in relation to the walking spinal community but instead in fields such as nursing and support work (Blake, 2015). Journalling is a way in which someone can reflect with honest voice, discharge pent-up emotions and make sense of life situations, and improves health and wellbeing (Dimitroff et al, 2016), and is a way of capturing thoughts, emotions, patterns and behaviours (Crossman, 2021), and with many associated health benefits, including reducing stress (Watson et al, 2022, online), enhanced immune function and decrease depressive symptoms (Dimitroff et al, 2016). For consistency of journalling with both the coaching and mentoring participants, each person was encouraged to introduce the practice during the interviewing stages, as well as life beyond, giving explanation as to why this commitment to practice was to be invested in. Furthermore, as author and researcher, reflexive writing practices were also applied (Braun & Clarke, 2013), whereby notes were taken during the interviews, recording emotions, body language, additional discussions that sit outwith the research area, observations on topic information shared, as well as notes as to relevance to the study, learnings, insights, and the overall experience.

Each participant in the Pilot Study (see Chapter 3.2.5) were asked to give permission to a Zoom / Teams / Whatsapp video or phone call interview and asked if it could be recorded, or if they preferred notes and quotations to be taken, whereby their notes would be reviewed and agreed thereafter. At no time was recording pushed or enforced, with health and wellbeing of the participant always being a priority, especially as the nature of the topic being discussed was likely to be emotive for some. All participants were given the option to, and declined, recording of the interview, with the overall view being that the topic was a very personal one and did not wish to be recorded. The responses were already understood as a possibility as part of the research into methodology, and where a discussion of sensitive matter can be unsettling, distracting and trigger anxiety (Rutakumwa, et al, 2020; Gossman & Miller, 2012). However, to test this, it was important to ask Pilot Study participants if they would give permission, as this would help to set the approach surrounding recordings for the Live Study (see Chapter 3.2.7).

3.2.1 Case for semi-structured interviews

Semi-structured interviews are not unique to qualitative research, as they are also used in quantitative and mixed research approaches, and has evolved since the 1990s from research strategy to a standalone method (McIntosh & Morse, 2015). However, the format is common in qualitative research, and gives deep, rich understanding of the area (Creswell, 2014), with one-to-one interviews providing an environment more conducive to discussion matters of a more sensitive nature that an individual does not wish to talk about in front of others (De La Croix, Barrett & Stenfors, 2018). This format enables flexibility whereby the researcher will ask participants questions to collect data in a manner that is flowing, interactive thus avoiding transactional, and explore thoughts, emotions, perceptions, and experiences on the subject matter (Eriksson & Kovolainen, 2015; Clough & Nutbrown, 2012), which may be sensitive in nature (DeJonkeheere & Vaugh, 2019). It is for this reason that qualitative research and semi-structured interviews have been used, as there is a gap in literature with regards to the WSC in general, and certainly in understanding the impact talking support of coaching and mentoring has on behaviours and motivations within the WSC to engage in physical activity. This is an emotive subject area due to the spinal injuries / conditions endured, and life-changing impact, thus semi-structured interviews offer a way to ascertain perceptions, attitudes and influencing factors to give depth of understanding to a complex matter, and create an environment where participants feel more comfortable to speak more openly (Bailey et al, 2015). To gain a balanced view of the two talking support approaches, participants include those who have undertaken Mentoring and Coaching programs, as well as those who did not ('Neutrals').

Given the nature of this study's research topic, and understanding the research methodology by other authors (Cadematori et al, 2021; Hoffmann et al, 2019; Shaw et al, 2018; Skeels et al, 2017), qualitative research with semi-structured interviews were favoured, thus enabling flexibility of structure, and involves emerging questions, data analysis that is inductively building particulars from observation and patterns (Goldkuhl, 2012), to general themes (Braun & Clarke, 2018). It would not be feasible or effective to have participants be present in a group setting, to discuss such a sensitive matter in front of one another (Bullock, 2016), therefore interviews on a personal basis was the chosen route.

Considerable care was taken to not influence the participants with any possible personal bias (see Chapter 3.6), and expected time required to undertake preparation, engagement, interviews, and transcriptions was amended, as it became far more time-consuming than expected, something that is common with qualitative research (Blaxter, Hughes & Tight, 2015). However, the time taken allowed further questions to be asked based on the answers given, to gain deeper understanding of the subject matters (Ryan, Couglan & Cronin, 2019), and to be able to engage with each participant on a personal level, giving a safe environment to discuss such sensitive matters (Doody & Noonan, 2013).

3.2.2 Sampling

Sampling involves taking a portion of a population, as a subset representing the larger population (Acharya et al, 2013), and for the purpose of this research, that sample is within the WSC. However, the sampling technique of purposive non-probability sampling, also known as judgement sampling, has been applied, whereby the choice of participant is deliberate, based on qualities they possess (Etikan et al, 2016; Alkassim & Tran, 2015). In relation to this thesis, the participants have been chosen whereby they fit with the clear direction of the research and there are key criteria that must be met to participate in the study, and as such, not everyone within the WSC have an equal opportunity to participate within the study.

This research does not focus on the very early stages post-injury, but instead, at least 12 months after the accident / incident that has resulted in the spinal injury, and any initial hospital discharge is also at least 12 months prior. The purpose of this is that for there to be lower risk of raw emotions, as well as being able to assess physical participation. All adults were asked date of injury to ensure at least 12 months have passed, and to understand timelapse since the injury, giving understanding to information shared. This timeline is given to protect the vulnerability and mental health of the individual following a traumatic accident (Williams & Murray, 2015), although the feeling of physical and / or psychological vulnerability could be long term or lifelong (Bryant et al, 2015; Angel, 2010). The participating adults are all living back at home, and adapting to their new life, and ideally, less emotive about the injury itself though, of course, time does not necessarily mean less emotions. Some of the WSC remained under medical care, such as physiotherapy and reviews with their consultant. However, participants were not asked invasive questions beyond the remit of what is required for this research.

Anyone who came forward as a potential research participant and was under the 12-month minimal timeline were politely declined from the study. It has been considered imperative to this research that there has been time to allow for physical recovery, safeguard vulnerability and mental health, and the potential for physical activity to be part of their life again (Williams et al, 2014).

As such, as part of the research methodology, it was decided candidates / participants must adhere to certain criteria:

- Participants must have sustained a spinal injury as a result of an incident / trauma (eg. car accident, sports incident, fall).
- Age group – must be over 18 years.
- Spinal injury occurred at least 12 months prior to interviews.
- Participants must be based in the UK.
- Participants must form one of three groupings – those who have received mentoring (Mentees), those who have received coaching (Coachees), those who have received to talking therapy support (Neutrals), with the groupings highlighted as important as a result of the Pilot study (see Chapter 3.2.5).
- Participants must be willing to engage in 10-session program, though are not contracted to complete all 10 sessions (note, the mentoring duration cannot be controlled).
- Participants were physically active prior to the said injury.
- Participants are willing to discuss physical activity engagement and changes as a result of said spinal injury / condition.
- Participants are willing to discuss perception of life now and in the future.

The purposive sampling method has applied maximum variation sampling, also known as "heterogeneous sampling", and as mentioned above, has involved selecting candidates / participants who relate to the topic and who fit the above criteria, as identified to suit the purpose and objectives of the study (Etikan et al, 2015). Furthermore, having population samples that are split into Mentees, Coachees, and Neutrals is different from the approach found as part of the literature review, which tends to look at only coaching and mentoring separately (Cadematori et al, 2021; Beauchamp et al, 2015), thus no comparison between the type of talking support could take place, or better understanding as to what would perhaps be a more effective source of support, in particular following a spinal injury.

To give clarification at this stage, Mentees and Coachees engaged in distinct talking support programs. Those who participated in a mentoring program were led by a mentor who has gone through something similar and who has received BackUp's training and is now a volunteer BackUp mentor. The mentee is 'matched' through BackUp's system, and the mentee is offered up to 10 sessions (usually by phone, though option of video call is possible, with the choice being an agreement between mentor and mentee, but BackUp do not keep a log of communication option). The mentoring partnership can be stopped at any point by either party. Timeline of sessions is dependent on mentor and mentee. BackUp is discussed in detail separately in Chapter 3.2.8.

Coachees were offered a 10-session program with the author, an experienced, qualified coach, to which the sessions were always delivered via video link, with coachees being asked to commit to the full block of sessions and ensure a timeline is planned and adhered to. The variation between the two different approaches was due to organisational protocols, and experience as to what works best for the particular talking support. Thus, the author had no influence on BackUp's mentoring program approach, and used experience to deliver effective coaching program, to which commitment to a coaching program is always requested. This request for commitment enabled the discussion from the outset with coachees about expectations, their hope of outcome from the sessions, and an agreement on approach.

Reaching potential WSC candidates was a challenge as there is not one central place to reach through medical outlets or via social media, instead there is a scattering of support groups, charities, and networks. Candidates became aware of the study through marketing activities from author via social media, university contacts, medical contacts, as well as through charity BackUp, to which offers mentoring for WSC. All candidates were asked to contact the research lead, who is the author of this thesis, to apply to participate, and receive a summary, providing a brief understanding of what would be involved (see Appendix 3).

Furthermore, considerations taken into account as to those participating in the research include:

- Where each participant was in their recovery journey, allowing for pre- and post-trauma comparisons, and at least one year post trauma.

- The participant / candidate must in a good place mentally, able to talk about the relevant aspects of their journey.
- Open questions, allowing for greater detail to be shared and the opportunity to find common themes regarding perceptions and behaviours.
- Closed, rating questions will also encourage feedback and discussions during the interviews.
- Flexibility to the order of questions, ensuring flow and relaxed conversation.
- Wording of questions to be tested in a pilot study with up to two participants, ensuring the qualitative research has maximum impact.
- The ability to accurately assess pre and post changes.
- Emotions of the subject being interviewed must be considered at all stages.

Coachees who wished to participate in the coaching program and research stages had direct contact with author / researcher from the outset. Mentees who wished to participate in the study had to follow charity protocol, going through third party BackUp, as it was this team that would lead the mentoring sessions / program, and then the mentee would have direct contact with the author thereafter.

With regards to the qualitative research stage, whereby coaching and mentoring programs have taken place and now complete, email and / or discussion via telephone / video call were used to arrange the interview to ensure participation by each person was appropriate, and wellbeing was always safeguarded (Bennett, 2021). The interview session began with an overview and general discussion, then reading the participation form, giving details as to the purpose of the research, explaining the coaching / mentoring part of the research, how the information will be used, the follow-up parts to initial research as well as potential risks and perceived benefits of participation, and how to remove themselves from the study (see Appendix 4a, 4b, 4c). The consent was given verbally on the call once the statement of participation was read, electronically signed and the form remains with the participant for future reference. From the outset, a safe, relaxing space for the one-to-one online interviews with all participants was established, ensuring wellbeing and confidentiality was safeguarded (De La Croix, Barrett & Stenfors, 2018), and the pace was guided by the participant themselves. For those that participated in the coaching program, journalling had already been encouraged from the outset, capturing thoughts, learnings as well as patterns to behaviours. As the mentoring program was led by BackUp, there was no way to influence nor control such guidance at that stage, but instead the mentees were encouraged to journal during their follow-up session with author/researcher, to which they received complimentary coaching session as a 'thank you' for participating in the research study. All coachees and mentees participated in one-to-one interviews on completion enabled richer data to be gathered.

With regards to Neutral grouping, again social media, medical contacts, charities, and word of mouth were used as a way to reach this specific population. As no coaching or mentoring would have been engaged in prior to the study participation, this grouping had no prior knowledge or experience of such talking support, and Neutral participants only experienced coaching due to the offer of a complimentary session at the end of the interview stage, as a way of thanking them for their participation.

Prior to any engagement with potential participants, a process was discussed and agreed with the supervisory team as to how to best protect data. It was agreed participant details would be kept separate from the dataset itself, therefore confidential demographic information (participant's name, age, email address, gender, country location, year of injury, reason for injury, activity history) would not be stored with the interview transcripts, nor could be associated by any means. On completion of the analysis, all participants' personal information was deleted from the Cloud storage area, and on Robert Gordon University's IT system.

Participant M5

As with all mentees and coachees, Phase One and Phase Two formed the research stages. For Phase Two, participants were invited to provide feedback through answering questions 1 to 13 on a video call once again, and also share their own feedback, to which they were invited to send this by email so it was in their own words. Although M5 did indeed provide their additional feedback through emails, poor mental health quickly became apparent, with a negative outlook dominating perception on life.

Prior to the engagement with the author, the mentoring program interaction was via BackUp, and to which their team passed on M5's approval to continue to the next stage of the research, which involves direct dealing with the author. As discussed later in this chapter (Chapter 3.3.2), warning signs, otherwise called Red Flags (Hart, Blattner & Leipsic, 2001) to coaching, to engaging further with an individual became apparent when engaging with M5. The author quickly recognised M5 should be discouraged from continuing any further in the study, therefore not continue the final part of providing end ratings scores against, but instead protect their health and wellbeing. As such, the author took considerable care in explaining the study was not appropriate at this stage as M5's wellbeing must be the priority, and signposted to further professional support, gave explanation why further participation was not advised at this stage and thanked M5 for their initial engagement. The communication chain at this time spanned a weekend, and the author was mindful to ensure a support network and further help was available, and that M5 was in calm state of mind before ceasing communication. M5 readily recognised and accepted the situation, thanked the author for the links to further help and for listening in what was a challenging time.

Despite M5 not completing the final set of rating questions at this last stage, this participant continues to be shown as a research participant as they participated in the mentoring program, engaged in the personal reflection, gave permission to discussion, and thus their data is important consideration as to the subject area, to which they have also expressed they hope it helps others. Thus, in Chapter 4, some data analysis tables will not show a score for M5's three-month follow-up stage where they rate questions, but their input at this stage is included in the discussion and is considered valuable data.

Participant engagement within studies can vary, depending on circumstances during the time period, and it is not unknown for original numbers to be reduced through the research phases, yet decision on using the data should be assessed on an individual case (Lawrason et al, 2022; Finnerup et al, 2016).

3.2.3 Recording vs. non-recording of interviews

Prior to the Pilot study, the handling the recording or tracking of the semi-structured interviews was considered and discussed, as the sensitivity of the research matter is one that recording could potentially be perceived as an obstacle for engagement (Ratakumwa et al, 2020). This was further given weight when the Pilot participants gave clear feedback recording was not desired, permission not granted and this would become a common theme with all participants, as even once it was agreed after the Pilot study that no recording would be offered, participants' feedback on such an approach was asked at the end, purely for insight into the perception with regards to sharing personal, sensitive information. All Live Study participants shared they would not have opted for recording, and should it have been mandatory, it may have changed depth of discussion, with the majority stating they would have refused to participate in the research altogether.

The approach surrounding recording vs. not recording the interviews was evaluated pre-Pilot study stage on several occasions, including acknowledging the influence a recording advice being used or even being present can have on the depth of share and openness to discuss (Rutakumwa et al, 2020), and that recording devices are not always the best choice, and can promote caution in responses (Norstrom, 2015). Furthermore, individuals participating in interviews can perceive process of recording as a trigger for anxiety, and impact the presenteeism (Gossman & Miller, 2012). Using a recording ensures any transcription is word for word, that information is not lost, however data is not just words but also the emotions and observations, or as referred to as 'fillers' (Stern, 2007, p118), and if omitted can lead to valuable details being missed (Rutakumwa et al, 2020).

It was decided, instead of focusing on the word-by-word account to capture interview and the social scene, non-recording would enable focus to be given to the context and the theoretical development (Stern, 2007). The decision to not record saw this study’s participants be open to discussing and sharing, which was stated would not be the case should it have been recorded.

Majority of participants showed heightened emotions during interviews, and with hindsight, the belief is such depth of conversation and show of emotion would not have been achieved should the interviews be recorded. Participants, instead, were read out the notes taken by the author at the end of the interview, who clearly marked up quotes and generalisations, and also shown a copy so that participants had the opportunity to correct anything factually incorrect and data was trustworthy (Birt et al, 2016), but not to change the nature of conversation in the moment. No corrections were requested. Participants also sent written statements.

3.2.4 Research and interview questions design

The literature review highlighted areas to explore further, particularly the impact coaching and mentoring as a talking support has on the WSC, managing chain, perception of physical and psychological abilities, motivational factors and influencers, support network, as well as general wellbeing. As such, the following research questions and interview questions were developed to answer the thesis aim: *“To critically evaluate the impact coaching and mentoring has on Walking Spinal Community’s behavioural change and motivations in relation to being physically active”.*

3.2.4.1 Research questions

To give focus to the research area, and ensure overall depth of understanding was achieved, the following research questions were developed, each of which addresses the various elements of this thesis and allows the exploring of concepts and data.

1. To what extent are coaching and mentoring effective platforms for talking support for the WSC?
2. What are the key factors regarding impact of sustaining a spinal condition?

3. To what extent does WSC's behaviours and motivations impact participation in physical activity?
4. To what extent does having a trusted support network impact the WSC's activity levels?

These research questions will be addressed in Chapter 4 analysis, when discussing and evaluation the data from the qualitative research.

3.2.4.2 Interview questions

The following table summarises the interview questions, and to which helped to form the line of questions that participants would be asked but as mentioned above, further discussions would take place from these. BackUp also gave input on the interview questions as they were directly involved from the Mentoring side. It was critical agreement was made before any interaction with participants, thus ensuring consistency.

Interview question / statement to discuss	**Developed as a result of academic work**	**Relevance to Research Question #**
Q1. I feel positive about the future	Collier, 2018; Chemtob et al, 2018; Williams et al, 2014	1, 2, 3, 4
Q2. I feel supported by the people around me	Ciammachielle et al, 2022; Ringland et al, 2019; Cadematori et al, 2021; Gassaway et al, 2018; Koenen et al, 2017; Skeels et al, 2017	1, 2, 3, 4
Q3. I have the opportunity to go out / engage in meaningful activities	Lawrason et al, 2022; Williams et al, 2014; Baluwet & Willock, 2012	1, 2, 3, 4
Q4. I feel confident about my situation and moving on with my life	Vinoski Thomas et al, 2019; Chemtob et al, 2018; Gassaway et al, 2016; Putnam, 2005; Martz & Cook, 2001	1, 2, 3, 4
Q5. My rating of my general wellbeing	West & Michie, 2020; Glowacki et al, 2017; deRoon-Cassini et al, 2009; Migliorini, Tonge & Taleporos, 2008	1, 2, 3,4
Q6. I feel connected with someone in a similar situation	Kattari et al, 2018; Dunn & Andrews, 2015; Wu & Williams, 2001	1, 2, 4
Q7. I feel motivated to take part in some physical activity	Mills, Nicolson & Smith, 2019; Hoare et al, 2017; Prochaska et al, 2001;	1, 2, 3, 4
Q8. What changes has your spinal condition brought in relation to your activities, sports, hobbies?	Cadematori et al, 2021; Skeels et al, 2017; Hastings & Horn, 2009	1, 3, 4

Q9. To what level do you still consume / participate any activities?	Cadematori et al, 2021; Skeels et al, 2017; Hastings & Horn, 2009	1, 2, 3, 4

Table 8: Initial interview questions and relationship to current academic work

The table highlights the relationship of the questions to relevant literature, as well as relevance to research questions to be addressed as part of the analysis and discussions. The questions were used to explore any emerging themes from the interviews. Although the author also wished to explore the idea of distance to medical support teams, such as physiotherapists, consultants, psychiatrists, rehabilitation centres, this was not seen as relevant nor acceptable by the charity, who had a say in questions as their mentors would be posing the questions to mentees in the first instance. The above questions, which are the Live study questions and to which are adjusted following the Pilot study (all discussed in the next sub chapters), were created to give insight into thoughts, emotions, behaviours and motivations, and to always encourage open discussion where possible, thus gain further data from each participant, whilst ensuring the objectives are being addressed:

Research Objective 1: To understand and explore the behaviours of the UK walking spinal community, and the impact the spinal condition has on being active.

Research Objective 2: To explore the walking spinal community being physically active in relation to behaviours and motivation.

Research Objective 3: To explore theoretical underpinning to further develop a behavioural model to measure the phenomena surrounding behavioural change and motivation.

Research Objective 4: To explore and critically analyse the impact Coaching and Mentoring has on the WSC's behaviours and motivation to participate in physical activity.

Research Objective 5: To provide researchers a new conceptual framework to behavioural change, to which can be used practically outwith academia.

Pilot study interview questions

It is important to highlight, interview questions as shown in Table 8 have variation to the original questions as asked in the Pilot Study, to which is discussed fully in the next sub chapter. The pilot study's interview questions were formed as a result of literature review and then were proposed, discussed and agreed with BackUp, where senior management team were involved with regards to the agreement on mentee participant interviews. The charity's strategy became a focal point to ensure any data gathered would be of assistance to both author and the organisation. This resulted in compromise, drafting of questions and timelines, yet careful consideration given to not negatively impact the aim of the study. However, the charity did acknowledge the research was led by the author and must fulfil the research aims and objectives, contribute to knowledge, and be considerate to the emotionally sensitive discussion area. Furthermore, the interview questions must remain relevant for all participating groups, not just mentees. BackUp's influence on questions included requesting changes to questions, lessening mention of activity, and to which they wished for closed questions for the interview. Compromise was found, including the open questions with ratings that would permit further discussion at a later stage. Therefore, the rating questions would be asked by the Mentor team to mentees in Phase One but would be expanded in discussion when in direct contact with the author for Phase Two. The questionnaire design process was as follows:

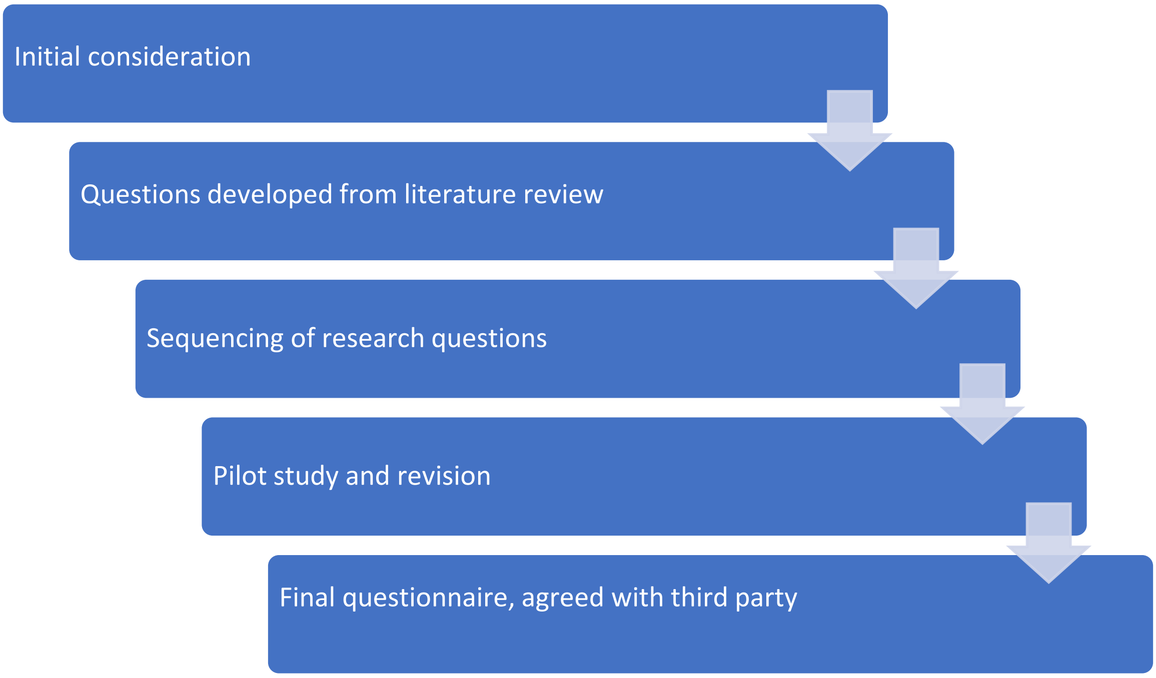


Figure 25: Process of questionnaire design (Author, 2022)

Sub chapters 3.2.5 and 3.2.7 discuss the Pilot and Live studies respectively, discussing the qualitative approached with both, and also reasons for why questions used for the Pilot participant engagement was amended. Although this is independent research, self-funded and solely the work of the author, the involvement of a third party (in this case, BackUp) to assist in reaching the target audience has resulted in compromise on question structure being required to ensure continuation of the agreed pathway to mentees. Coachees and Neutral groups were not involved with a third party, but for consistency, agreements on the questions for Mentees meant the questions and any changes applied to all future participant research (see Chapter 3.2.8 and 3.6).

3.2.5 Pilot study

An initial pilot study involving three participants (two coachees, one mentee) within the WSC was undertaken, reflecting the number of candidates of pilot study by Skeels et al (2017). The Pilot Study participants undertook coaching or mentoring of up to 10 sessions. The baseline questions below were formed as a result of the undertaking the literature review, and to be able to answer the objectives to ultimately bridge gaps in knowledge within this field. As discussed earlier in this Chapter, methodology included using semi-formal questions, whereby instinct ratings of 1-10 would be asked as a measurement to how the participant felt at that time, before and after the talking therapy program, and the participant was encouraged to expand thoughts on replying to each question. Wording was carefully composed, being mindful of the sensitive nature and the emotions that may be experienced as they participant was asked to focus on their life as it is now, following the traumatic incident that resulted in a spinal injury and the subsequent changes to their life.

Eight interview questions – asked before / after mentoring or coaching program
1. I feel positive about the future (1-10 rating)
2. I feel supported by the people around me (1-10 rating)
3. I have the opportunity to go out / engage in meaningful activities (1-10 rating)
4. I feel confident about my situation and moving on with my life (1-10 rating)
5. My rating of my general wellbeing (1-10 rating)
6. What changes has your spinal condition brought in relation to your activities, sports, hobbies?
7. To what level do you still consume / participate any activities? (1-10 rating)
8. What are your current challenges surrounding wellbeing and exercise?

Table 9: Pilot study – first set of pre- and post interview questions

Although it was already recognised this research topic would be one that was very personal to those approached to participate, it became clear throughout the interviews that conversations could easily veer off track should the participants wish to open up about something they felt was relevant or came to mind. It also was observed that irrelevant, personal information would be shared, due to the nature of being listened to, and thus great care was needed then and going forward to ensure health and wellbeing was safeguards – again for both participant and author.

As mentioned earlier, in sub chapter 3.2.3, all Pilot study participants were asked for permission to record the online interview, and declined the offer to record, giving reason of due to the very personal nature of the topic and they felt they would not be as open, nor want to talk at all (Gossman & Miller, 2012). Such viewpoints were not surprising, as a recorded session can change the dynamic of conversations, even if the record is not switched on (Rutakumwa et al, 2020). To capture further information thereafter the interview, participants were welcomed to write thoughts in their own words, and also discuss, should they also be happy to join another online meeting. An approach of non-recording was agreed for the Live study, removing the influence of recordings and likelihood of caution by a respondent (Norstrom, 2015).

The Pilot study gave good experience as to the emotions from participants; the time needed for interviews to enable depth of conversation; the care that must always be given to safeguard health and wellbeing; considerations to best practice of transcribing, including when to take time to write exact wording and using quote marks; how to clearly mark what was verbatim; and giving more detail that what was in the conversation yet important for inclusion and understanding (Stern, 2007). The declines to the offering to recording during the Pilot study was a good test to the research methods, and to plan out how the transcribing would not deter from conversation, and ensure the interview was flowing and focused. This is discussed in Chapter 3.2.7.

On reviewing the process and data presented during this Pilot study, it became evident there was potential of depth to be missed in the Live study in relation to understanding social connection, including a relatable person to which sharing experiences, as highlighted during the literature review (Pierce et al, 2020; Hoffmann et al, 2019; Gassaway et al, 2018; Chemtod et al, 2018), as well as considering maintenance of change (Prochaska, DiClemente & Norcross, 1992). Although social connection was highlighted organically by Pilot participants, the questions provided no guidance to help explore this further, yet the response to the Pilot raised this as an area to consider. The data also showed a gap in understanding the physical activity motivation, as this question was not directly asked but implied, as well as highlighted through conversation, and so further questions would be reviewed to ensure the interview would gain this data from each participant. The motivations for physical activity are important to understand as they create a psychological obstacle but can be managed (Abrash Walton et al, 2022; Ferron & Massa, 2013; Prochaska, DiClemente & Norcross, 1992; Maslow, 1990) and such data leads to a better understanding of what are the thoughts and reasons for engaging or not.

The pilot study was an important introduction as to the process, understanding, flow and initial data, where it could be assessed whether there was enough structure or correct questions to gain the deeper understanding in the research area, and also to be able to add to knowledge within this academic field (Lawrason et al, 2022). In addition, on reviewing the data, it became clear that the study should not look at both coaching and mentoring as a collective of talking therapy, as experiences may differ based on the type of support, but instead the groupings should be split into sub areas – coaching, mentoring – as well as add a group for Neutrals, who will also experience coaching session, offers as thank you for participating. Furthermore, as part of the literature review, coaching and mentoring also tend to be separated, and it was only from the Pilot study did questions arise as to the impact each may have on their longer-term motivations, as opposed to the short-term. It was also decided introducing Phase Two of at least three months post program would assist in providing insights into the maintenance of behavioural change and motivations (Clear, 2018), essentially examining if they revert, or continue from where they left off from their sessions.

From the Pilot study, the initial findings showed the following ratings as taken before and after said talking therapy, noting *N=3*, with *P = pilot participant no.*, and the difference below highlights improvement from before to after. P1 and P2 are Coachee participants, P3 is a Mentee participant.

	P1	**P2**	**P3**
1. I feel positive about the future (1-10 rating)	+2	+2	+1
2. I feel supported by the people around me (1-10 rating)	+2	+2	-1
3. I have the opportunity to go out / engage in meaningful activities (1-10 rating)	+2	+2	+2
4. I feel confident about my situation and moving on with my life (1-10 rating)	+2	+2	0
5. My rating of my general wellbeing (1-10 rating)	+2	+2	0
6. What changes has your spinal condition brought in relation to your activities, sports, hobbies?	+5	+1	0

7. To what level do you still consume / participate any activities? (1-10 rating)	+2	+4	+1
8. What are your current challenges surrounding wellbeing and exercise?	n/a	n/a	n/a

Table 10: Pilot study results – variation in overall ratings

During this Pilot study, there was a noticeable overall gain by P1 and P2 for all question areas, with P3 having gains with three areas / questions (Q1,3,7), though overall, a lesser impactful outcome through the talking support. The above results were from the 1-10 ratings score, and this shows where after the duration of program if there was a higher reading (+), lesser (-) or stayed the same level (0).

In relation to Question 8, *("what are your current challenges surrounding wellbeing and exercise?"*) overarching themes that came from these interviews included pain management (P2, *"on a bad day, pain gets me down. I don't want to do anything when I have pain"*), social inclusion (P1, *"I feel so cut off from my friends now, I can't do what I used to but they still are enjoying"*), inclusion (P1, *"I want to try activities, but I seem to get negative responses, and don't feel welcome"*), and self-belief. The responses to the discussion element of each question also paves way to the interlinking of pain, wellbeing, and motivation (Kindt et al, 2015), as well as perception of pain in relation to activity (Muller et al, 2022; Collier, 2018).

Following this process, the first stage of questioning, prior to the three-month follow-up, were tweaked to include two further questions (Q6, Q7), as highlighted in blue in Table 11. Furthermore, BackUp requested Q8 be changed from *"What are your current challenges surrounding wellbeing and exercise?"* to *"What would you like to achieve from the Mentoring / Coaching?"*, as they did not feel this question was relatable to their strategy (highlighted in green). However, again compromise was required, as it did not feel this question was right, and instead the question was re-worded, avoiding 'challenges' and became: *"What changes has your spinal condition brought in relation to your activities, sports, hobbies?"*

Initial 10 interview questions / prompts (including general feedback) – asked before / after
1. I feel positive about the future (1-10 rating)
2. I feel supported by the people around me (1-10 rating)
3. I have the opportunity to go out / engage in meaningful activities (1-10 rating)
4. I feel confident about my situation and moving on with my life (1-10 rating)
5. My rating of my general wellbeing (1-10 rating)
6. I feel connected with someone in a similar situation (1-10 rating)
7. I feel motivated to take part in some physical activity (gardening work etc not necessarily linked to exercise) (1-10 rating)
8. What are your current challenges surrounding exercise and wellbeing? – now removed from Q8 but a general ask, thus Q8 becomes: 'What changes has your spinal condition brought in relation to your activities, sports, hobbies?
9. To what level do you still consume / participate any activities? (1-10 rating)
10. Feedback / discussion surround Qs 1-9

Table 11: Initial 10 interview questions / prompts to all research participants

Furthermore, on analysing the information gathered from the Pilot study, a further three questions were populated for asking at the end of the talking support program to ensure guidance yet not limit discussions, enabling further data on personal experience, perception, motivations, and barriers, and to allow the candidate to be as candid as they wish (Table 12), with rationale for updating interview questions discussed next, in Chapter 3.2.6:

Additional questions - post talking therapy program
11. Describe the impact coaching has made on returning to physical activity
12. Have you previously been offered Mentoring or other talking support? (describe, discuss)
13. Please provide any further feedback (open question to all aspects they wish to discuss)

Table 12: Further three questions to all research participants during follow-up interview, after program has ended

Due to the nature of conversations, the timing of the interview was amended, the pre-program remained at 15-20 minutes, the post-program interview to be approximately 30-40 minutes, with the three-month follow-up would involve discussion (30 minutes) and participants also being invited to give written feedback, with guidance given on what areas to share. For the Live study interview with author, participants would engage by video call where possible. Information with regards to the three-month stage is shared during post-program interview stage. Signposting to further relevant professional support would be shared with all participants.

3.2.6 Rationale for updating interview questions

As highlighted, the Pilot study was a useful, insightful process to assess the data that could be generated from the participant, being respectful to the sensitive nature of the topic of managing spinal injury and conditions, handling raw emotions, as well as finding a positive compromise for where amendments are required to gain further rich data. The pilot study enabled a test of all aspects of the proposed research, to make any necessary adjustments before a larger, more definitive study, including the design (Drummond, 2017). Although overall the interview questions gave opportunity to discuss each point, starting with 1-10 rating then reasoning and insights, the initial analysis highlighted gaps to information the author wished to gain, including the connectivity to others in similar situation and social network, motivation to exercise as well as perceptions as to how the spinal condition has impacted physical activity engagement. The latter was also a talking point with the charity BackUp, who did not wish their direct mentees to be asked about challenges of being active, so Q8 was reframed.

The following shows the Live study questions, with the additional questions marked in blue and the amended question marked in green. The table also includes Q14 prompt, to which the participants were invited to discuss at least three months post program, and were also sent prompt questions to assist in structure of feedback (detailed further below in this sub chapter).

Initial 10 interview questions / prompts – asked before / after
1. I feel positive about the future (1-10 rating)
2. I feel supported by the people around me (1-10 rating)
3. I have the opportunity to go out / engage in meaningful activities (1-10 rating)
4. I feel confident about my situation and moving on with my life (1-10 rating)
5. My rating of my general wellbeing (1-10 rating)
6. I feel connected with someone in a similar situation (1-10 rating)
7. I feel motivated to take part in some physical activity (gardening work etc not necessarily linked to exercise) (1-10 rating)
8. What changes has your spinal condition brought in relation to your activities, sports, hobbies?
9. To what level do you still consume / participate any activities? (1-10 rating)
10. Feedback / discussion surround Qs 1-9
Additional questions – post talking therapy program
11. Describe the impact coaching / mentoring has made on returning to physical activity
12. Have you previously been offered Coaching / Mentoring or other talking support? (describe, discuss)

13. Please provide any further feedback (open question to all aspects they wish to discuss)
3-month follow-up session / feedback
14. 3-month+ follow-up discussion and feedback (with prompts)

Table 13: Interview questions listing - initial 10 questions / prompts to all research participants, plus further three questions for end of program, and Q14 being follow-up session as one further final follow-up after 3-month mark

During the Pilot study, participants highlighted social inclusion: P2 *"I don't know anyone who gets me, gets what I have gone through"*, *"I am having to find who I am now, and hope to be included, especially doing things"*; P1 *"don't feel welcome"*; P3 - *"it's been helpful speaking to someone who has had a spinal trauma, even though different to mine", "I can feel alone, friends don't see me as often, family time is hard"*. It was felt a social network / interaction question would need be addressed to gain this information rather than by chance regarding this environment (Hoare et al, 2017), hence research Q6.

Q7 was added to give more focus and direction to understanding the motivations surrounding physical activity, and to discuss what such activities are, with Q10 allowing for a relaxed exploration of what has been highlighted and to give the space for participants to consider ideas and share further should they wish. Questions 11-13 were added as bonus questions to Q1-10 on completion of the program, whereby 11-13 gave focus on the coaching / mentoring talking support they received, and participants were able to give a comparison of life before and after, and to share their views on what they would have liked to have experienced during their recovery having had this experience. Neutrals could not do a comparison, as they had not received coaching or mentoring prior, but they can give a comparison to the complimentary coaching session, share their views and still have an important say on impact to life. As such, the Live study questions were now ready and agreed for this crucial stage of the research, as discussed next.

Three-month follow-up session and prompts

In relation to Phase Two, the 3-month follow-up session, to which the participants were invited to discuss in person and also email their feedback in their own words, certain prompt questions were given to help all in their written response, whilst being clear as much or as little could be shared by each.

- *Do you feel you have made progress since any medical / talking support?*
- *What has helped? What have been the challenges?*
- *Highlight emotional, physical challenges, should you wish*
- *What activities are you doing? What do you hope to do once more?*
- *What would better assist you in moving forward?*
- *Did our coaching discussion assist you? Give reasons.*

The purpose was to ensure relevance to the research, as well as building upon information as shared previously and encouraging new information to be forthcoming. This was an informal discussion, one that was reflective, and would give insights into life as it is now, compared to the months before. These questions are again shown in Appendix 5.

Relevance of research objectives to interview questions and literature

The following table highlights the research objectives, interview questions and the associated key literature that have assisted in understanding these areas as part of the secondary research. Though by all means, further authors have also provided understanding (Lawrason et al, 2022; Sweet et al, 2021; Bailey, Gammage & Van Ingen, 2017; Jannings & Pryor, 2012), yet there remains a gap in knowledge, and it was only through the research and collected data that depth of understanding on this subject matter was gained.

As interview questions have been created, discussed, and amended, the overall research objectives have remained in clear focus to ensure the study remains aligned, and that any influence from third party is minimalised where possible.

Research Objective 1: To understand and explore the behaviours of the UK walking spinal community, and the impact the spinal condition has on being active.	Interview questions: 2, 3, 4, 6, 8, 9	Jeawon et al, 2023; Lawrason et al, 2022; Cadematori et al, 2021; Mills, Nicolson & Smith, 2019; Kattari et al, 2018; Chemtod et al, 2018; Bailey, Gammage & Van Ingen, 2017; Hoare et al, 2017; Glowacki et al, 2017; Stephens et al, 2017; Beauchamp et al, 2016; Williams et al, 2014; Jannings & Pryor, 2012; Prochaska et al, 2001;
Research Objective 2: To explore the walking spinal community being physically active in relation to behaviours and motivation.	Interview questions: 1, 2, 3, 4, 7, 8, 9, 11	Lawrason et al, 2022; Sweet et al, 2021; De Leo et al, 2021; West & Michie, 2020; Sweet et al, 2018; Chemtod et al, 2018; Gassaway et al, 2018; Divanoglou & Georgiou, 2017; Skeels et al, 2017; Bailey, Gammage & Van Ingen, 2017; Ben-Ami et al, 2017; Zimmermann, 2017; Bailey et al, 2015; Tasiemeski et al, 2015; Ferron & Massa, 2013
Research Objective 3: To explore theoretical underpinning to further develop a behavioural model to measure the phenomena surrounding behavioural change and motivation.	Interview questions: 1, 3, 4, 5, 7, 8, 9, 10, 11	Abrash Walton et al, 2022; De Leo et al, 2021; Cadematori et al, 2018; Abrash Walton, 2018; West & Michie, 2020; Hayden, 2018; Koenen et al, 2017; Ferron & Massa, 2013; Prochaska, DiClemente & Norcross, 1992; Prochaska & DiClemente, 1986
Research Objective 4: To explore and critically analyse the impact Coaching and Mentoring has on the WSC's behaviours and motivation to participate in physical activity.	Interview questions: 1-14	
Research Objective 5: To provide researchers a new conceptual framework to behavioural change, to which can be used practically outwith academia.	Interview questions: 1-14	

Table 14: Research objectives – with key corresponding interview questions and literature

3.2.7 Live study

Due to the varying talking support being researched (Sweet et al, 2021; Rethorn et al, 2019; Passmore et al, 2018; Beauchamp et al, 2016), and as highlighted in the last sub chapter where the Pilot study data was looking at coaching and mentoring as a collective, it was decided participants and their data would now been assigned groupings as to better understand the impact from each talking support, rather than looking at them together.

- Mentees (those who have undergone a mentoring program via BackUp charity)
- Coachees (those who have undergone a coaching program via author, an experienced coach)
- Neutrals (those who have had no coaching or mentoring offered)

Although there are three groups, each Mentee and Coachee participant were asked nine questions at the start and end of their sessions, plus Q10 which was a prompt for further information and to which enabled discussions and feedback (see the following Table 13), all of which form a measurement to ascertain the value of the said talking therapy, with the sections of questions clearly marked in varying colours: Yellow – initial 10 questions / prompts that are asked at the start and end of the talking support program; Green – to be asked on the end of the program to gain further information; Grey – 3-month follow-up, to which separate prompts are given to assist in written feedback, as well as any further discussion (see Chapter 3.2.6). As mentioned in the previous chapter, no sessions with any participants were recorded at any time.

Initial 10 questions / prompts – asked before / after
1. I feel positive about the future (1-10 rating)
2. I feel supported by the people around me (1-10 rating)
3. I have the opportunity to go out / engage in meaningful activities (1-10 rating)
4. I feel confident about my situation and moving on with my life (1-10 rating)
5. My rating of my general wellbeing (1-10 rating)
6. I feel connected with someone in a similar situation (1-10 rating)
7. I feel motivated to take part in some physical activity (gardening work etc not necessarily linked to exercise) (1-10 rating)
8. What changes has your spinal condition brought in relation to your activities, sports, hobbies?
9. To what level do you still consume / participate any activities? (1-10 rating)
10. Feedback / discussion surround Qs 1-9

Additional questions – post talking therapy program
11. Describe the impact coaching has made on returning to physical activity
12. Have you previously been offered Mentoring or other talking support? (describe, discuss)
13. Please provide any further feedback (open question to all aspects they wish to discuss)
3-month follow-up
14. 3-month+ follow-up discussion and feedback

Table 13: Interview questions listing - initial 10 questions / prompts to all research participants, plus further three questions for end of program, and Q14 being follow-up session as one further final follow-up after 3-month mark

All mentees and coachees were asked to undertake up to 10 sessions within their talking support program. Unlike the coaching program that asked for the commitment to all 10 sessions offered, mentees were not obligated nor encouraged to use all the sessions, but leave when they chose. Only one of the five participating mentees completed the full 10 sessions, the remainder giving an average of 4.25 sessions (actual number of sessions being 5, 5, 4 and 3). All coachees completed their coaching program.

Mentees

The mentees, all of whom underwent a mentoring program via BackUp charity (see Chapter 3.2.8), were then asked if they gave permission to have follow-up qualitative interview with semi-formal questioning with a researcher, to discuss their given ratings per question, and three further questions, surrounding their perception of support and consumption of physical activity. The mentees were also offered a complimentary coaching session as a ‘thank you’ for their time in participating in this research, and if agreed, this ran immediately after the end of the follow-up session. This offer of gratitude is in line with other research, who have offered service or monetary value (Shaw et al, 2018; Beauchamp et al, 2016). The coaching notes from said sessions remain confidential, and intentionally not been used in the research. On completion, the mentees were invited to give a written statement of how they feel their progress has been since undertaking the mentoring sessions, what were the successes and challenges since, and their overall mental health. Any received were at least three months after completing their mentoring program. Prompts to guide each participant is detailed in Appendix 5. Chapter 4 discusses the findings.

Coachees

The coachees agreed to a 10-session program with research / study author, a qualified and accredited transformation coach, a neuro linguistic programming (NLP) practitioner, and mental health first aid trainer. The coaching sessions differed slightly as mentees were not asked to commit to the full 10 sessions, and the author had no influence on this approach. However, for the coachees, each participant was asked to commit to the full 10-session program. Again, the same baseline measurement questions were asked, and discussions had at the start and end of the program, as well as the additional mentioned three questions (Table 13). The coachees were also invited to give a statement of progress, wellbeing, and consumption of physical activity at least three months after the coaching sessions completed (Appendix 5).

In relation to number of participants per grouping and as a whole, literature research helped form the basis with those undertaking relevant qualitative research having a variation of candidates from as few as three (Cadmatori et al, 2021), and as high as 158 (Gassaway et al, 2017), due to in-patient access. There is no definite or correct number to be achieved when conducting interviews (Saunders, Lewis & Thornhill, 2019), but should be deemed sufficient for qualitative analysis and scale of study. The following table gives examples of participants of related studies, and to which became part of informed reasoning for this research area.

Referenced authors	No. of participants	Method
Cadematori et al, 2021	3	3 (up to 10 x coaching sessions), semi-structured, recordings transcribed verbatim. SCI participants.
Bailey et al, 2015	9	5 women, 4 men. Ages 21-63. Open-ended questions. Semi-formal structure then interviews. SCI participants. WSC participants.
Jannings & Pryor, 2012	12	7 men, 5 women. Face-to-face interviews, semi-structured interviews, each approx. 1.5hrs. Notes taken, transcribed verbatim, no recording of WSC participants.
Shaw et al, 2018	12	7 men, 5 women (SCI peer mentors), semi-structured interviews (1 each), received $20 honorarium thank you. SCI participants.
Beauchamp et al, 2016	15	8 men, 7 women (mentors), semi-structured interviews (1 each), received $20 honorarium thank you. SCI participants.
Vinoski Thomas et al, 2019	15	Women only. Video call platform (Facetime, Skype), voice recording where permitted, calls 18-55mins in duration. Ages 21-53. WSC, SCI participants.
Lawrason et al, 2022	22	13 men, 7 women (from 43 from an earlier study) agreeing to additional interview, phone calls, each 29-71minutes. Audio recorded, transcribed verbatim. Reflexive journal. WSC participants.
Jeawon et al, 2023	24	13 men, 11 women, semi structured interviews via phone or video call. Duration of interview up to 90mins. Mixed methodology, WSC participants.
Skeels et al, 2017	42	42, mix of phone calls and 6-month program, semi-structured interviews. 6 sessions of coaching. No recording. SCI participants. Neutral group part of study.
Hoffmann et al, 2019	52	33 men, 19 women (in-patient access), peer mentoring study. Minimum 3 mentoring sessions. Questionnaires, 2 phases. SCI participants.
Gassaway et al, 2017	158	158 (in-patient access), 4 stage interview process (by phone), experimental (77) and non-experimental (81). Transcribed verbatim. SCI participants.

Table 15: Number of participants for relevant spinal injuries population studies

Based on such findings, it was decided the Live study should have at least *n=10* participants who would engage with and complete mentoring and coaching programs, and ideally a neutral group of at least *n=2*, therefore a total of *n=12* was a research group target, to which the study achieved a total of *n=15*, (Table 16). The pilot study separately engaged with *n=3* participants. A further *n=17* mentees also completed Q1-10 section directly with BackUp, though these candidates did not go on to the further in-depth part of the study for various reasons, including permission not granted, personal circumstances, health and timing. In addition, *n=5* coachees did apply to participate but on contact, were no longer willing to participate for various reasons.

Coachees	coaching program and full research interview phases participants	6
Mentees	mentoring program and full research interview phases participants	5
Neutrals	no coaching or mentoring program experience	4

Table 16: Overview of number of candidates who participated in this research study, per grouping

A total of six spaces for Coaching participants were made available for this study, with all candidates being advised they would work with the research author directly, a qualified accredited transformational & mindset coach, for 10 sessions, each at least one week apart. As with the Mentees approach, at the completion of the coaching, there was an end interview for the programme, and then each person was invited to give one further update three months later, with the purpose of assessing if activity and mindset continues at the level after the support has come to an end. With regards to the first follow-up, thus on completion of the coaching program, no coachees were advised of their original score as this could influence their response on the day as a comparison would be created in their minds, giving unconscious bias (Ciammaichella et al, 2022). Therefore, the scorings they gave would be how they feel in the moment, and all comments again based on the present, rather than any influence becoming a factor in the data. Such an approach was also advised to BackUp, to ensure data reflected reality, rather than any bias (see Chapters 3.2.8 and 3.6).

Coaching is forward focused, action-based with the aim of bringing transformation to the areas of life that the coachee wishes to positively change (Association of Coaching, 2022, online; Hart, Blattner & Leipsic, 2001). As with the mentees, the coachees each were to have a spinal injury with walking ability. The coachees were chosen after first applying to participate, having used social media, emails, network and editorial to reach an audience, and then offered an interview. The purpose of this was to give details about the research, talk over the Participation Form - Consent Statement (Appendix 4a), answer any questions, assess if there are any red flags (see Chapter 3.3.3), and ensure there is a high ethical standard applied at every stage (see Appendix 6 and Appendix 7).

Neutrals

The neutral participants, those who had not been offered or undertaken mentoring or coaching programs as part of their journey to recovery, were again asked the 10 baseline questions / prompts, though of course, there can be no comparison made to the before session / interview as this is not applicable. However, the participants also answered the following three questions, offered a complimentary coaching session, and were invited to give statement / thoughts in their own written words after three months had passed to give insights into any changes.

In addition to the timings of data collection, the initial set of completed questionnaires came from the coachees group, with a mix of mentees, coachees, and neutrals data soon following. This allows all stages of the qualitative research to be planned and executed, including the three-month follow-up, as highlighted above. Although datasets were completed at different times due to durations of coaching and mentoring programs, access to information and being able to interview the neutral participants, a decision was made from the outset not to begin the coding until all datasets were received, rather than spanning some months apart. The reason was to review with the same focus, with each being given the same consideration. Independent review and advice was given by a member of the supervisory team, and ensuring coding stage was completed fully without prejudice or bias.

To give a clear understanding of the Live study qualitative stages, a flow chart is shown in Appendix 8.

3.2.8 BackUp – mentoring program

BackUp is a large UK-based spinal charity, supporting those with neurological and therefore permanent disability, and since 2015, also the walking spinal community. The charity's mentoring program offers up to 10 sessions, with a minimum of four being encouraged, though there is no obligation as to the number of sessions undertaken (see Appendix 9).

Due to author's historical personal understanding of this charity and the reach to the spinal community, it was proposed that a collaborative partnership would enable access to BackUp's walking spinal community, and this would provide benefits for both this research area as well as the charity itself. Following several months of discussions, in February 2021, an agreement was made whereby BackUp's mentoring participants would be asked agreed questions, and to which these would jointly benefit both the charity and this research, and full access to the mentoring services data would be received (see Appendix 10a).

Following meetings with senior leadership members at BackUp, as well advice from the research supervisory team and presenting the proposed legal contract to Robert Gordon University's Ethics Committee, an agreement was finally signed off, just before the 'go live' date of 1st April 2021, giving 12 months plus possible 12 months extension (24 months) access to the mentoring community and data, though the charity did express preference of a duration 12 months. The agreement was ended by BackUp 13 months after the start date.

During initial discussions, BackUp shared their five-year strategy plans and their then current mentee assessment questionnaire, which was to be aligned with the agreed purposes, as well as give richer data for the charity to use in the future. BackUp's data collection process would also be reviewed and recommendations for a better practice would be shared, if applicable. From this date, the updated questions were approved (see Table 13), and it was agreed that quarterly data updates would be shared by the charity, password protected with additional unrequired personal data removed, thus progress of mentorships could be tracked, as well as be able to see impact from the mentoring program. Question 10, which is a prompt for further information, was not agreed by the charity, but this would be asked at the Phase Two stage when the author had direct engagement, and therefore discuss Q1-9 in greater depth. BackUp were also advised to allow each participant to freely give their ratings of 1-10 without guidance, prompts, and also reminders as to the last rating they may have given. This was to avoid conscious bias from the participant (Ciammaichella et al, 2022).

It was understood that due to a maximum of 10 sessions being offered to mentees, there would be at least 10 weeks from start to finish of a mentee programme, usually over three months, giving an expected timeline. As such, it was clear not to expect any initial data until the summer 2021. BackUp's mentoring team would ask the agreed questions when contact was first made and mentor then assigned, and then the mentee would be asked the same questions once again. Despite mentees being offered up to 10 sessions, only one of the mentees engaged in all 10 mentoring sessions, the remaining four giving an average of 4.25 sessions utilised.

During the initial six months after live date, the charity made contact to ask if the questions could be amended, as a result of feedback from some of the administrative team who felt there were too many, did not fully understand the relevance, and wanted to shorten the need to ask questions to their mentees. It soon was shared that due to a change of staff from the original team involved, internal communication was unclear, as well as not filtering through to all relevant parties. As such, full background and explanation was once again given by the author, also explaining the research was now live and questions could not, or certainly should not, be amended, as the same questions were also being used for the coaching part of the research which was underway. The BackUp team were advised there would always be the opportunity to discuss issues, solutions, and any training the staff may require, as well as add further criteria should that be required. It was also shared that mentees were being advised previous ratings, and explanation was given once more as to why this must be discouraged, and to ensure fair, honest reflection on the day without any prejudice. BackUp insisted on the changing of questions, and an agreed timeframe was put in place so that the author could complete the study before the dataset would be changed. Outwith this study, BackUp's mentorship program statistics are gathered by the team to inform and support strategy and decisions, yet this information is based on generalisation from limited depth of research, time and processing resources (Weber, 2020), with data collection practices potentially promoting bias as opposed to being addressed (Ryan, 2018).

Data collection by the BackUp team was carefully examined by the author at each stage of compilation to ensure process was being followed, and to raise any concerns at an early stage. It was on receiving the updated quarter data that it became apparent that BackUp’s system was not exporting data in a manner conducive to analysis, nor was full data showing. For instance, instead of showing actual results / ratings per each question, only a 1 or 0 was marked to show a yes or no. This highlighted discrepancies for what information was being pulled and reported, and what has been a routine approach to data collection. The data concerns were flagged, as well as highlighting the stage of the research, as it should been able to be exported, analysed from those that had initially completed their programmes, yet this would not be possible. A discussion took place with senior team members, and it was agreed one of the charity’s team would manually update the sheets until the new system could be installed, scheduled for early 2022. Furthermore, all the earlier issues were to be examined more closely by BackUp as to safeguard accurate data, and not have any data jeopardised or outcomes swayed after it was explained the need not to lead questions and answers, but instead allow the mentee to give their own account. Although it was already discussed that mentees would be invited to participate in the 3-month follow-up after the close of program interview, BackUp wished to put this into official agreement, as well as tightening their security to the date. As such, an addendum to the initial agreement (Appendix 10b) was drafted, stating mentees to be contacted by the author to give an independent assessment of their mentoring programme impact in relation to this study. The charity was advised verbally of the incentive of being offered a complimentary coaching session as a thank you for participating, whilst also gaining support, should it be required.

The collaborative arrangement, with final mentor data received, ended May 2022. Reasoning included BackUp’s timeline for changing onboarding system and protocol, team members changing, and the charity also deciding to amend the mentee service questions, keeping fully aligned to their strategy. All changes did indeed take place during 2022.

3.3 Ethics considerations and evolution

Due to the nature of this research area, several ethical points were considered and handled in a mindful way, all of which will be discussed in this section:

- Wellbeing: sensitive nature of trauma and the emotions
- The stage of recovery of chosen participants
- Confidential information.

3.3.1 Wellbeing: sensitive approach towards trauma and emotions

All the participants approached as part of the qualitative research methods had a very high likelihood of having experienced an accident or similar traumatic incident that resulted in suffering a SI, but with walking ability (WSC). Time does not remove the difficulty of managing trauma after-effects (HelpGuide, 2020; Martz et al, 2001) and great care was taken to treat each person with respect, understanding, and sensitivity, as well as allowing qualitative research to flow based on the person being questioned.

All participants were adults and had been discharged from hospital at least one year prior to interviews. They had voluntarily opted to be a participant in this study. From the outset, all participants were advised the interview could be stopped at any time to allow them to have control of their emotions and responses, and should they wish, a new date could be arranged. A summary sheet (Appendix 3) was provided clearly outlining the purpose of the study and how information was used for the research, followed by an email providing links to organisations that can support them should they wish (spinal charities, mental health organisations and sporting bodies) (see Appendix 11).

As previously highlighted, all actions and intentions have adhered to Robert Gordon University's Ethics Policy (2016), (Appendix 7) ensuring standards were met throughout this process, and that those involved were protected from risk and negative consequences. Consideration was given at every stage, reviewed, and amended if necessary. An Ethics Form was completed and submitted to Robert Gordon University (Appendix 6). The lead supervisor was consulted as survey questions were completed and preparations were made to engage with the WSC.

3.3.2 Red flags

It was essential that all participants' health and wellbeing was safeguarded, and as such the following Red Flags listing was used as a reference, whereby if anyone displayed signs then extra caution was given and the removal of the participant from the research would occur. The following list is used as a reference guide, and has been generated from information shared by Inkster & DMHDIG, 2021; Del Duca, 2021; QualSafe (2022, online); Association of Coaching (2021, online); Hart, Blattner & Leipsic, 2001.

- Excessive paranoia, worry, or anxiety
- Aggression, accusations, and anger (negative tone)
- Long-lasting sadness or irritability
- Extreme changes in moods
- Social withdrawal
- Change in outlook that appears confusing, contradictory
- Dramatic changes in eating or sleeping pattern
- Unable to focus, engage and fully participate

'Yellow flags' is another term used when screening for psychological distress, but tends to be in relation to musculoskeletal pain and its associated impact to quality of life (Stearns et al, 2021). However, as the screening in this study is by a coach or mentor, the terminology of Red Flags is used (Association of Coaching, 2021, online; Hart, Blattner & Leipsic, 2001).

3.3.2.1 – Red flags triggered – real example

Mentees who gave permission to participate in the research were labelled on the password-protected documentation, as shared with the author. However, based on explicit permission by a BackUp member of staff via email to confirm permission, the author contacted said person (M5), to which email communication began, though quickly became apparent the person could not remember giving permission at first, then did finally recall when the name of the BackUp contact was given. It was explained to M5 they could withdraw consent for communication at any stage, but at this point, they continued. Through the duration of the email correspondence, to which M5 did share about their spinal condition, impact to quality of life, physical activities, motivators for wanting life to be better and general wellbeing, red flags, or warning signs, to poor mental health became apparent, and communication over a period of a weekend had to be carefully managed whilst signposting for support was made clear to safeguard their wellbeing (as highlighted in Chapter 3.2.2). Due to the nature of communication, it was suggested to M5 that now was not the time to participate, and was signposted to further assistance as well as asking about current support network, and that they were thanked for any input to that point, though highlighting their health and wellbeing was more important and it was essential to safeguard this. This approach and all supportive communications were appreciated by the person, who further communicated an explanation that their mental health was very poor, and was struggling to manage with life in general, and to which effective communication was important to aid recovery (Freytag et al, 2022; Hartley, 2015). They also said they had been open and honest with the BackUp contact about their deteriorating mental health, to which this was never logged and as such, they were put forward for the research.

The emotional effect from the interaction of this particular incident, which spanned over two days, was very challenging for both the participant and author. Due to the nature of the communication, outside help was sought, ensuring the right level of support and signposting to the person was achieved, and also how to safeguard own health from the emotional worries of what could be / could have been.

From the outset of this study, all participants were vetted before being welcomed into the research stage. This applies to all mentees too, where BackUp were the direct contact at this point in time, prior to direct contact with the author for the next stage in the research. All mentees were to be vetted by the charity prior to being asked to participate, and the error in decision regarding M5 was reported back to the charity. Process and due diligence regarding safeguarding mental health and wellbeing had failed in this case, and it was important to address, and help avoid a repeat, whilst also introducing a pathway to further help for those that require it, such as signposting to other professional, medical help, even if talking support has now ended. This matter has been left with BackUp, with the view of a tighter process being implemented.

3.3.3 Confidential information

As stated under Chapter 3.3.1, the Robert Gordon University's Ethics Policy (2016) was adhered to throughout this research (Appendix 7). All participant details remain confidential, with each patient being categorised under C, M or N (for Coachee, Mentee and Neutral respectively) and a number there after, eg, M1, C2, N3. At no time was there group sessions, instead, all qualitative research conversations have been conducted on a one-to-one basis via Zoom / Teams / Whatsapp video / phone call / email, and all times, identity, privacy and confidentiality protected. All notes with participants' coded reference have been kept separate from the reference document, which states the reference number and individual's personal details, and the research abides by GDPR laws. All notes taken have been destroyed following write-ups and agreement by the participant, with electronic notes to be destroyed on completion of the study. All coaching session notes have been destroyed, as no data from these were ever to be used as part of this research, instead those follow-up sessions had notes taken purely to assist during the session at that time.

3.3.4 RESSA – research ethics

The Research Ethics: Research Student and Supervisor Assessment (RESSA) form is annually updated, with the research student leading and research supervisor reviewing, before passing on to the Graduate School for feedback and sign-off. Due to the sensitive nature of the research area, the RESSA and research approach by the author was presented to and discussed with the Robert Gordon University Ethics Committee, whereby guidance was also given to ensure the safeguarding of health and protecting the anonymity of the participants. The RESSA form was last updated, reviewed, and approved once more by the university in December 2021 (see Appendix 6), following the Transfer Viva in October 2021.

The Transfer Viva discussions included challenging the ethical approach, especially as to how to safeguard the wellbeing of participants due to the subject matter and the impact on their life. Process was shared as to how confidentiality, anonymity would be ensured, and the clarity around sampling of participants, which would also play a part in lowering risks. As already discussed in sub chapters 3.2.2 Sampling and 3.3.3 Confidential information, extensive consideration has been given to both. Throughout this study, participants' details have remained confidential, datasets are anonymised, and participants personal details are kept separately and in a secure Cloud-storage area of the Robert Gordon University. All personal data will be deleted on completion of this research.

As discussed with regards to sampling, it was important to state at least 12 months post injury as the early stage of recovery can be raw for emotions, and time plays a part in the recovery and adaptation (Martz et al, 2001), with access to support being important (Koenen et al, 2017; Bryant et al, 2015). Furthermore, an initial discussion was had with participants, giving information as to what they could expect as well as to get insights into where they were with their recovery, physically, emotionally, and mentally. Should any Red Flags become apparent at this stage, they would be politely removed from the research for their own wellbeing (see Chapter 3.3.2). The safeguarding of the participants' wellbeing was essential throughout the study, and considerable effort was made to ensure they always felt comfortable discussing, engaging and being contactable at the different stages of the research. During the interviews, should a participant become upset, the interview was paused, even briefly, time was offered to compose, and they were asked if they wished to continue the interview. Of all the participants who participated in the interviews stage (*n=15*), the emotional upset applied to *n=10*. No one opted to stop the interview, instead all choosing to continue. To assist during this emotionally charged time, extra time was given for the participant to share what was on their mind. The Transfer of Registration to Doctorate (RDT) form acknowledges the focus that has been given to Ethics considerations (Appendix 12).

3.4 Reflexive thematic analysis

Thematic analysis methods are widely used in counselling, psychotherapy, and wellbeing research (Clarkson et al, 2023; Braun & Clarke, 2021), and in relation to this study, reflexive thematic analysis (Braun & Clark, 2018), also known as R-TA, has been used to identify themes / patterns in data that are important or interesting, to interpret and to give sense to the research area. R-TA gives flexibility, is not tied to a particular theoretical framework within the qualitative paradigm, and encourages inductive or deductive driven data coding and analysis (Braun & Clarke, 2019, 2006). R-TA is a more organic approach to coding, and to which there are six stages to the process, as shown in Figure 26 (Braun & Clarke, 2022, online; Braun & Clarke, 2018), and each are discussed in the following sub chapters in relation to this study, with Appendix 13 providing a R-TA personal log in relation to participant M3 as an example of additional reflexive notes taken during interviews, giving understanding to the data as these also included observations, and helped to provide further insights.

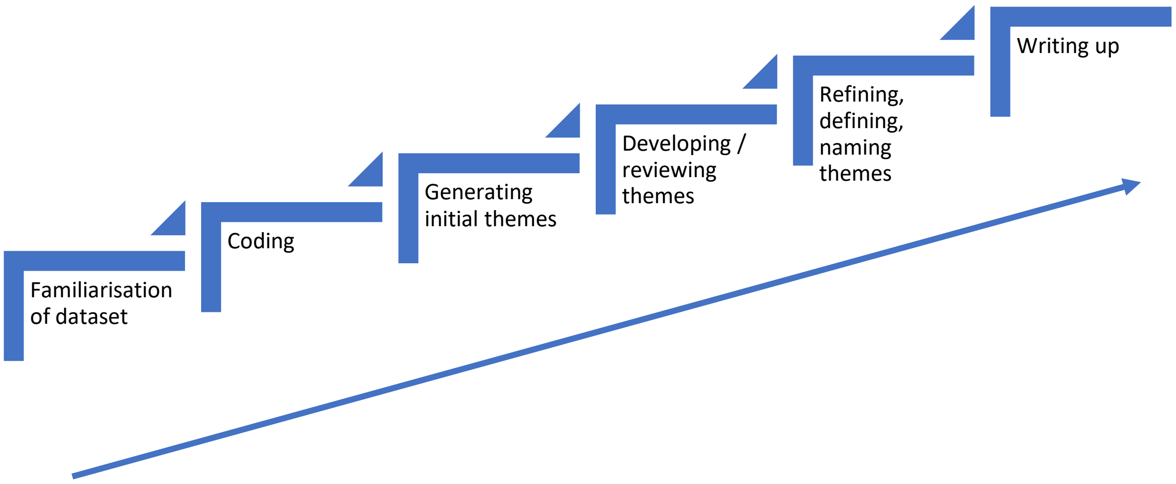


Figure 26: Representation of the six stages of Reflexive Thematic Analysis (Braun & Clark, 2020, online)

3.4.1 Stage 1: familiarisation of dataset

In relation to this research study, the R-TA's first stage of familiarisation of the dataset involved getting fully immersed in the data gathered from the qualitative research. It is important to note that prior to the familiarisation step, and as highlighted in Chapter 3.3.3, all identifiable information was removed from each interviewee’s transcripts, therefore only the data itself was shown and the assigned grouping code C, M or N and participant number. On multiple occasions during the familiarisation stage, the author re-read transcripts from sessions and the notes taken during and after, and documented insights on each dataset as well as the data as a collective. There was already a high level of immersion in information surrounding this research as it has involved extensive literature review (see Chapter 2), developing interview questions and schedule, engaging with the WSC to encourage participation, being coach to the Coachees for the duration of each program, carrying out the online interviews and transcribing, delivering the complimentary coaching sessions for Mentees and Neutrals participants, processing the three-month feedback, and making notes throughout. The interview stages made the subject area become more than words, as emotions, engagement, discussions, sharing, and rapport were abundant. Rich data was gathered and it is proposed such would not have been gathered should this have been a quantitative approach, as only through the interviews and natural flow of conversation around the question areas did emotions, thoughts, feelings, and insights become apparent (Alharahsheh & Prius, 2020) and could be captured as part of this study.

Due to this research having three distinct WSC groups, Mentees, Coachees, and Neutrals, there have been varying interaction, post-injury life experiences, and behaviours and motivations surrounding getting active, to which observations and insights are shared in the next chapter, Chapter 4. As mentioned, all notes and transcripts have been read several times, and it is through refreshed familiarisation of the dataset that patterns have been able to be observed (Crossman, 2021), that perhaps may have been overlooked, and to which are brought into the discussions with the view of bringing new information to the academic field. Furthermore, great care has been taken to ensure confidentiality and anonymity (see Chapter 3.3.3) of all participants, and ensuring no identifiable information is shared at any time, including that of accident details or specifics on rehabilitation or hospital stays. Reliability, validity, and bias of the data has also been addressed in Chapter 3.5. Appendix 13 is an example of additional notes taken, whilst remaining vigilant on the handling of sensitive data, ensuring any confidential or identifiable information is removed. Examples of observation and insights gained from interviews and notes include:

- Frustrations, emotions, negative language, including body language, were displayed during some of the interviews, including the areas of support network and medical support / access.
- The fear of showing the more vulnerable side due to not wishing those close to them to see the reality and to be judged.
- Details of the accident / situation that resulted in the spinal injury, and the associated discussions with medical teams and recovery.
- The motivating factors to get back active, especially where emotionally linked.
- Quality of life is impacted, but does not mean someone with a WSC cannot have a good, happy life.
- Most participants did not fully understand what coaching and mentoring would offer them as support, though gave openly, honestly to a level they were happy with.
- Talking support was appreciated by 100% of participants.

3.4.2 Stage 2: coding

As part of the analysis, all datasets were reviewed both manually and by using software NVivo, generating initial broad buckets / labels / codes, each of which highlighting areas of interest or importance. The full dataset was first manually analysed using a Word document printed out, highlighting text and writing codes in the margins as each line and sentence was read fully, looking for the 'cream' or essential information, as well as general data (Stern, 2007, p118). Codes were applied to those areas that it was felt were areas of importance for this study. This took time, as well as breaks to keep the mind fresh and focused, as the experience was the mind can get tiring reviewing and as such, can begin to skim over text or overlook rich data, thus potentially undermining trustworthiness (Birt et al, 2016). The written coding was then added to the Word document, highlighting the sentences, giving a further review process. The majority of the coding related to participants' language and understanding of their personal experience, such as 'judgement', 'being listened to', 'isolated', 'not listened to', 'feel alone', 'hopeful'. On completion of this manual process, it was discussed with one of the supervisory team, and discussions were had in relation to the notes taken during the review. This also included reviewing the coding, cross-examining the proposed coding and fine tuning, thus helping to reduce any potential bias (Ciammaichella et al, 2022; Smith & Noble, 2014).

Once complete, NVivo was used, whereby all the transcripts were uploaded to the system, again with no identifiable information stated. Firstly, a report was run to pull a report on words that were used most often throughout, and ensuring no bias or emotional attachment had been given to the transcripts. As was to be expected from initial codes that were generated, there was a broad, large pool of coding first generated, partly also due to NVivo pulling out keywords rather than populating in phrases to keep context of meaning. Many of the words were indeed highlighted in the manual Word version, and there was no variances to give concern over the rigour of the manual coding exercise. The process of reviewing the data and coding was completed a further three times, twice being manual to ensure full context, and once via NVivo. Through the examination of the data, patterns to coding was noted, which would be used in the next phase of generating themes and identifying relationships to the codes. The purpose of the review cycles was to ensure consistency, understanding, refinement, grouping and to cross-check findings whilst giving depth to the codes. Furthermore, to ensure no bias, this stage and the following three stages, were also reviewed independently and jointly discussed with one of the supervisors within the research team.

3.4.3 Stage 3: generating initial themes

After the completion of the initial coding, larger patterns / groupings were noted and examined. Initial themes were generated as part of examining the codes, thus organised in a way that brings sense (Braun & Clarke, 2018) to what participants shared of their relevant own experiences of living a life with a walking spinal condition. Themes and results are subjective and interpretative (Braun & Clarke, 2019) but does not mean they are not relevant, important nor insightful. This was an early stage review of themes, and each candidate's data was thoroughly reviewed to ensure no change of meaning or bias. To ensure this was the case, the process was shown and discussed with a member of the supervisory team, where reasoning was given for the themes and sub themes proposed at this stage. This was presented as a mind map, or thematic map given the purpose, and was manually drawn out to assist this process, to give understanding and clarity of the over-arching themes. The supervisor was patient, and challenged the work presented, encouraging reflection of the coding which was generated and analysed through NVivo software and manually (see Chapter 3.6.1). The analogy of themes being levels of a stage were used, from over-arching themes to theme and sub theme, each become more granular in detail.

3.4.4 Stage 4: developing and reviewing themes

The initial themes were now developed further, and aided by considering not only are the candidates' data applied to the themes, but also the dataset as a whole (Braun & Clarke, 2022, online). At this stage, the themes were further analysed and developed to ensure they were indeed relevant and addressed the research question. The thematic mapping became a table drawn in Word rather than the creative, manual mind-mapping approach used earlier, as this structured approach meant the over-arching themes, main themes and sub themes could be listed out clearly, showing relevance and the sub areas for each. As with the similar process of reviewing and defining codes, this stage saw themes being discarded, combined or split, depending on what information best represented the coding, on a candidate level as well as the dataset as a whole. (Braun & Clarke, 2022, online). Review cycle 2 and 3 of the coding are shown in Appendix 14a and 14b, with final outcome to themes revealed in Chapter 4.

3.4.5 Stage 5: refining, defining, and naming themes

Through the process of developing and reviewing themes, there were clear overlaps which required themes to be refined further, while mindful of the relevance around the research question. As part of this process, discussions were had with the supervisory team during in-person meeting, discussing the dataset, coding and themes generated to date, and how to bring further clarity to themes and sub themes. The naming of the themes were reviewed and adjustments made, bringing clear distinctions between groupings of ideas and coding, and as will be demonstrated in Chapter 4, they are supported by participants' interview quotes. Through this refining, defining and naming of themes stage, a structure around the research results has been created, one which brings transparency, direction and depth to what can be an emotive subject area (see Chapter 4).

The route of analytic output of themes allowed an unbias collection of codes, avoiding the purposeful pulling of data in a direction, with the resulting themes being a representation of the codes of the data. Furthermore, the rigour of the dataset was tested, discussed, and supported at each stage of the reflexive thematic analysis as a result of working closely to the supervisory team, and the expertise of one particular member who ensured consistency, engagement and to challenge with the view of delivering a stronger R-TA process as a result.

3.4.6 Stage 6: writing the report

This final phase of R-TA involves bringing together all the data and narrative extracts, and being able to contextualise with the key existing literature, bringing relevance, contributing to knowledge by giving a greater understanding to a subject matter (Braun & Clarke, 2022, online). The author's reflexive thematic analysis log (see Appendix 15) assists in giving greater understanding to the above, highlighting further challenges and considerations of handling and analysing the data, including the observations, thoughts, and insights. The results and discussions following the themes as identified through the T-RA, giving a flow and understanding, guiding the reader through the evaluation of the data, which also involves visual aids to assist, as well as referring to relevant theoretical models. Conclusions therefore follow (see Chapter 4).

3.5 Reliability, validity, and bias

Reliability, validity, and bias are three aspects to consider during a questionnaire's design and implementation (Saunders, Lewis & Thornhill, 2019), with a degree of bias to be expected and exists in all research (Smith & Noble, 2014), as each person has their viewpoints on subject areas. Bias, according to Oxford Dictionary (2022, online) is defined as:

- *A "concentration on an interest in one particular area or subject".*
- *An "inclination or prejudice for or against one person or group, especially in a way considered to be unfair".*
- *To "cause to feel or show inclination or prejudice for or against someone or something".*

Considerable effort has been made to minimalise the likelihood of bias within this research, even though the researcher / author has their own experience of traumatic spinal injury, recovery and impact to life, wellbeing, and activities, and as such, has acknowledged and set aside any potential assumptions (Fischer, 2009). However, it is from said experiences, plus the desire to help others as well as bring this topic firmly within the academic field, the author has reached deeper levels of reflection (Tufford & Newman, 2010), and the research has developed and uncovered new understanding of the WSC and their behaviours and motivations in relation to physical activity. Furthermore, the collaboration with BackUp (see Chapter 3.2.8) in relation to mentoring was carefully approached, ensuring any discussions and agreements on interview questions were valid, and the rigour and credibility of the study was safeguarded. This can also be demonstrated when BackUp asked for changes to be made to questions once the research was live, to which was refused with explanation, and when the team further made the decision to change their approach to measuring effectiveness of their mentoring service, which resulted in an agreed timeline to end the agreement. Throughout the agreement, regular contact was made, with process evaluated and any issues flagged immediately.

The research design has been based on literature review, accepted methodology, purposeful sampling, with the aim of bridging gap in knowledge within the academic field. The semi-structured interview questions enabled rich data to be gathered, where participants had freedom to express their thoughts, emotions, experiences, and it is acknowledged the information shared is subjective (Marrow, 2005). As an inductive approach was used, there was not an initial hypothesis to prove / disprove, but instead initial observations and patterns recognition led to initial theory to which the data analysis influences the suggested theory.

In justifying interpretations, trustworthiness criteria (Guba & Lincoln, 1982, 1989; Lincoln & Guba, 1985) has been considered and applied:

Scientific, rationalistic paradigm (rigor)	**Naturalistic paradigm (trustworthiness)**
Internal validity	Credibility
External validity	Transferability
Reliability	Dependability
Objectivity	Confirmability

Table 17: Trustworthiness criteria (Guba & Lincoln, 1982)

Credibility – this paradigm explores the plausibility of the study's findings, and considers various factors, including long-term engagement with the participants, peer examination, depth of observations, and triangulation of data by use of different sources, methods (Guba & Lincoln, 1982; Schwandt, 2007).

Transferability – as part of the trustworthiness criteria, transferability considers the ability to apply findings to similar environments. The scientific paradigm is for generalisation, in that the data collected represents the population to a degree, to which generalisation can be given. The naturalistic paradigm discounts generalisation, but instead still supports transferability is possible when supported by enough depth of data (Guba & Lincoln, 1982).

Dependability – this paradigm from the naturalist standpoint means stability, and is achieved by consistency and accuracy, and the reader can follow the research and determine if the results are dependable. Reflexivity is essential, acknowledging the researcher's role, and that prior experiences, assumptions and belief systems can influence the process, thus it is important to demonstrate procedures and reasonings, and how conclusions have been made. Again, triangulation of data and peer debriefing are part of the strategies applied, to give weight to dependability.

Confirmability – as mentioned in the dependability overview, prior experiences, assumptions and beliefs can influence the research process, and all research has some degree of bias (Smith & Noble, 2014). Being explicit about possible bias, addressing these where necessary, is important, as well as external review by peers to ensure rigour of research.

By applying the naturalistic paradigms, any perceived bias has been addressed, including the past experience of the author, and to ensure any opinions or beliefs surrounding the subject matter are not shared nor reflected in the interviews, literature analysis or conclusions. Utilising the author's coaching expertise has been a helpful skillset for this research, as the art of listening, being able to gain deeper understanding with follow-up questions, and leaving any personal aspect outwith the realm of discussion is very much a learned and well practiced technique. This has ensured a true reflection of the participant, as well as valuable coaching experience.

As also mentioned earlier in this chapter, although research analysis was first undertaken manually, with cross-checking by one of the supervisory team, NVivo was also used to further understand the data, cross-check and again given external review by the supervisor team, all of which to ensure rigour of data.

3.5.1 Medical input to proposed WSC size

During Chapter 2, the literature review, as well as aided by governmental and industry reports, gave contradicting guidance as to the potential size of the spinal cord injury community, with no data being available as to the size of the WSC, either in Scotland, England, UK or even globally. It was through the review that it was clear the WSC is a growing population (Aspire, 2021, online), and that there are varying treatment and support options for those who have sustained such an injury, with not all being admitted to a spinal unit (Queen Elizabeth National Spinal Injuries Unit Report, 2020, 2021). As such, using the basis of the equation for global SCI cases each year (Barbeau et al, 1999), and comparing data to the spinal injury reports, a different equation has been proposed, one that aligns to the numbers presented. With lack of academic input as to the equation for the WSC, senior orthopaedic consultants were asked to share their thoughts about the proposed equation, and to gain feedback based on their experience and the research they have available. Only one consultant (Craig, 2021, email) to date has engaged and confirmed in writing the proposed 80 to 120 new spinal injuries cases per million per year, with two other consultants agreeing to discuss in the near future. A clinician at Glasgow SIU (MacLean, email, 2019) was also contacted for verification and evaluation purposes surrounding data, and stated there is a proportion of the WSC neglected in literature, and that no concise data has been gathered on the number of those regaining walking abilities. Furthermore, models to predict walking ability are not conclusive, with varying discrepancies discussed (Phan et la, 2019), hence the suggested WSC size of population as presented in Chapter 2 has been approached with caution. However, the information as discussed in Chapter 2 Literature Review is based on academic and industry data, and challenged through the information gathered through the main spinal unit centre in Scotland and discussions with the senior medical consultants. It does give the opportunity for further research within this specific area.

3.6 Analysis plan

An analysis plan was created, helping to provide a roadmap for organising and analysing the research data, as well as giving structure to the main component of this thesis. The plan involves manually analysing the data, as detailed above, as well as using software Nvivo, both of which assisting analysis, collating information, and enabling an assessment of trends within the responses. The volume of data can appear overwhelming but having a plan in place has ensured focus on the overall questionnaire set at the outset. Considerations include:

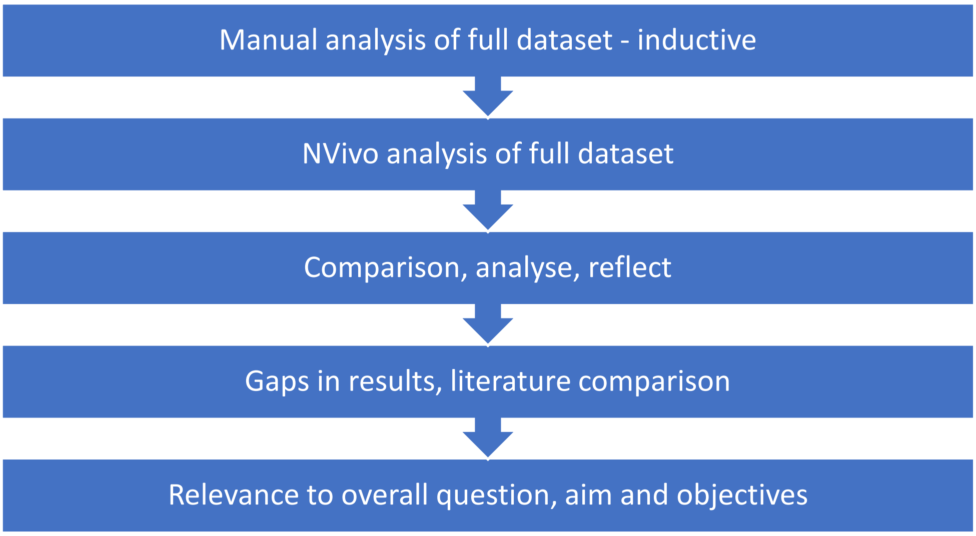


Figure 27: Analysis plan

3.6.1 NVivo20 software

As already stated, NVivo software has been used to aid the thematic approach, and in this case version 20 was the most current version. NVivo enabled an electronic system for analysing the data by uploading to the software, interacting and being able to compare data collection from all three groups, mentees, coachees and neutrals, looking for and organising patterns, similarities, and differences. NVivo proved to be very helpful when considering codes, themes and sub themes, and to which could be then cross checked with the manual analysis that was also undertaken, and themes could be filtered further where necessary, pulling such results out as codebook (Appendix 14a, 14b).

The visualisation of the datasets had made NVivo use helpful in being able to view patterns, to tighten themes and sub themes. For example, through analysis and revisiting the dataset over a period of time, what was an over-arching theme of Wellbeing was questioned and analysed frequently, and later became a theme under a new code through manual means (see Chapter 4). Using NVivo and reviewing manually has allowed fresh perspective and tightening of the analysis.

Connection of information has been aided by the use of NVivo, particular due to its assistance in making the data visual. However, it is important to note, it was never to be the case that NVivo was to undertake full qualitative analysis as manual analysis was deemed important, instead NVivo was to be a tool to aid coding and themes to be created, assessing datasets and to have an electronic accessible information (Bazeley & Jackson, 2019).

3.7 Reflexivity of research journey

This research journey has been one of insights, understanding as well as many emotions shared by all participants due to the highly emotive nature of the subject area. Throughout the research, the author has been determined to give the WSC participants the opportunity to share their own experiences, thoughts, emotions, and perceptions of having sustained a walking spinal condition and life as a result, without bias nor judgement. A safe environment was given during each interview and the relevant coaching sessions, allowing the exploration of the subject and the encouragement of open, honest discussion and sharing, with the view of gaining deeper understanding to the topic area, thus contribute to knowledge.

Although at least 12 months have passed since the sustained accident / spinal injury, each participant continue to manage their conditions, and the physical and psychological impact (Sweet et al, 2021; Hoffmann et al, 2019). As shared earlier in Chapter 3, the author has their own personal experience of sustaining a traumatic spinal injury and subsequent challenging recovery, and shared this information with participants to build rapport and trust (Tufford & Newman, 2010), yet also remaining vigilant to address any bias, whilst also ensuring the wellbeing of participants was safeguarded throughout the process (Chapter 3.1.1 and Chapter 3.6).

During the interviews. heightened emotions of frustration, anger, fear, upset, sadness were shared, as was joy and happiness. The author had to navigate very challenging territory, providing necessary support, empathy, and also offering the sessions to pause should that be required. However, even when there were tears and sadness, and the author offered a break to the interview, no participant wanted to stop the session, instead appreciating the opportunity to be listened to and supported where appropriate. As later discussed, signposting to further professional support was given to all, ensuring there were options for each participant to seek help or support should they require. Professional, medical advice was sought regarding one participant (M5), as discussed earlier in this chapter, 3.2.2, where communication highlighted low mood, poor mental health, and an escalation of negative outlook. Although this spanned a full weekend and proved to be very challenging emotionally, the author provided support and signposting, monitoring communication, and ensuring no indication was given to hurt themselves at this time. The author was aware that should there be any threat to life, they could reach out to emergency medical professionals and pass on the personal details, however the communication from M5 did not indicate self-harm was feasible at that time. The author took reflexive notes of each participant interview, including what was discussed and the emotions shown, outlook and language, with the purpose to give greater understanding of each person's lived experience and perception (Rees, Sherwood & Shields, 2021; Alharahsheh & Prius, 2020). An example of this is given in Appendix 13, whereby the notes shared refer to participant M3, and assisted in giving context and deeper understanding to the transcript.

Whilst it was imperative that the wellbeing of each participant was safeguarded, it was equally important for the author to protect themselves. As a result of the highly emotive discussions, the author used various techniques to process the experiences and to be able to compartmentalise, thus protect their own mental health (Williams et al, 2014). Examples of such techniques used included going for long walks in the countryside to give the space to think and process; speaking with their accredited coaching supervisor; speaking with a medical professional, as well as speaking with the supervisory team, whilst never divulging identifiable details of the participant. Due to certain emotive discussions revealing graphic experiences, the author did have to take a break of days between sessions, giving space to reflect, process and ensure boundaries were continually maintained, including ethically and morally.

Throughout the duration of this study, the author had to find ways forward to address the aims and objectives, manage the methodology, which included working with a third party to access mentees, as well as approach the literature review from academic and industry point of views to ensure depth of knowledge, ascertain gaps, and be clear on purpose, avoid bias, and let data drive the analysis discussions and conclusion.

3.8 Chapter summary

This research is based on an interpretivist paradigm, which explores specific observations, patterns, initial theory, and proposed theory as part of the inductive approach, giving a voice to participants to share thoughts, emotions, and experiences. Sampling is explicit in that participants must be adults (over 18), there has been at least 12 months since the sustained spinal injury, are living in non-medical premises (ie, not hospital or respite, but home), and for two groups, to have undertaken a coaching or mentoring program. The third group, Neutrals, have not experienced such talking support, and participate to get their views on getting back active after sustaining their spinal injury.

Access to the sampling group of Mentees, Coachees and Neutrals was challenging, as there is no one capture point to reach this audience. Coachees found out about the research via social media, medical teams, and networks, and the same applies to Neutrals. As a way to reach the mentoring community, and have depth of understanding as to their mentoring program, third party BackUp were engaged with, whereby their own mentors delivered the mentoring programs, data was collected, and mentees were offered to engage in this research, to which the author then directly dealt with each participant.

The pilot study was an essential part in the preparation for the main study, and raised the issues of recording sessions in relation to the impact to others and the decline of participation should that request be mandatory. Questions were also reviewed and amended thereafter, to give more depth, and ensure alignment to overall objectives of this study. It was also through the Pilot study that the flow of non-recorded, semi-structured interviews could be tested. It is believed the Live study is far stronger as a result, and there has been considerable care taken to protect wellbeing and anonymity of all participants, provide access points to help. Cross-checking manual and NVivo thematic analysis with the supervisor team, discussing findings and being able to justify reasonings for decisions has lessened the influence of bias, and brought rigour to the research.

Furthermore, the distinct phases of research have enhanced the rigour as well as depth of understanding, where although there was semi-structured interviews in Phase One, the following Phase Two enabled a consistent, safe environment to share, gain depth of knowledge, as all sessions were led by the author, who offered unstructured, unrestricted relevant discussions regarding their emotions, thoughts, outlook, and experiences. It is believed the rich data that was gathered was only possible from the chosen methodological approach.

Chapter 4.0

Research Findings and Discussion

4.0 Introduction

With the analysis of qualitative data complete, this chapter discusses the primary research findings, whilst integrating with the existing academic literature, as highlighted in Chapter 2. It provides a comprehensive review and discussion of the thesis topic, *"the impact coaching and mentoring has on Walking Spinal Community's behavioural change and motivations in relation to being physically active",* and addresses key research questions as highlighted in Chapter 1.

This chapter firstly addresses the demographics of the participants (*n=15*) and the semi structured interviews, which were undertaken in two distinct phases as highlighted in Chapter 3. The discussion and analysis of the qualitative research data itself then follows, focusing on various factors impacting the resultant activity levels of the walking spinal community, including discussing coaching and mentoring as a support mechanism, perception of benefits of engaging in activity, influencing factors to the walking spinal community's motivations and behaviours, whilst reflecting on the importance of findings for health support mechanisms and the contribution to academic knowledge. Following the research findings discussion, sub chapter 4.7 discusses and provides an overview on the overall feedback and ratings for the initial 10 questions as asked at the start and end of coaching and mentoring programs. The request for ratings and discussions was to help ensure consistency during Phase One of the research, where the author was not in direct contact with participants, and the data could be used as a discussion area during Phase Two. The chapter summary brings this section to a close.

As shown in the following Table 18, four overarching themes, and subsequent themes and sub themes for each were identified from the primary research through a process of reflexive thematic analysis (Braun & Clarke, 2021), supported by the reflective log (see Appendix 15), and aided using NVivo software.

	Theme	**Sub themes**
Coaching and Mentoring talking support	Benefits of Coaching and Mentoring Talking Support	Depth of support & perception of support
		Tools and techniques
		Motivations / actions
		Being listened to
		Improved mental health
	Limitations of Coaching / Mentoring	
	Limitations of not having Coaching and Mentoring Talking Support	Perceived impact to recovery and support
	Theme	**Sub themes**
Impact of walking spinal condition	Wellbeing	Psychological
		Physical
		Social
	Pain Management	Physical pain
		Impact on activities
		Perception of pain
	Theme	**Sub themes**
Engagement in physical activity	WSC's behaviour & motivations	Motivators to activities
		Barriers to activities
		Outlook, perceptions and desire
		Activity choice (incl indoor/outdoor)
	Theme	**Sub themes**
Signposting and support network	Access to participant-found talking support	Social support - friends and family
		Self-found medical support
		Perception of support outwith medical route
		Charity support
		Other (social media platforms, groups)
	Access to further medical specific support	Engagement with medical services
		Perception of support

Table 18: Themes generated from the qualitative research

Each theme is discussed separately, supported by relevant participant quotes and linking to literature review, which use C, M and N to distinguish between the groupings of Coachees, Mentees and Neutrals, with numbering to directly link to each participant whilst ensuring anonymity (eg. C1, M2, N3). Furthermore, the following colour codes are also used to assist in separating the three groupings when reviewing:

Coachees - **blue**

Mentees - **orange**

Neutrals – **green**

The following sub sections are written in order of referencing weighting, and gives clear structure and understanding to the data presented. Firstly, the author discusses the overall demographics of the participants as a whole, before discussing the findings of the qualitative research they order as indicated in Table 18 and the below summary (Table 19), which states overarching themes in relation to weighting of participant referencing, highest first, with points 2 and 3 being of very similar level:

Sub sections – overarching themes
1.Impact of coaching & mentoring as a talking support
2.Impact of walking spinal condition
3.Engagement in physical activity
4.Signposting and support network

Table 19: Overarching themes in order of referencing weighting during qualitative research

As shown above, the first sub section to be discussed is the Impact of Coaching and Mentoring as a Talking Support, with themes highlighting benefits, limitations, as well as perceived impact of not being offered this support. Next in the referencing table is Impact of Walking Spinal Condition, with general wellbeing and pain management being key focal areas, and to which subsequent sub themes were generated from the thematic analysis, as shown in Table 18. The third to be listed in the above Table 19 is Engagement in Physical Activity, to which the theme of Engagement of Physical Activity: Behaviours and Motivations sits, with sub themes giving focus to both activity and psychological understanding, rather than looking separately, as first viewed during earlier manual thematic analysis. When these were reviewed again in Nvivo, using codebooks to give clearer breakdown of themes and sub themes, it became apparent that themes could be merged to become more coherent, with the sub themes providing a more in-depth understanding to relevant attributes from physical and psychological perspective. The final area to be discussed, as identified through reflexive thematic analysis, is Signposting and Support Network, and although this main theme has the least number of references and discussed as part of the thematic analysis, the data gives importance and thus has been assigned a category in its own right, whilst also being frequently referred to as part of other three areas.

The discussions around each area also include relevance to theoretical models, and as highlighted in previous chapters, two in particular are considered as being interlinked, Transtheoretical model (Prochaska, DiClemente & Norcross, 1992) and COM-B model (West & Michie, 2020). The basis of each model enables an understanding to behavioural change and how this is managed (see Chapter 2). The relevance of these models, as well as other change theories, are considered throughout the analysis, with a new theoretical framework latterly proposed as a result of the rich data and analysis undertaken.

4.1 Participant responses to demographic questions

As discussed in Chapter 3 (3.2.2), all participants must fit key criteria before any further engagement is permitted, as such the following can be confirmed:

- Participants sustained a spinal injury as a result of an incident / trauma (eg. car accident, sports incident, fall).
- All participants were over 18 years.
- Spinal injury occurred at least 12 months prior to interviews.
- Participants are UK based.
- Participants formed one of three groupings – those who have received mentoring (Mentees), those who have received coaching (Coachees), those who have received to talking therapy support (Neutrals).
- Participants were physically active prior to the said injury.
- Participants are willing to discuss physical activity engagement and changes experienced as a result of said spinal injury.
- Participants were willing to discuss perception of life now and in the future.

On applying and being accepted to participate, all participants were asked specific Personal Information / demographic questions, and all understood that their information would remain unlinked to their M, C or N responses, keeping anonymous and unidentifiable. A summary of the personal, non-identifying information is as follows:

Age

The youngest participant of this study was 21 years of age, with the eldest being 65. This age range also is consistent with other SCI research, who allow the larger population to be targeted (Vinovski Thomas et al, 2019; Bailey et al, 2015), though not all papers have stated age range (Lawrason et al, 2022).

Gender

Ten females and five men took part in this research.

Location

All participants were based in the UK, in particular, from Scotland or England. No participants were from Wales nor Northern Ireland, and only because no volunteers came forward from these countries.

Where spinal unit or spinal rehab centre engagement had to take place, travel and distance from family was involved in 100% of cases. Distance to medical support has not been included in this research, as it would mean a change to questions to all participants and this line of research was not agreed with by BackUp, who deemed this irrelevant and as such, would not agree to changing their Mentoring program questions (see Chapter 3.2.8).

Year injury was sustained

Each participant was asked to state the year they sustained their spinal injury, and they were welcomed to provide further details should they wish, but were made aware this was not required for the study. The earliest injury took place 1996, the most recent 2021, with such recent injury being at least 12 months prior to engagement with this research. Eleven of the 15 participants sustained their spinal injury within the last five years; three were within 10 years, and one was over 20 years, all of whom have ongoing spinal management. It was also important to gain the year of injury as the criteria for participation in this study is very clear, and at least 12 months must have passed since injury (Chapter 3).

Reasons for sustaining spinal injury

As part of the above question of length of injury, all participants shared how they sustained their injury, and includes fall outdoors (*n=3*), fall in the home (*n=4*), car/road accident (*n=2*), work accident (*n=1*), sporting accident (*n=5*).

Desire to be active

All participants were made fully aware at the outset of the research study's purpose, and were asked about their own perceptions, behaviours, and motivations surrounding getting physically active and the challenges around their spinal conditions. All participants stated they did have the desire to be more active, highlighted the change of participation between now and pre-injury, and also shared personal reasons as to why they believe being active matters.

As WSC literature is limited, the above demographics is considered as enabling a population sample where both men and women are included, with a wide age range, from 21 to retirement, and is reflective of the WSC, where there is no age barrier or gender orientation barrier to injury. Given the focus on being physically active, each participant shared the desire to be more active, and readily provided insights into life pre- and post-injury.

4.2 Semi-structured questions discussion

Before examining each of the themes as highlighted above, first to be further discussed is the semi-structured questions as used in the qualitative interviews, (Chapter 3). Both coachees and mentees groupings by nature of the participation were able to advise on ratings on the questions posed, see Table 13, as first discussed in Chapter 3, and shown again below. The reason was to ensure continuity of discussions due to a third party being used for the mentoring program, and to which formed part of Phase One. However, it was the rich data as shared with each question that is the foundation of this research.

Initial 10 questions / prompts – asked before / after
1. I feel positive about the future (1-10 rating)
2. I feel supported by the people around me (1-10 rating)
3. I have the opportunity to go out / engage in meaningful activities (1-10 rating)
4. I feel confident about my situation and moving on with my life (1-10 rating)
5. My rating of my general wellbeing (1-10 rating)
6. I feel connected with someone in a similar situation (1-10 rating)
7. I feel motivated to take part in some physical activity (gardening work etc not necessarily linked to exercise) (1-10 rating)
8. What changes has your spinal condition brought in relation to your activities, sports, hobbies?
9. To what level do you still consume / participate any activities? (1-10 rating)
10. Feedback / discussion surround Qs 1-9
Additional questions – post talking therapy program
11. Describe the impact coaching has made on returning to physical activity
12. Have you previously been offered Mentoring or other talking support? (describe, discuss)
13. Please provide any further feedback (open question to all aspects they wish to discuss)
3-month follow-up
14. 3-month+ follow-up discussion and feedback

Table 13: Interview questions listing - initial 10 questions / prompts to all research participants, plus further three questions for end of program, and Q14 being follow-up session as one further final follow-up after 3-month mark

The purpose of asking these particular questions was to gain deeper understanding of behaviours, motivations, perceived challenges to physical activity, as well as impact on wellbeing (Simpson et al, 2020), all of which were formed as a result of the initial literature review, with examples of literature relevance being shown in Table 8, in Chapter 2.6. The questions helped to provide a benchmark and consistency of questioning during Phase One, where the participant shared their perceived starting and end of program ratings against each question, and then Phase Two, at the 3-month follow-up stage, assessing the overall impact and change following the completion of the program (see Chapter 3.2). Although the semi-structured interview style allowed discussions around each, the rating of 1-10 meant there was a guidance on each person's outlook to each answer, a scale those within the spinal community are used to due to pain scales (Bakshi, Rathod & Salunkhe, 2021), and to which also assisted in the later interviews at the end of the programs. Such findings from the ratings will be discussed in Chapter 4.7. It is important to highlight focus in the analysis is given to the 3-month stage (Phase Two), as this is where both mentees and coachees have finished their corresponding programs, are now in direct contact with the author, are reflecting on changes over the following months since these completed, and where depth of data is gathered through discussions. This phase enabled a greater depth of understanding as to whether they can maintain any positive outcomes or if they slide due to not having that regular contact with the support mechanism.

The themes of this qualitative research, as shown in Table 18, will now be discussed in the following sub chapters.

4.3 Coaching and mentoring talking support

Literature has highlighted the positive outcome for those receiving coaching and / or mentoring to include being empowered to make change, decisions and do what is right for themselves (Hayden, 2021; Houlihan et al, 2016), and also demonstrated the increase in popularity to engage in talking support (Al Hilali et al, 2020), whilst being able to share and having a trusted sounding board (Sweet et al, 2021). The reason for stating coaching and / or mentoring is that the mentees were offered complimentary coaching session as a thank you for participating, as with all the groups, and therefore mentees got to experience both types of talking support, whereas coachees and neutrals experienced only coaching as part of this research.

The primary research examines the impact in relation to behaviours, motivations surrounding getting back active, with Coachees, Mentees, and Neutrals participants all given the opportunity to give share their experiences, challenges, and outlook in general, giving a voice to this population. To help the analysis of Coaching & Mentoring as a Talking Support, the thematic analysis aided in generating three themes (benefits of such talking support, limitations of such talking support, and limitations of not being offered either) and a number of correlating sub themes, as shown in Table 20, to which will now be discussed:

	Theme	Sub themes
Coaching and Mentoring talking support	Benefits of Coaching and Mentoring Talking Support	Depth of support & perception of support
		Tools and techniques
		Motivations / actions
		Being listened to
		Improved mental health
	Limitations of Coaching / Mentoring	
	Limitations of not having Coaching and Mentoring Talking Support	Perceived impact to recovery and support

Table 20: Coaching & mentoring talking support themes and sub themes

4.3.1 Benefits of coaching / mentoring

Through reflexive thematic analysis (Braun & Clarke, 2018), using both manual and NVivo analysis approaches, five sub themes were generated, all of which were highlighted by participants to be reasons as to why coaching / mentoring was a positively impactful experience to their lives. Of the five, two shared the most referencing points, ‘depth of support and perception of support given’, as well as ‘learning tools and techniques’. The next two which share the same weighting of referencing is the motivation and actions the talking support enables, and being listened to and with no judgement. The fifth sub theme is improved mental health as a result of the support given and the changes made to behaviours. The following figure illustrates the five areas and their corresponding weighting of references throughout the transcripts.

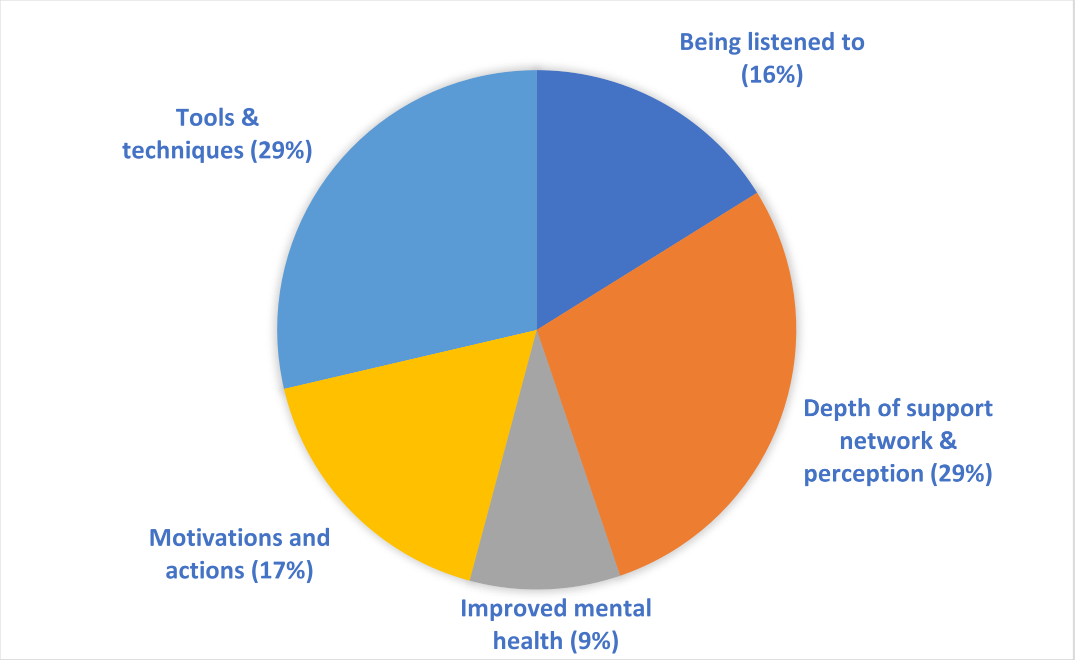


Figure 28: Benefits of coaching – sub themes

Given the depth of literature review (Chapter 2), the sub themes generated were not unexpected, albeit the weighting to one in particular was – improved mental health, to which is common amongst those who sustain a spinal injury (Cadematori et al, 2021; Rethorn & Pettitt, 2019; Rocchi et al, 2018; Gassaway et al, 2018; Gassaway et al, 2016; Iles et al, 2011). However, having gone through the analysis manually and also using NVivo software, careful consideration had to be made for statements by the participants, and on numerous occasions, the statements could be placed into several sub theme groupings. However, when reviewing, it was encouraged that only one theme / sub theme must be selected and not be placed in multiple areas, with theme considerations also highlighted by Braun & Clarke (2018). Mental health was an apparent theme across all participant responses, and general wellbeing became its own theme. However, for the purpose of what is being highlighted as a benefit of coaching / mentoring, 'improved mental health' was stated as being one such benefit.

Furthermore, when examining the sub themes of benefits of coaching and mentoring talking supports, the PERMA wellbeing theory model by Seligman (1998), as shown in Figure 3, Chapter 2, can be linked into these areas, whereby the sub themes are relatable to several of PERMA components:

PERMA components	**Benefits of coaching / mentoring: sub themes**
P – positive emotions	Depth of support and perception, Tools & techniques, Motivations & actions, Being listened to, Improved mental health.
E – engagement	Depth of support and perception, Tools & techniques, Motivations & actions, Being listened to, Improved mental health.
R – positive relationships	Depth of support and perception, Being listened to, Improved mental health.
M – meaning	Depth of support and perception, Tools & techniques, Motivations & actions, Being listened to, Improved mental health.
A - accomplishment	Depth of support and perception, Tools & techniques, Motivations & actions, Improved mental health.

Table 21: PERMA related to sub themes of benefits of coaching / mentoring

As stated earlier in this thesis, the PERMA theory is an updated theory of wellbeing, where positive psychology is used to not just improve personal happiness but the ability to flourish in life (Seligman, 1998). It is perhaps no surprise that the generated sub themes of benefits to coaching / mentoring do indeed correlate with PERMA theory model (Seligman, 1998), as ultimately participants were looking to move forward with life after sustaining their spinal condition. For example, C2 outlined *"…coaching is not about looking back to relive, but learning to understand and move forward, look ahead and put positive energy in our path. I felt this from the start"*, and *"I look at things differently as a result of this coaching"*.

Participants had their own personal reasons for initially engaging in the talking support, and the themes and sub themes highlight areas of commonality, and these are supported through the extensive literature review (Chapter 2). Each of these sub themes are now discussed, giving evidence from participants as well as relating to literature, both academic and industry papers.

4.3.1.1 Depth of support network and perception of support given

In relation to Table 21, sub theme Depth of Support Network and Perception of Support correlates to all of the PERMA theory (Seligman, 1998) components: positive emotions, engagement, positive relationships, meaning, and accomplishment. When considering each, the author has carefully reviewed the transcripts, and it became apparent behaviours and wellbeing are indeed entwined in the impact of having improved depth of support, though of course, there are many factors to consider as to wellbeing influences, but the ability or opportunity to talk to someone who directly understands a personal situation positively impacts wellbeing, self-efficacy, and empowerment (Gupta et al, 2019; Gassaway et al, 2016; Divanoglou & Georgiou, 2016).

Although psychological needs of the SCI community are readily monitored (Chemtob et al, 2018; Gassaway et al, 2018; Rocchi et al, 2018), it has become apparent through the qualitative research this is not the case for the WSC, yet participating in coaching / mentoring did give a connection, a level of support (C5: *"I wouldn't have seen my life through this lens if I hadn't done this coaching"*), and encouraged to expand the support network, to which also Neutrals experienced benefit from the complimentary coaching session offered by the author (N4: *"Thank you for listening. For supporting. And for helping me break down the barriers in my mind"*). The support was viewed in varying ways, including support, understanding, and signposting regarding pain management and activity engagement (AlMazrou et al, 2020), and praised for giving participants a safe, non-judgemental space to speak honestly. This has been highlighted by C4: *"… you have never judged me, only tried to help. And you have helped"* and C3: *"supportive talks, not be shot down in flames",* both of whom share they were given space to share and be listened to, without judgement or being challenged, and N3 sharing they would have appreciated this type of talking support beforehand, but were unaware of it, and *"have greatly benefitted from the coaching session"*. All participants shared the commonality of feeling a sense of connection and understanding, something that was desired yet not always achieved.

Of the initial questions asked to the participants, questions Q2 ('I feel supported by people around me') and Q6 ('I feel connected with someone in a similar situation') are relevant for this sub theme, as they look at the support network in general and being connected with someone in similar situation, yet on review, also shows this does not equate to the feedback being given as a 'benefit of coaching and mentoring'. But it is important to examine and give some understanding to these specific questions. With regards to Q2 from initial ask of questions at the start of the coaching program to the end, all coachees perceived a maintenance or improvement in being supported by others around them, to which was no surprise to the author given the direct input of the coaching program itself. Maintenance or improvement was also experienced surrounding support network and being able to ask for help as part of the discussions, with C4 sharing they are *"making more effort with friends"*, as they could understand action was needed and what could help make improvements in such areas. The positive behavioural changes and outcomes are further supported by C4: *"Now it's (life) better and I want to make this year a good one. And take those stepping stones we speak about, I'm already doing this. I am slowly getting life back the way I want it"; and similar sentiments from* C2: *"The last three months have been rather remarkable", "I didn't quite expect the result of the coaching program to give me a feeling of buoyancy as well as a greater voice for myself".* The coachees have made not only talked and be listened to, but have taken action to bring change to their own behaviours and subsequently, this has filtered into other areas of their life, bringing further positive changes.

Interestingly, there is far more variable to the outcomes or changes from the mentees who participated, and this may in part due to the big gains during the mentoring program then perceived lapses when this talking support relationship ended, thus no longer engaging with the mentor, with feelings of isolation resurfacing again.

When reviewing the mentees data for Q2, only M2 shared that they saw an improvement in this area of support, whereas the other mentees shared there was a decline in support from others, which also impacted perception and their life choices. However, part of this may be due to no longer being part of a mentoring program, thus there could be considered a loss of support to be listened to, with little guidance to move forward, and this was given weight by M1. However, M2 highlighted the benefits of engaging in mentoring, stating:

"they (the mentor) helped me talk about what I missed about that person (pre accident) and helped me realise I wasn't completely gone, I was just different", and M3 gaining clarity: "I did appreciate the opportunity (of mentoring program)", "It has helped me understand".

When examining the rich data to Q6 ('I feel connected to someone in a similar situation') over the full duration, and not just that of the talking support program itself, both groupings saw a mix of outlook, though coachees remained more positive and consistent, whereas mentees saw greater variations and this may be attributed to connecting with the mentee themselves, who are sharing about their own spinal injury and journey, and not about those around them in general, as highlighted by M3: *"It was the first time I got to speak to someone in a similar situation"*, which they said brought a sense of peace and connection rather than feeling alone, and M1 stated: "she (mentor) used her experience, she gave encouragement", which they said was appreciated, relevant and helped to build confidence. With coachees sharing a consistency regarding the connection to someone in a similar situation, it is proposed this is due to the coaching program not giving focus on the injury nor accident, but about moving on (Wefald, 2021; Houlihan et al, 2016; Cornett et al, 2009), so although there is likelihood of association of similarity with the coach, building a social support network is encouraged (Bailey et al, 2015). This is an important factor to consider when analysing the data from all participants, as in the connection and relationship (Mind, 2019, online; Denning, 2012), even a professional one, constitutes part of an individual's social and professional support network, and to which can reinforce behaviours and habit (Prochaska, 2008; Prochaska, DiClemente & Norcross, 1992; Prochaska & DiClemente, 1986).

Neutrals experienced coaching as a result of participating in this research, whereby they accepted complimentary session as a 'thank you' for giving their time and feedback on this topic matter (Shaw et al, 2018; Beauchamp et al, 2015). Thus, Neutral participants input were taken on the day of interview only, and there was no prior or next phase to compare. However, all Neutrals shared they had no connection with any other person in a similar situation, which added to the psychological challenges, including feelings of isolation, frustration, sadness (Williams et al, 2019; Gassaway et al, 2016) at different stages, with N3 stating: *"I felt so isolated at times, especially when back home and pain built* *up"*. N3 shared how pain would impact their mood, they could get emotional, as well as withdraw from those around them, making it challenging to communicate, engage and participate in anything. Neutral participants do feel they have a level of support, yet this usually is from friends and family, those that that are trusted as opposed to turning to acquaintances, with all Neutrals wishing for support network to improve. It has been enlightening when Neutrals shared that even with the one coaching session alone, benefits were experienced and the belief that such a talking support has helped to gain clarity, and to take action to make the desired improvements. For instance, N2 said: *"I feel listened to and also see what I can do"*, sharing that they have often asked for help and for someone to listen to them but often feel misunderstood, unlike their experience of the coaching session.

4.3.1.2 Tools and techniques

The learning of tools and techniques is highlighted frequently throughout the transcripts of participants, whereby what has been learnt has enabled change and better coping mechanisms (Ricchi et al, 2018) to move forward. On reviewing the transcripts, it was Q4 and Q10-14 that allowed these insights to be shared, whereby participants were encouraged to give more depth to the information as shared in the ratings questions, the author was able to pick up on what was mentioned and to invite further discussion. In relation to Q4 ('I feel confident about my situation and moving on with my life'), mentee participants had more variation in their responses compared to coachees, yet highlighted positive change as a result of their sessions, with M3 sharing: *"It now feels more manageable"*, *"my mentor gave me practical tips … to build up my confidence to places I was familiar with"*.

With regards to the Mentees, all started the program with the commonality of feeling negative emotions to indifference with regards to confidence in moving forward, yet did credit their mentoring sessions for improving this over the time, with half remaining positive beyond the program. All coachees shared they saw their confidence build throughout the program and beyond, crediting learning techniques to assist and having made changes that better suited their life. This included C5 who commented: *"Buzzing! I have managed to stay on track to* *what we spoke about … I am very motivated by the sessions, (what I have) discovered and all I learnt and know it brings real change"*. Change and build of confidence was a shared outcome by the other coachee participants.

With regards to the tools and techniques learnt, Q11 ('describe the impact coaching / mentoring has made on returning to physical activity'), Q13 ('please provide any further feedback' to which the author also highlighted areas based on conversations) and Q14 (3-month follow-up prompt) were key to being able to gain rich data on these, including:

- Bringing calm to situations and to regain control *(C1, C2, C3)*
- Visualisation *(C1, C3, C4, C5)*
- Journalling *(C1, C2, C3, C4, C5)*
- Neuro linguistic programming (NLP) techniques *(C3, C4, C5, M2)*
- Healthier mindset *(C1, C2, C3, C4, M2)*
- Wellbeing techniques *(C1, C4)*
- Pain coping techniques *(C1, C2, C4, M2)*
- Practical options to help aide moving around *(C1, C2, C4, M3)*
- Communicate more effectively, including boundaries *(C1, C2, C3, C5, M1, M2, M4)*
- Change management *(C1, C2, C3, C4, M2)*

All participants shared the challenges of managing the change to their health, whether this be mental, physical, emotional, or a combination of all (Conti et al, 2022; Simpson et al, 2020; O'Shea & Smedema, 2014). In particular, the lack of being able to talk to someone, or the perception of not being listened to by medical professionals or perhaps friends and family, created a fresh obstacle (Nichols & Straus, 2021; Koenen et al, 2017; Jahromi et al, 2016). However, the learning of various tools and techniques, the focal areas of many shared above, not only enabled but empowered participants to regain control and to have a healthier approach to moving forward, with the majority of participants contributing to this sub theme. Examples include C1 who highlighted visualisation, as well as understanding what can be controlled or influenced at various times during the interview: *"I feel I better understand I have more control on what I can do"*, *"visualised and made me believe in it"*, *"I can now see the self-imposed barriers in front of myself"*, *"talking support has given hope,* *learnt techniques and I have better understanding of myself".* C3 also shared about specific visualisation technique, whilst highlighting the importance of journalling as a way to work through thoughts and emotions: *"I grey out the picture and replace with happier, colourful picture … that's a change, I think differently about it"*, *"I didn't use to journal but putting pen to paper, not holding back on all my thoughts and feelings really helped me to work through things"*, *"I wish back then (early stages of recovery) I was encouraged to journal as I feel it would have helped a lot, my emotions were all over the place … I didn't know how to cope"*.

As illustrated in Figure 9 in Chapter 2 (Maslow's Hierarchy of Needs Model, 1990), there are basic (deficiency) and growth needs, and as such the basic needs must be built upon to give a more solid foundation, so that a person can indeed grow. But individualised reactions to change will see a change in perception and emotional wellbeing (Tremolada, 2015), and time is required in the assistance to acceptance and moving forward (Figure 10, Reaction to Change - Davila, 2017). Thus, by learning tools and techniques, it is proposed the timing to move forward can perhaps be shortened, as the person is equipped to better manage, though will still face waves of emotions, all dependent on the situation presented. Such tools and techniques can become embedded in new habits, such as journalling (Crossman, 2021; Blake, 2015), as the benefits are felt as they are experienced and can assist in wellbeing (Watson et al, 2022, online).

The need for learning tools and techniques to be shared with the WSC is supported by all participants, and it is the Neutral group participants who add weight to this, on reflecting on their own recovery as well as impact from the complimentary coaching session. N3 shared the positive impact to wellbeing as a result of the learnings: *"I sometimes didn't know how to cope, it pulled me down"*, *"the first years were dark"*, and *"thank for showing me ways to help me go forward, and manage this new way of life"*. N4 also highlighted wellbeing, and that they had experienced challenges for years but as a result of the coaching session, they can view things differently and change their situation*: "All these years, I have been having a mental battle … I now see I don't have to 'make do', I can take steps forward".*

Within the Coachees group, journalling proved to be a very popular and useful tool in helping to be honest, to make sense of thoughts and emotions, and also be able to intentionally challenge any negative thinking (Flaherty, 2016). Although literature on using journalling is scant (McGrath, 2016), the coachees were encouraged to use this form of reflective tool throughout their coaching program, thus were able to use it as a marker to the now and before, to see patterns to thoughts and behaviours, and to be able to see changes made over the duration of the time. Without using this reflexive tool, such insights would be more challenging as memory and non bias reflection would be relied upon. Journalling also was used to track the coaching sessions, all tools and techniques learnt and applied, and are there as a resource to be referred to by the participant at any point in the future. All coachees engaged with the journalling, and 100% have continued to do so on completion of the program, including C6, who said at the 3-month follow-up: *"I still journal, this is keeping me focused. I also have a different journal which is more about actions than thoughts."*

Better understanding how an individual manages change, and again has tools and techniques to better equip them, gives insights into patterns of thoughts and behaviours, as well as reasons for resisting or welcoming change (Crossman, 2021), and what drives engagement (ie, what are the motivations).

4.3.1.3 Motivations and actions

Although both Q3 ('I have the opportunity to go out / engage in meaningful activities') and Q7 ('I feel motivated to take part in some physical activity') focus on the physical activity side, to which will be discussed in a separate sub section, the discussions throughout the qualitative research helped to give further insights into motivations to move forward and what actions were taken. Regardless of group, Mentee, Coachee or Neutral, participants highlighted what their motivating factors in life were, including but not restricted to being physically active:

Motivating reasons	**Participants who highlighted areas**
Family interaction	C2, C3, C5, C6, M1, M2, M3, M4, M5, N1, N3, N4,
Social interaction	C1, C2, C3, C4, C5, M1, M2, M3, M4, N1, N2, N4
Take back control, regain life control	C1, C2, C3, C4, C5, C6, M1, M2, M3, M4, M5, N1, N2, N3, N4,
Better mental health	C1, C2, C3, C4, C5, M2, M3, M4, M5, N1, N2, N3
Be confident, feel 'myself' once more	C1, C2, C3, C4, C5, C6, M1, M2, M3, N2, N4
Lessen pain	C1, C2, C3, C6, M3, M5, N1, N3

Table 22: Life motivating reasons shared by participants across all groups (mentees, coachees, neutrals)

Improvements to interaction with others, whether this be family, friends, or colleagues, is a dominant driving force for wanting to find a way to better manage the walking spinal condition and move forward with life in a positive way (Schaille et al, 2019). Regaining an element of control on life and improving mental health could be considered as interlinked, as anxiety, worries, fears vary with the feeling of instability of life, and to which the TDF model (West & Michie, 2020) acknowledges, and these emotions were highlighted by M2 who readily shared their fears and became emotional when recalling specifics surrounding their injuries: *"I was scared afraid of what my future life might be … I didn't know who I was anymore"*, and who was grateful for the sessions for being able to better process the changes: *"the greatest impact of my mentoring was the emotional wellbeing, around the feelings of loss of control I had".* C1 felt all aspects of their life had changed for the worse, resulting in: *"I felt isolated, misunderstood, alone on this journey… Everything was getting out of control"*; and C3 highlighted the benefits of the coaching program, and when shared, smiled, was proud and was visibly moved by the changes: *"Coaching has helped me believe in myself, try new things and realise what is important to me. I am now enjoying more activities. I like this change and what I now do".*

At the 3-month stage review (Q14), coachees and mentees highlighted varying options to get more active in mind and body (SportScotland, 2009, online; Penedo & Dahn, 2005), and these included being motivated and willing to sign up for and enjoy educational courses, swimming, road cycling, spinning (bike), gym, meeting up with friends, exercise classes, social support group engagement, gardening, reading, walking, hillwalking, netball, shooting, art, wood carving, DIY, and meditation. The participants had a wide range of activities of varying physical exertion, and yet all still promote movement (WHO, 2018, online). Whilst participants highlighted what they used to enjoy and that some of those activities could no longer be enjoyed due to the spinal condition, there was the desire, motivation, and action to move these forward (Abrash Walton et al, 2022; Prochaska, DiClemente & Norcross, 1992; Marshall, 2001). Although the Neutral group could not discuss the changes as a result of not participating in the talking support program, the questions encouraged sharing of what they did and still do enjoy, as well as their reasoning and motivations. Cycling, DIY, painting, jetskiing, volleyball, running, skiing, walks, and swimming were highlighted with this particular group.

A commonality across all the three groups was that high intensity impact sport or activity was less enjoyable if even manageable, as the impact resulted in triggering further pain (Collier, 2018; Widerstrom-Noga et al, 2016) and would have to be managed for some days later. Any impact activities as shared by participants (running, volleyball, netball) are approached in a way that sees each person monitoring pain levels and risk to injury (N3: *"I know when to stop so I don't get crippled with pain"*). However, non-impact activities are enjoyed more readily, being mindful of what causes discomfort, and is discussed further in Chapter 4.5 Engagement of Physical Activity.

4.3.1.4 Being listened to

Coaching and mentoring programs gave a platform for talking support to take place for a period of time, whereby those partaking were able to share honestly and fully in an environment that focused on themselves and their lives. As highlighted in sub theme one (Chapter 4.3.1.1), having depth of social support is desired and even needed as part of recovery, and can come in many avenues, such as friends, family, colleagues, employer, medical teams, other professionals (Maslow, 1990). However, giving the space to be listened is important for health and wellbeing, as to avoid feelings of isolation, depression, all of which are common within the SCI population (Williams & Murray, 2015; Migliorini, Tonge & Taleporos, 2008).

Throughout the transcripts, the concept of being listened to was highlighted repeatedly, sharing the perceived importance, including a safe environment to share openly without fears of judgement or prejudice (Nichols & Straus, 2021; Jahromi et al, 2016). M2 said: *"Towards the end of my mentoring sessions, I felt able to talk about my greatest fear which I had been too scared to verbalise"*, *"they (the mentor) listened when I cried"*, and to which the ability to be vulnerable and to share openly was scary for the participant yet proved invaluable. C5 spoke of judgement and that the coaching program allowed a safe space so they could *"speak about it all without judgement"*, including topics that were not directly linked to the injury but were challenges for them, something they had not managed to do until then. M1 was nervous about sharing as previously, they felt they were not being listened to, and also had been told *"you're lucky' yet I have to live like this"*, adding *"finally being listened to helps enormously"*. Participants shared the feeling of relief and appreciation, even with just the one complimentary session as received by Neutral group, with N2 adding: *"I really enjoyed talking to you… seems to have I once had kickstarted my recovery back into the functioning brain".*

Being listened to, to be heard, to talk about situations and feelings are highlighted as not just desired but important to those who participated (Wefald, 2021), and the transcripts mirror this, with regular references throughout, with the following stemmed words of 'talk' (talking, talked, talks), 'speak' (speaking, speaks, spoken), and 'listen' (listened, listening) being captured through NVivo software. Listening skills are important, just as speaking skills are (Rubtcova & Varlamova, 2019), and thus, when active learning is achieved, trust builds between parties and further information can be shared, whilst mitigating likelihood of misunderstanding (Wefald, 2021; O'Shea & Smedema, 2014). This is reflected in the offering of coaching and mentoring programs, where the Mentee and Coachee are the focus of the sessions, given space to think, speak and reflect, and can share as they perhaps have not done before. Talking and being listened to can also help protect mental health (Martz et al, 2014), with N2 giving weight to this by stating: *"I don't think my mental health would have been as bad if I felt listened to"*.

4.3.1.5 Improved mental health

As a result of coaching or mentoring program, participants readily shared they experienced positive changes to their mental health over the duration of the relevant talking support programs. The sharing predominantly arose through discussions surrounding Q2 (‘I feel supported by the people around me’), Q4 (‘I feel confident about my situation and moving on with my life’), general discussion openers of Q10 and Q13, as well as Q11 (‘describe the impact coaching / mentoring has made on returning to physical activity) and Q14 follow-up session. Expectations as to the life that could be may not have aligned with reality, to which had an impact on mental health (Kotera, Lieu & Aledeh, 2022; Watson et al, 2022).

Overall, there is a stated improvement from outset of program to 3-month follow-up, though as mentioned earlier, M5 did not go further in the study due to mental health challenges, which in itself highlights longevity of condition as a result of a traumatic spinal injury (Petersen, Meade & Mahmoudi, 2022). M1 did not believe any improvement was maintained, and shared that following the mentoring program cessation, they felt there had been a decline in confidence and perspective of moving on with life. However, both programs have given assistance to participants that has seen the majority make progress with regards to outlook on situation and life ahead.

Helping those with poor mental health can be challenging (Glowacki et al, 2017), with one in eight of the global population living with mental health condition at present (World Health Organisation, 2022, online). As highlighted in Chapter 2, an Australian study showed that nearly 50% of the SCI population suffered from mental health challenges (Migliorini, Tone & Taleporos, 2008), and although there are only limited statistics are available to narrow this down further to the walking spinal community, as a collective, the spinal injured community has a high rate of experiencing mental health issues (Conti et al, 2022; Williams & Murray, 2015). This research has indicated that coaching and mentoring programs bring a direct benefit to mental health and wellbeing (Cadematori et al, 2021), with participants readily discussing improvements, comparing to before the programs started up until the 3-month review, including C1 and C2 who shared they have struggled with poor mental health and that they are now in a better place as a result of their coaching program, with C1 stating: *"My mental health suffered on and off. Maybe that would have been the case anyway, I don't know. But this has helped and I wish I was aware of it long before now"*; and C2: *"I struggled with some aspects and could be said, I have had challenging times of mental health"*, *"I look at things differently as a result of this coaching".*

Although no one can say how life could have been different should they have had coaching or mentoring prior to the opportunity presented, C1 did highlight that perhaps their mental health would have still suffered intermittently, but it is an unknown, yet the coaching they participated in had helped regardless, and this is the focus they give attention to, stating they wish they had been aware of it sooner. Therefore, it is suggested the resultant benefits of coaching would have been experienced prior, as well as any positive change to life (Zachary et al, 2019; Skeels et al, 2017; Beauchamp et al, 2016).

There was also a shared desire and belief that such talking support would have helped lives much earlier, with C1 highlighting loneliness and loss: *"I wish I had this type of help sooner, as the last few years have been so lonely and I feel like I lost part of my life"*, *"I was alone yet surrounded by others"*, and C2 saying they felt the need to hide their true feelings: *"I tried to hide any mental health downs as I felt lost"*, adding they did not know how to communicate this nor had the right support in place to feel they could try. As a result of the relevant talking support, emotional support and reassurance has been achieved (M1), a sense of hopefulness and belief (M2), and N2 adding: *"over the last few months, changes, good changes, have occurred"* (since the interview to which they (N2) sent a further follow-up).

The commonality shared with participants in relation to the mental health improvements was being listened to, given reassurance and a sense of belonging, all which address psychological needs (Ferrie et al, 2018). However, as detailed in Chapter 3 and earlier in this chapter, the programs differed in relation to duration as although all participants were offered up to 10 sessions, coachees benefitted from the fixed 10 sessions, whereas mentees were permitted by BackUp to drop out at any stage, resulting in an average of 4.25 sessions completed.

4.3.2 Limitations of coaching / mentoring

Although the participants of the research highlight the benefits of coaching and mentoring as part of their support, limitations are raised through the discussions that took place. Coaching and mentoring are not regulated areas of work, unlike the likes of psychiatry, and as such, not all coaches or mentors may have studied accredited qualifications and commit to career / professional development to enhance skills and knowledge, but instead may have completed a short course giving basic learnings. Although this does not mean those without formal qualifications hold little value, it does raise the questions of standards, consistency, and professionalism, and that a coachee and mentee potentially may not know the variations to backgrounds of such professionals. This discussion came up during the interview of C4 and M2, who both asked about regulation of industry, more out of curiosity as they had the opportunity to ask. The author is an experienced coach with accredited qualifications, but this is not the case for all coaches and mentors offering professional services.

One such limitation centres around the structure of a program, whereby it was felt there were a limited number of sessions offered and yet, sessions could be ended before reaching this, M1: *"I had about 5 sessions, I felt there was a limited number but my mentor and I thought it was a good place to stop"*, and this said to be partly due to the match not being as hoped and objectives not being clear: *"mentor used their experience, but it didn't resonate"*, adding *"the mentoring stopped and so did my motivation"*. M1 further explained motivation improved by talking to someone who understood the challenges, and without this, they felt more isolated again. This recollection was one of sadness and resignation for M1, although they did say they have chosen to be more open to friends and family, build confidence, social connection, and motivation. The match between mentor and mentee is important, and has a greater positive outcome when transformational leadership qualities are shown by mentor (Beauchamp et al, 2016). In relation to this study and BackUp, mentor and mentee are matched by the co-ordinating team (Chapter 3), where there is no initial discussion prior to the program beginning, and therefore any incompatibility is not addressed prior. The match between coach and coachee is different as in there is an initial discussion before any coaching program begins, so both parties have met / spoken, decided if there are the qualities they are seeking, and then begin the program's 10 sessions, to which the coach has a number of attributes, including role model, supporter, and advisor (Skeels et al, 2017).

Discussing the number of sessions and the match further, participant M4 had only three sessions with their designated mentor, stating reasons for this mainly centred on challenges around arranging convenient session times (*"matching times was very difficult"*), to which then the mentoring program was ended. The topic of pairing was highlighted also by M3, who said *"the pairing wasn't right, she was younger, no adult life experience"*, and to who also felt relatable was challenging *"might have been better to have been paired with someone older than me who had already been through tings I was worried about"*.

The contrast of number of sessions between the group resulted in 80% of mentees not participating in the full 10 sessions as offered through BackUp organisation, whereas all coachees did commit and undertake the full program. The reasons for the variation are for a number of reasons, as shown above about the right match, timings, age / relatable person, perception, but as discussed in Chapter 3, there is also different approach between the two talking support:

Mentoring – those wishing to engage in BackUp's mentoring program reach out to the charity, request mentoring service and are matched with a volunteer mentor who is there to support, with up to 10 sessions being available. There is no obligation for either person to commit to the full 10 sessions, and BackUp recommend a minimal of four calls of one hour each. Each mentor has their own approach, schedule, and commitments, as well as life experience of a spinal injury, and the matching process is important. The mentoring service is one that continues to be developed and nurtured to meet the ongoing demand, and offers positively impactful support to those that require. However, it is unclear as to the auditing and monitoring of data, especially as discrepancies in approaches were revealed (Chapter 3.2.8), thus how to ensure greater engagement in the mentoring program to give even stronger support and desired outcomes (Gassaway et al, 2018; Chemtob et al, 2018). The training of volunteer mentors is minimal, a weekend of training to be a mentor, to which the role has a large degree of responsibility in terms of impacting someone's life and mind. Mentors have not undergone official training, and participate as volunteers. Having seen the data of other mentees who did not participate in this study, yet have gone through BackUp's mentoring program, it is unknown what the average number of mentoring sessions is for this program, as this data is not tracked on the system. However, as the study has shown, some mentees do complete the full 10 sessions.

Coaching – those who wish to participate in coaching commit to engaging in the full program, and in the case of this study for consistency when discussed with BackUp at the outset, 10 sessions would be offered. The author led the coaching sessions and is a trained coaching professional, and coachees were offered flexibility to timings, with duration of calls also being flexible so time could run beyond the hour. Through coaching, a coachee gains insights and learns tools and techniques to better manage life situations and gain fresh perspective, thus transformational results throughout the program (Skeels et al, 2017).

As the coaching and mentoring programs come to an end, preparing the individual for this severance of communication is important as it becomes a part of change process (Tremolada, 2015). Talking support programs are not to be long-term support mechanisms but to give the required support for a period of time so an individual can transition their life forward, but it does mean this comes to an end, and managing emotions associated with such actions (Abrash Walton, 2018; Prochaska, DiClemente & Norcross, 1992), and to which is highlighted by C1: *"I have missed the sessions, being able to talk to someone who actually listened. Didn't judge"*. Expectations and life beyond the programs can be managed, with new behaviours to be maintained (Norcross, Krebs & Prochaska, 2011), and it is important any mentee or coachees do not see the program as a form of counselling or psychology, as a mentor nor coach is there as a such, nor may be medically trained, but instead offer a safe space for an individual to consider and analyse situations and outlooks to be able to move forward (Wefald, 2021).

As discussed in Chapter 2, managing stages of change is important thus to also avoid slippage back to older habits and behaviours. In relation to Figure 14 Transtheoretical Model (Prochaska et al, 2008) (Chapter 2), the state of readiness is key to move from readiness, execution, and completion / maintenance, to which by this latter stage there will have been behavioural change is long-standing habits are to be achieved. However, as already highlighted, these should not be viewed in isolation of capability, opportunity, and behaviour, which in themselves create behaviour, and as highlighted in Figure 16 COM-B model (West & Michie, 2020). For there to be a positive outcome to change, an individual needs and wants must be addressed (Maslow, 1990, as shown in Figure 9), reactions to change supported (Davila, 2017, as shown in Figure 10), so that the validity of readiness stage is protected, rather than put in jeopardy (Abrash Walton, 2018), with barriers to motivation addressed (Basler et al, 2015). Thus, as well as being aware of readiness, the other core constructs of the TTM model (change, self-efficacy, and decisional balance) are important factors to effectiveness and deliverance (Abrash Walton, 2018).

Furthermore, when the program comes to an end, this research suggests it is important the individual is equipped to maintain ongoing benefits, and therefore can continue on more positive, fulfilling path and avoid slipping back to old habits and behaviours (Prochaska & DiClemente, 1986). Maintenance of ongoing benefits experienced by the groupings varied, with the mentees group showing the least ability to maintain benefits and where such slippage can impact mental health, as shared by M1 who said: *"I'm at a sea emotionally. There's no guidance, head is a right mess"*. The ability to maintain change is in stark contrast to coachees, who each engaged in all 10 sessions each and highlighted the behavioural changes during and the maintenance thereafter, and is discussed further in Chapter 4.7 in relation to the ratings given. However, despite the variation in maintenance of change, the commonality between both mentees and coachees is the positive experience in being listened to, supported and to welcome desired positive changes (Abrash Walton et al, 2022; Hoare et al, 2017; Jahromi et al, 2016; Denning, 2012, online).

One final share at this stage is that habits and behaviours are embedded with repetition, duration, as well as awareness of capability, motivation, and opportunity, as highlighted with COM-B model (West & Michie, 2020). Coachees who participated in this program were committed to the full number of sessions, and were engaged in learning, taking action, and to look beyond the current situation.

4.3.3 Limitations of not having coaching / mentoring talking support

4.3.3.1 Perceived impact to recovery and support

The purpose of having a Neutrals group in this research was to be able to assess the difference to outlook on life, experiences, and motivations and behaviours surrounding activity as a result of not having any coaching or mentoring as talking support, and the perceived lack of no support (Mental Health Foundation, 2018; Gassaway et al, 2016). The involvement of Neutrals as a comparison group was to help to understand the perceived impact to recovery and both professional and social support, and their experiences, motivations, behaviours, and influencers surrounding activity (Skeel et al, 2017; Purdue & Howe, 2012; Stephens et al, 2012; Wu & Williams, 2001). Those that did participate as Neutral shared their frustrations experienced throughout the years, as well as being the only group to all consistency feel disconnected with someone in a similar situation. N1 stated their challenges: *"no one understood, there was nothing to help",* whilst adding frustration: *"by not listening to the patient, it must be making any chance of diagnosis or help for them impossible. As has been the case for me."* N1 questioned the effectiveness or reliability of being heard by medical teams, and shared the frustrations, leaving the participant to feel no help was available. Furthermore, the Neutral participants highlighted that coaching nor mentoring was not even a support mechanism heard of as a possible route to help, but counselling or psychiatry support was suggested and welcomed where applicable, including for N1 who was offered through hospital connection. However, this type of support was not always desired (N3: *"counselling was an option, I just didn't think it was what I needed"*) nor perhaps the right timing for an individual (N2: *"I did see a counsellor briefly, but I didn't know how to communicate about all"*).

By enabling the Neutrals to also experience a complimentary coaching session, this has allowed a comparison for each Neutral participant to understand what could have potentially been possible as support, as well as giving benefit on the day. No one can predict what would have happened if different events had happened, but can only base on the facts given and the perception towards this support, to which N4 stated: *"I wish I had this support early doors, maybe it wouldn't have been the right time, but I will never know. But our session has* *moved definitely helped now and for my future"*, and N2: *"I really enjoyed talking to you, it certainly got my brain ticking over"*, and N1 voiced: *"coaching (as talking support) would have helped enormously"*. All neutral participants stated they wished they had experienced some form of talking support, and that the complimentary coaching session highlighted how effective this could possibly have been.

All neutrals stated lack of support, as well as challenges surrounding managing their spinal conditions and adapting to changes, have impacted mental health and wellbeing, to which *"more help needs to be given"* (N2).

4.3.4 Conclusion – Coaching & mentoring as a talking support

This research demonstrates coaching and mentoring offer a purposeful and measurable form of talking support to the walking spinal community, giving a safe environment to explore thoughts, behaviours, and perceptions, and to gain the empathy and support needed in that time of their life. Overall, those who underwent the programs shared the benefits of experiencing greater depth of support, being listened to, improved mental health, learnt tools and techniques to help move forward, and were motivated thus, took actions. Coaching and mentoring are recognised support systems of those who have suffered a spinal injury, and aid recovery in terms of mental health and behavioural aspects (Sweet et al, 2021; Divanoglou & Georgiou, 2017; Beauchamp et al, 2016;).

However, to be able to reap the benefits of such support, it is important that any individual's mental health is not so adversely impacted that requires medical attention, and if this is the case, that great care and immediate signposting is given. Care must be taken to safeguard health throughout any program, especially with the WSC due to the sensitive nature of injury, trauma (Bryant et al, 2015) and resultant life changes, and protocols should be in place to assess suitability to participate any program.

It is also advisable that any program being offered asks for commitment to all sessions to be completed, explaining that change can be incremental, and time is needed to help support as an individual seeks to bring positive change and better manage their walking spinal condition and the resultant impact to life. The program should be referred to as such, helping the participant to understand there are stages to change and reasons for the number of sessions, hence the commitment is important. This research has demonstrated where lack of successful completion or commitment impacts positive outcome, where mentors tend to not complete the full duration, and have a lower level of maintenance as compared to coachees, who did commit to the full program.

Furthermore, any program undertaken has a termination point, but the benefits will continue as long as coachee / mentee have engaged and learnt techniques to enable them to move forward, with progression and even maintenance level already being reached by the close of program, and where further signposting to help being available.

It must be remembered, coaching and mentoring are not medical support platforms (Hurt et al, 2001), and care must be taken to ensure there is not confusion regarding this, and a professional relationship is maintained throughout. Mentors and coaches should be aware of any ‘red flags’ or warning signs (Chapter 3.3.2) during initial engagement, as it may be that WSC individual would be better to seek medical support first before engaging in such talking support. Such protocols can safeguard both the receiving individual as well as coach / mentor, to which then allows full focus on the program itself rather than concerns. Both coaching and mentoring offer what is deemed by participants as being much-needed support (Prochaska, Norcross & Saul, 2020), with the person delivering coaching or mentoring being integral to how effective the platform will be for the individual, and as such the match between the two parties must be one that is agreeable to both, with a level of trust established (Sweet et al, 2021).

Taking into account all of the above, all coachees and mentees experienced benefits of undertaking such a talking support program, and although time was limited with mentees, due to not all sessions being used, there is clear advantages of such support compared to not having at all. Although the Neutrals participants did not engage in any mentoring or coaching program, they did experience the complimentary coach session after their research engagement, giving a comparison and where emotions appeared heightened, with frustrations readily and frequently shared regarding lack of support and being listened to, as well as long-term impact to mental health. Having the coaching session proved an important experience to Neutrals, and has given weight to the need of such services being available to all, and to lessen experiences of a feeling of isolation, frustration and not being understood, impacting how lives are led.

From the above ratings outcomes and transcripts analysis, it is concluded coaching and mentoring offer solid, measurable talking support platforms for the WSC (Lawrason et al, 2022; Vinoski Thomas et al, 2019; Jannings & Pryor, 2012), with the data suggesting coachees have a higher likelihood of positive outcomes being maintained when compared to mentoring, and this is perhaps due to format, including duration, commitment, learning points and training of the mentor / coach. Both coaching and mentoring have proven important aspects of an individual's recovery, to make sense of injury and life, that support is available, and that life can still be enjoyed.

4.4 Impact from walking spinal condition

Those who sustain a walking spinal condition will experience a change to their life, whether this be in the shorter term or long term, even permanent, with walking ability / recovery a main goal for SCI patients (Sinovas-Alonso et al, 2021; Aspire, 2021, online; Jannings & Pryor, 2012), thus it can be suggested there is no surprise that impact of sustaining spinal condition became apparent through thematic analysis as a main theme of the primary research. Those who endured physical impairments, included SCI, following an accident or traumatic event are more likely to experience negative wellbeing compared to those with no physical injury (Martz & Cook, 2001). As discussed in Chapter 2, it is important not to only look at the change to life with having walking spinal condition as a physical one, including pain, but also there are emotional and mental challenges (Petersen, Meade & Mahmoudi, 2022). As illustrated in the below table, two key areas under this theme were generated from the thematic analysis, wellbeing, and pain management, both of which form a common thread throughout the qualitative research, with participants readily sharing experiences, frustration, and also positive changes, and to which bring relevance and greater understanding to the thesis topic.

	Theme	Sub themes
Impact of walking spinal condition	Wellbeing	Psychological
		Physical
		Social
	Pain Management	Physical pain
		Impact on activities
		Perception of pain

Table 23: Impact of walking spinal condition themes and sub themes

When considering the overall impact of sustaining a walking spinal condition, from start of the talking support program to the end, and then the 3-month review, there was only one participant of the combined coachees and mentees cohort who showed a decline in outlook (M5), and this was due to mental health challenges. However, in relation to the other coach and mentor participants, over half experienced positive behavioural change from start to end of the program, and then to the 3-month review.

As Neutrals did not undergo a program, these participants could not provide before or after, but did readily share their experiences of impact on the day of interviews, giving rich data from the perspective of having no coaching or mentoring program, but did have the opportunity to experience the complimentary session as part of this study.

4.4.1 Wellbeing

Thematic analysis has resulted in Wellbeing having three sub themes, psychological, physical, and social, as shown in Figure 29 by weighting of references by participants. The weighting may surprise the reader when first considering impact of a spinal condition, as unconscious bias may have put physicality as the most impactful change, however as the participants have shown, this is not the case – the psychological impact was shared during the interviews, and the interlink to impact to life (Tasiemeski et al, 2005).

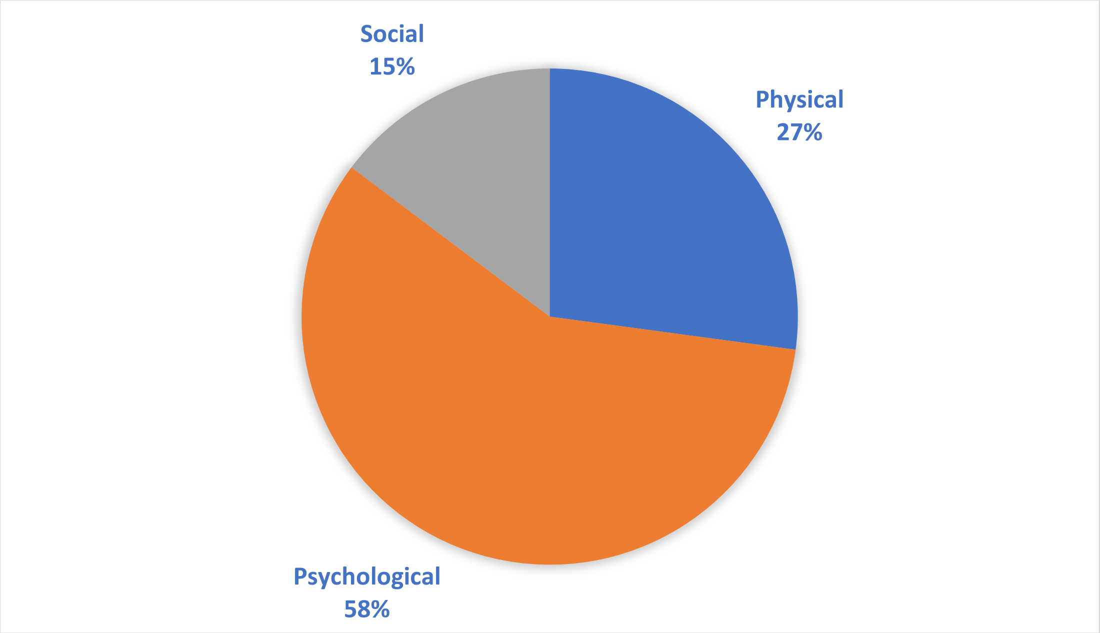


Figure 29: Impact from walking spinal condition: wellbeing sub themes

Question 8 of the interview questions was 'what changes has your spinal condition brought in relation to your activities, sports, hobbies?', whereby participants were asked to consider their physical activities prior to the spinal injury. All coaching and mentoring participants, apart from M2, perceived their changes in a more negative viewpoint, where hobbies, sports and hobbies had been negatively impacted, yet saw positive change surrounding engagement by the 3-month review, and to which is relatable to Reactions to Change Model (Davila, 2017), as shown in Figure 10, in Chapter 2. The overall view was they became more motivated, were able to see the importance of their activities and planned to get back more active so they could also return back to work and shift what they perceived as a negative mindset that was impacting everything (Chemtod & Caron, 2018). Even though M5 had poor outlook and mental health issues during the mentoring program, the participant still saw improvement in this area, and this was due to wanting to be more active for their children, and why they choose to live: *"If I didn't have my girls I would be gone"*, *"for the love of my children I'm going nowhere".* Understanding what motivates, what drives a person can positively impact the change process, and this also includes with physical activity (Michalovic, Rocchi & Sweet, 2019; Hoare et al, 2017; Glowackie et al, 2017).

The impact of sustaining a walking spinal condition is very personal, and as such each participant has their own experiences as to challenges, as well outlook on life going forward, as shown by all participants (Wefald, 2021). A spinal injury has far-reaching impact to life, with physiological, physical, and social being the key sub themes as part of this research (Lawrason et al, 2022; Petersen, Meade & Mahmoudi, 2022; Chemtob et al, 2018; Gassaway et al, 2018; Rocchi et al, 2018; Jannings & Pryor, 2012).

4.4.1.1 Psychological

Those who have experienced a spinal injury as a result of a traumatic incident are more than 80% more likely to develop psychological conditions compared to those who experience no trauma (Petersen, Meade & Mahmoudi, 2022). However, even without a traumatic incident, psychological impact will still be managed as an individual adapts to a life with a spinal condition (Lawrason et al, 2022; Petersen, Meade & Mahmoudi, 2022; Cadematori et al, 2021; BackUp, 2021, online; Hoare et al, 2017). This research has focused on those who have sustained a walking spinal condition as a result of an accident / incident (thus trauma) as opposed to a genetic or ageing condition (Koenen et al, 2017). With regards to the data from the qualitative research and analysis, all participants across the groups of mentees, coachees and neutrals shared their impact of sustaining a spinal injury with psychological impact (including mental health) becoming the most referenced sub theme.

Prior to any mentoring or coaching program, and thus through the time of recovery, participants shared feelings most of which highlight various challenges, including frustration, isolation, impact to mental health, grieving for old life, medication, healing, and other talking support options, hiding true feelings and outlook for the future. Appendix 16 provides an overview of the main psychological topics arising from the discussions and with the reviewing transcripts, and gives insight into the mental challenges as faced by mentees, coachees and neutrals. The given quotations from participants are not exhaustive but are chosen for illustrative purposes, to give insight into their understanding of situation as well as outlook, as those with a spinal condition continue to adapt to life changes (Lawrason et al, 2022; BackUp, 2021, online;

Aspire, 2021, online; Beauchamp et al, 2016; Bailey et al, 2015). Examples include how misunderstanding from others or choice of words can have a negative impact, for instance asking time after time about someone's pain can make the pain more dominant in the mind (Collier, 2018), with C1 stating: *"used to people asking about my pain or injury and that just makes me think of it more… I don't want to focus on those areas",* as well as people judging and not listening to what someone wants, instead choice is taken away, as shared by M1: *"I'm angry at perception of and from others, people making decisions for me".* Mental health challenges were highlighted frequently, particularly during time of adapting to the physical changes which impacted psychologically, with M2 sharing frustration, and *"hated not feeling in control of my body and my life"*. N2 spoke about the background, emotions and perception to the sudden changes experienced due to injury led to a nervous breakdown, and that the journey back to feeling well again was long, challenging and at times, very lonely. The psychological challenges were ones participants tried to hide, and although there was offering of counselling or psychiatry support to over half, there was still a perceived barrier to acceptance and shame that they were struggling with their mental health. However, time has helped in many cases, and Appendix 16 also shares quotes with regards to outlook for the future, with all coachees stating they were in a better psychological place than the start of their coaching session, whilst mentees and neutrals have a mixed experience, though apart from M5, have still highlighted positives, with some still trying to figure out how to maintain improved psychological wellbeing.

When reviewing Appendix 16 and above discussion, it may be suggested that the psychological topics listed are interlinked in terms of wellbeing (Simpson et al, 2020), and do not stand alone, unaffected by the other (Michalovic, Rocchi & Sweet, 2019; Glowacki et al, 2017; Williams et al, 2014). For instance, feelings of isolation are shared by participants, with also those of sadness and frustration (Williams et al, 2019), to which are magnified when discussing perception and ignorance of the condition and lifestyle by others. As with any significant change, emotions will evolve, and as demonstrated the Reactions to Change model (Davila, 2017, Figure 10), these can move from shock, denial, anger to a slump that can see distancing and reflection, which will either see an individual walk away (withdraw) or get onboard, open their mind to any positives, test the thinking and accept. Enduring a walking spinal condition is no different, and it will trigger thoughts and emotions as psychological needs become more prominent (Chemtob et al, 2018), which will ultimately influence behaviour, choices, actions and consequences, thus professional and social support is crucial (Rocchi et al, 2018; Gassaway et al, 2018; Bailey et al, 2016).

Addressing the psychological wellbeing data, and as in the last sub chapter, mental health continuously is mentioned by all participants, and the psychological impact of sustaining a walking spinal condition is profound, as the participants illustrate. Feelings of isolation are shared by C1, C2 and N2, who use words such as *isolation, misunderstood, alone, sad, scared, isolated* and *low*, giving insights into their emotions (Gassaway et al, 2016). Grieving for the life that was and having to adapt to the new is common, and with time acceptance and higher self-esteem can be regained (Graham-Jones, 2020). Participant C2 expressly states they grieved for their old life and had to manage the psychological challenges, adding: *"I did have a real mental battle. I feel my mental health has been poor for far longer than the physical recovery time"*, and to which C1 indirectly highlights *"the accident changed a lot (in my life)"*, with M1 saying: *"it made me question my purpose"* (Graham-Jones, 2020; Chemtod & Caron, 2018; Belyh, 2015).

With regards to managing mental health and other health challenges (Williams & Murray, 2015; Migliorini, Tonge & Taleporos, 2008), these prove challenging at any time, let alone as a result of traumatic injury and managing the physical changes (Stephen et al, 2012). The mix of emotions and negative impact to mental health are not unusual to someone who has sustained a traumatic injury, and support should be given at all stages of recovery (Koenen et al, 2017), with post traumatic stress support also being considered (Bryant et al, 2015; Martz & Cook, 2001). The literature supports what was found in this research, as the vast majority interviewees showed heightened emotions during interviews, including tears, frustrations, anger and also relief at being listened to, with language also demonstrating their emotive state, such as C4 stating: *"my mind was an obstacle"*; M1*:* *"head is a right mess"*; M3: *"I was situationally miserable"*; N2: *"the first years were dark"*. The emotions were very visible during the interviews, each participant sharing openly yet finding it challenging yet said to be a relief to share.

Self-identification and labelling (Dunn & Andrews, 2015; Dattilo & Smith, 1990) also were highlighted as apparent psychological challenges following injury, with participants frustrated at questions and attitudes (M3: *"(there is) perception of judgement, shame"*), as well as communications in general, whether that be from professional or social support networks, with the risk of judgement, which frustrated M1 who said on several occasions: *"I don't want to be labelled"*.

Misunderstanding of spinal injury / condition (C2), resulting in perhaps unhelpful questions was commonly shared during interviews (C1: *"I don't want to focus on those areas"*) as well as a feeling of pressure due to the invisible nature of a walking spinal condition (C2: *"it seems there was a disconnect or misunderstanding as to what this means to someone"*, *"I found it rather infuriating and very sad that just because I still had the ability to walk that there should be the perception that somehow I should not require any assistance, and to recover at home"* (Lawrason et al, 2022; Kattari et al, 2018; Prince, 2016). As such, it is perhaps not a surprise that individuals choose to hide their true wellbeing and feelings so to avoid any potential of judgement, as highlighted by C5, M1, and M5, who said: *"I try holding back the tears of pain so my family don't see my suffering"*. Such refraining or pretence as to avoid questions may also further impact mental health (O'Shea & Smedema, 2014), though three participants (C4, M5, N2) did highlight the need for medication, and also the negative consequences to moods. During interviews, participants shared dynamics within relationships with their social support, including family and friends (see Chapter 4.6), and the above highlights that for varying reasons, participants chose not to share and instead give a pretence of all being better than it was, even at the detriment to their health.

Over half of participants spoke of the healing aspect of their minds as part of post injury recovery, and as well as sharing talking support in the form of counselling and psychologist appointments had been offered (Disability Plus, 2022, Spinal Injuries Association, 2022, online; Hayden, 2021). However, it would seem that offer of support is not consistent, though as other forms of talking support are not the focus on this research, it is not known if this is to do with geographical area, budgets, or perhaps closer as in training from medical staff for further sign posting, but certainly opens up the opportunity for further, separate research.

When reviewing Appendix 16's section called 'outlook for future', the author has compiled a snapshot of this area where there is a quote from each participant, giving an insight into perception of moving forward with life (Wefald, 2021). There is some variation of emotions and outlooks between the participants but also as groupings. Coachees are listed first in this section of Appendix 16, and all demonstrate optimism, and aspects such as now more able to bring changes (C5), forward momentum (C2, C3, C6) and self-realisation and belief (C1, C4) (Divanoglou & Georgiou, 2016). Coachees are united in sharing a more positive outlook, where mental health has improved (C1), and acknowledging looking forward as opposed to back to assist in a more healthier life (C2, C3, C6). C4 also shares the change on how they viewed themselves and making a conscious effort to do more: *"(I was) down on myself and life before, I now am trying to do more".* When the coachees spoke of their outlook to the future, the relaxed and even energised responses were tangible, and there were smiles, upbeat tone in the voice and eye contact as they talked.

The mentees gave an overall positive outlook, though not to the same extent as coachees, with self-reflection and gratitude (M2) (Bailey et al, 2015), hope (M1) (Crossman, 2021), better managing techniques (M3) and benefits of activity (M4) being highlighted. Mentees spoke of having a greater connection to who they are, not just looking at the injury (M2), but seeing the good from the sessions and moving ahead (M2: *"(I am) figuring out how I am now and what's important"*, *"I am very grateful"*, and M3 adding: *"it makes it feel more manageable".* It is of no surprise that M5's outlook is more negative, and they are currently under medical supervision for their mental health challenges.

The Neutrals group again showed optimism as they reflected on the future, giving thanks for their coaching session, to which was a new experience for all and where they benefitted from this complimentary session (N1: *"this (coach session) came along funnily enough just at the right time for me… kickstarted my recovery", "I believe this has helped me become more positive due to being able to think better"*, to which when sharing their demeanour was relaxed, upbeat, and they frequently smiled as they shared the positivity from the session. N4 spoke of their gratitude for the session, that they had not experienced anything like this and that they believed*: "our (coaching) session has most definitely helped now and for my future"*. Neutrals also shared about becoming more active and socially engaged (N2) and reflecting on the changes to date (N1, N2, N3, N4). Prior to the coaching session, the shares were of frustration, and have partly been discussed in Chapter 4.3.3.

All participants have shared psychological experiences and viewpoints, with the vast majority seeing the future as more positive at the time of the research interview for the 3-month review, though it is unknown to what level maintenance and even growth was achieved over the subsequent months and years to follow. However, as highlighted earlier with regards to Q4 ("I feel confident about my situation and moving on with my life"), participants shared an improvement in confidence with regards to this, with the majority making progress from starting any program to 3-month review.

Other talking support other than mentoring and coaching had been offered to half of the participants across all groupings, whether that be counselling, psychiatry, or being signposted to further help offered by relevant charities. However, for others, such support was not offered nor discussed, and to which these participants were to navigate their own way in getting the help they needed – to which state they felt they were left isolated to do so. Furthermore, nearly all of participants were not advised about benefits of talking support (Gassaway et al, 2018; Hoffmann et al, 2018), access nor understanding of mentoring and coaching, despite some charity links to such services having links into hospitals in the UK, with examples of charity links being Spinal Injuries Scotland, Aspire, and BackUp. Even with regards to these links, mentoring is the service that is being promoted, not coaching.

However, psychological impact is only one form of impact from sustaining a walking spinal condition, with both physical and social factors also prominent in this research.

4.4.1.2 Physical

Sustaining a walking spinal condition can be life-changing in many ways, and despite having a degree of walking ability, physical challenges can be daunting and permanent (Lawrason et al, 2022; Muller et al, 2022; Aspire, 2021, online). During the research interviews, participants highlighted a number of physical elements and changes (Divanoglou & Georgiou, 2016) that are as a result of sustaining their walking spinal injury, with the following word cloud helping to give a clearer understanding by using a visual of words to convey the reality of life regarding this, and the commonality as shared between the participants. The word ‘pain’ has been removed from this particular word cloud as although highlighted by participants as a physical element, the thematic analysis has resulted in pain management being created as a separate theme under this sub category of ‘Impact from walking spinal condition’, and is discussed in Chapter 4.4.2.

Figure 30: Word cloud, manually highlighting frequently used words relating to physical changes

Of the above, the most commonly referred to words are fatigue / tiredness (David, 2014), balance, impact to relationship, including intimacy, (Bailey et al, 2015; Taleporos & McCabe, 2002), bladder and bowel function, and weight. Fatigue and tiredness were experienced by all participants, and to which over half still experience a level of tiredness as a result of their spinal condition. Tiredness was said to be a challenge in enjoying activities and spending time with others (Murphy & Mosler, 2022; Seale et al, 2021), with M3 stating: *“tiredness was main thing, even when motivated it was hard to do anything in a meaningful way, even with others”*.

Bladder and bowel functions, where applicable, were either short-term impact of injury and eased over time, or now a permanent change (M5), whereby catheterisation was required, and / or management of bowel weakness. Such body issues have resulted in isolating more, or having to find other solutions to manage as best as possible, such as adult sanitary products, change of clothing, timing outings (M2). For those with extreme restrictions to ability to do things, weight gain was a common occurrence between the group participants, though all see weight as something that can be controlled when motivated to do so (C3: *"weight was something I mentioned in our coaching that I'm ok to share about, and that's made me look at what else can I do to make sure I don't keep letting weight go up"*, whilst adding spending quality time with family and friends through activity was important (Chemtob et al, 2018; Beauchamp et al, 2016). However, on further examining the transcripts manually, further physical impact also included: load bearing issues, ongoing blistering, physical recovery time longer than expected, spinal condition impacting activities, basic self-care challenges, perceived physical distortion as a result of traumatic injuries, and adapting to home and work life challenges.

When looking at the transcripts as a whole through NVivo software, a different word cloud is generated giving a greater depth of recurring words (Figure 31), though again fatigue / tiredness, balance, and weight are shown as most common (in orange), with further details scattered in black, and is used to give comparison to the previous highlighted words (Figure 30).

Figure 31: Word cloud generated through NVivo, using full transcripts relating to physical impact

As such, although the word clouds differ, they do share recurring themes, with the latter example highlighting emotions, activities, physical challenges, injuries, and aids in providing an overview of the level of physical impact and challenges a walking spinal condition does indeed bring (Conti et al, 2022).

4.4.1.3 Social

The last sub-theme of impact to walking spinal injury is social support, to which this encompasses the inter-relationships between social, whether that be family, friends, colleagues and / or acquaintances. From the information shared during the interviews with each participant, social inclusion and engagement has evolved throughout the time (Davis, 2005), and could potentially mirror the Adapting to Change graphic in Figure 11, as first shared in Chapter 2 and shown again below. Specifically, the ‘normal’ levels, interaction, and productivity begins to quickly decline for a period of time following initial shock, and at some point, will plateau at a level that may remain the neutral status quo or productivity and engagement may begin to slowly improve (move up) once again (Bridges, 1991; Kulber-Ross 1969). This particular combination of theories acknowledges the evolution of emotions against productivity and time, but if ‘productivity’ was replaced with ‘social interaction’ this remains relevant to what is shared by the participants. Ideally, in times of need, or in this case accident / injury, the patient would instead like to see a relatively stable level continue and not have the steep dips and inclines, all of which can be unsettling.

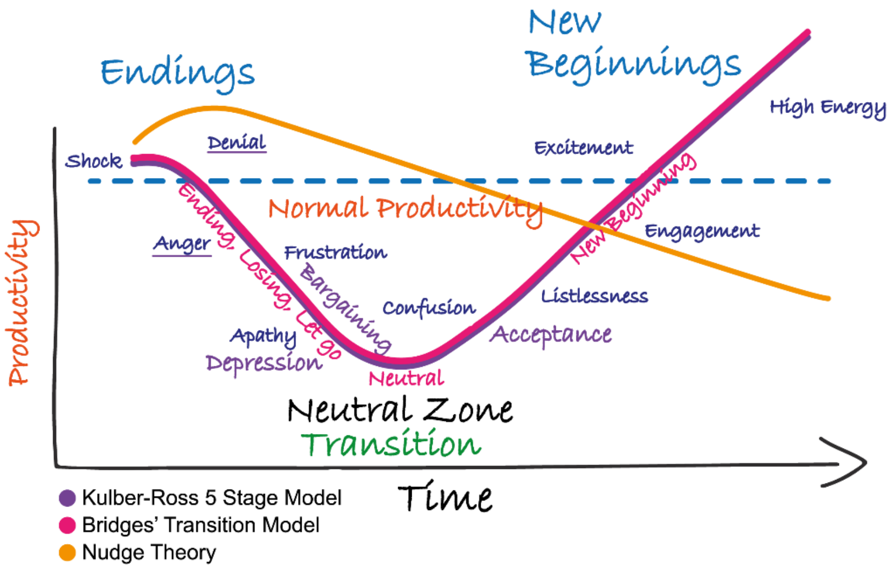


Figure 11: Adapting to change: combining theory with models (Author, 2020)

With the above figure in mind, looking at the first stage of change, and comparing to participant input, N1 told of experiencing a decline in social element (*”all hobbies are gone, some friends too”*), and having to adapt to what life now is, and without the level of social support once enjoyed. However, N1 is motivated to meet new people, to expand friends circle and enjoy activities: *“I lost a part of me. I want to build up and meet others, to be more active and try new things”*, thus N1 can be said to be on the rising part of the change curve. When considering N4, this participant’s relationship was negatively impacted resulting in separation, outlook on life became more negative, and they engaged in less activities as they felt *“less motivated … cut off from social groups”*, thus the curve continued to decline, until the desired support was given and needs met (Rutledge, 2011; Maslow, 1990). The level of support from others can have an impact on how an individual manages challenging situations and the behaviours and actions that follow (Hoare et al, 2017), and as time goes on, the curve can continue to move downwards or can be controlled to a plateau to then move upwards. As suggested by participants, various forms of help during this time include:

Support group - M3: *"it might have been helpful for encouragement to join a group of people in a similar situation to help with the initial intense isolation which lasted about a year from injury".* Support, especially surrounding mental health, has increased, whether by phone, person or online (Prescott, Rathbone & Handley, 2020), with Covid expediting access as the need became more urgent (Pierce et al, 2020), partly due to social distancing (Molodynski et al, 2021). Though support in general should be made readily available for those with spinal injuries once discharged from hospital and adapting to life back home (Jannings & Pryor, 2012). Participant M3 shares isolation was experienced, and could have been helped by the encouragement, and perhaps accessibility, to a support group, one that shares similarities regarding physicality.

Getting active - C1: *"I have been on hillwalks with friends, looking at joining walking groups"*; C2: *"I want to be more social, but not surrounded by people as that's not me"*, *"I do some activities and also speaking to others".* Understanding what activities bring enjoyment to an individual, the motivating factors and key influencers will help in addressing any behavioural and environmental barriers and make access to physical activity easier (Hoare et al, 2017; Stephens et al, 2012; Wu & Williams, 2001). Participant C1 enjoyed the social interaction, and expanding their current social support to one that encompasses hillwalking and nature. In contrast, C2 did not wish to be more sociable per se, but to be able to engage, meet people and enjoy activities. Both have different reasonings for activities and how they see this working, as is the case for each participant.

Seeing / speaking to social support (friends, family) - M2: *"I was worried I would never be able to sit and watch a film or go to dinner with friends again"*, M1: *"it helps to speak to family on the phone".* Social inclusion and interaction impact wellbeing (Gutpa et al, 2019; Williams et al, 2019; Stephens et al, 2012; Davis, 2005) and being isolated from this can hamper recovery, but challenges can be overcome through social contact (Gassaway et al, 2016). Participant M2 shares their concerns of not being able to enjoy time with friends again due to physical barriers, such as sitting for periods of time, which in turn can trigger pain. However, through pain management and choice of seating, they have been able to overcome these hurdles. Participant M1 highlights speaking to family is something they recognise helpful for their wellbeing in general, though they did also share frustration at times when not being fully listened to.

Communicating feelings and thoughts - N1: *"speaking to the psychiatrist certainly helped with me processing the events. It made me able to talk about it without turning into a complete wreck"*, *"I could start to talk to others".* Talking support has grown in popularity over the last 10 years, with coaching and mentoring for readily available as further offerings (Hayden, 2021; Cadematori et al, 2021; Al Hilali et al, 2020), though counselling and psychiatry services are available through NHS. N1 readily shared the benefits of receiving psychiatry support, and said it was a relief to be able to have this as they did not know how they would have coped otherwise. They have also learnt techniques to help them move forward. Understanding the needs and readiness to change is identified as important, and has also been applied to activity (Ben-Ami et al, 2017), though talking in general helps to also identify wants, needs, and motivational factors, all of which give understanding to behaviour and possible change (Abrash Walton, 2018; Norcross, Krebs & Prochaska, 2011; Basler et al, 2005; Maslow, 1990).

Forms of help give understanding to needs and wants. This research also suggests that feelings of isolation negatively impact mental health, and to which makes the decline in Figure 11's curve more likely, but with the right support, social engagement and inclusion (Gupta et al, 2019), this can be better managed, and outlook on life can become more positive due to having the ability to share, be part of networks and still be treated as in individual rather being labelled with the injury (Dattilo & Smith, 1990).

In relation to perception, M2 stated: *"I had never given much thought to how life might change for a person who experiences a complete or incomplete spinal cord injury. I didn't think I would ever have to or that I may belong to this community during my life".* The shock and adjustment to life of sustaining a spinal condition through an accident / incident is an unwanted change, but it is a change that is being forced regardless. As highlighted in Chapter 2, when sustaining an invisible injury and / or disability, varying degrees of ableism, discrimination and rejection are experienced by those with an invisible disability, with social stigma being an issue, with attitudes from others being prevalent, and impacts life (Kattari et al, 2018; Kiuppis, 2018; Dunn & Andrews, 2015). However, through interviews with the participants of all groups, educating professional and social support networks can help to improve this, and it is suggested a level of education, communication, and honesty is required by the individual to help lessen negative experience from others, including not being seen as with a disability but living with a condition (Dunn & Andrews, 2015). This can prove challenging in itself as an individual is already in a more vulnerable situation due to the injury and life changes. Common themes arising from social impact include:

Social impact	**Participants who voiced impact**
Reduction or loss of social activities (includes physical activities)	C1, C2, C3, C4, C5, C6, M1, M2, M3, M4, M5, N1, N2, N3, N4
Isolation, feeling left out, fearful	C1, C2, C3, C4, C5, M1, M2, M3, M5, N2, N4
Difficult to share reality of situation	C1, C4, C5, M1, M2, M4, M5, N1
Desire to feel 'normal' and accepted	C1, C4, C5, M1, M2, M3, M5, N1, N2, N3
Loss of friendship / support group	C1, C2, C4, M1, M2, M5, N1, N4
Reduction in motivation	C2, C3, C4, M1, M2, M5, N1
Mental health effected	C1, C2, C3, C4, M1, M2, M3, M5, N1, N2, N3, N4

Table 24: Social impact of walking spinal condition, highlighting referencing from participants

The social impact of having a walking spinal condition will vary for each individual, but the above table gives insight to the most referenced factors, and to which multiple participants shared this view. When reviewing the above, and to which are illustrated in the below graph (Figure 32), all participants said their injury / condition resulted in a reduction or loss of recreational activities, with mental health impact being the second most referenced, whereby the majority of participants discussed the psychological challenges endured, as well as isolation / feeling left out / fearful and desire to feel normal and accepted (Midtgaard et al, 2015; Davis, 2005; Putnum, 2005). The other three areas as shown in the above table and below graph are: difficulty to share the reality of situations and feelings, and loss of friendship / support group, to which were given equal relevance by participants who highlighted these as social impact, and finally, reduction in motivation.

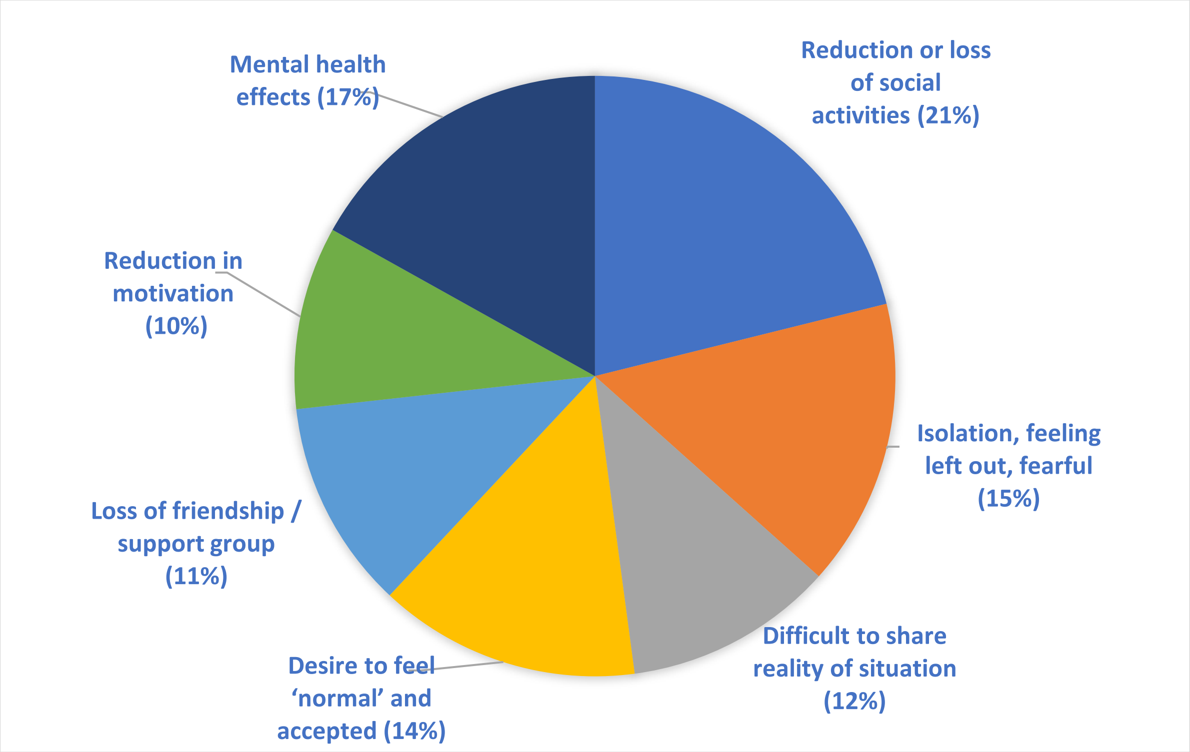


Figure 32: Social impact of walking spinal condition: sub themes

As with the other impact areas of psychological and physical, social support cannot be overlooked for assisting in the recovery of someone with a spinal condition, and these areas are interlinked whereby as one area improves, another does – and this also works in reverse (Conti et al, 2022). For example, M4 sustained several physical injuries including spinal, was given medical support through a spinal unit but highlighted there was a lack of psychological support offered, and this was even more apparent once home (Divanoglou & Georgiou, 2016). The challenges the spinal condition has presented has resulted in using some walking aids where required, and not being able to do activities as before, thus impacting time and interaction with social support, including family and friends. M4 has found adapting to a new way of living frustrating and isolating, adding *"my voice, my opinion isn't heard, no one is listening"*, as a result mental health has been impacted, though help from doctors had been offered. But the motivational factor that drives determination to seek solutions is not the professional and social support, which is said to be lacking, but for M4's children, *"that's my motivation for life"* (West & Michie, 2020).

The full impact may not always be seen nor understood by those surrounding a spinal patient, as there is invisible element to a walking spinal injury, not just in the nature of the condition but also the subsequent social and psychological impact, pain being another such area to which sits as a separate theme to Wellbeing (O'Shea & Smedema, 2014).

4.4.2 Pain management

Pain management is the next to be discussed under this sub category of Wellbeing, and to which three sub themes are identified (see Table 23, again shown below), physical pain, perception of pain, and pain's impact on activities. Indeed, pain could have been considered under Impact of walking condition's sub theme of physical, but it has been set as a separate theme as pain is more than physical (Petersen, Meade & Mahmoudi, 2022; Muller et al, 2022; Collier, 2018) and to give greater understanding in relation to WSC, it is explored under this separate category.

Main theme	Theme	Sub themes
Impact of walking spinal condition	Wellbeing	Psychological
		Social
		Physical
	Pain Management	Physical pain
		Perception of pain
		Impact on activities

Table 23: Impact of walking spinal condition main theme, and corresponding themes and sub themes

During the qualitative research, no direct question was asked regarding pain as it was not the focus of the research, however during the interviews, participants spoke openly and readily about how pain impacted lives, and how it was managed to move forward.

4.4.2.1 Physical pain

During the individual interviews, research participants spoke of the incident that resulted in their injury, the injury itself, and the subsequent changes to life. Through these discussions, physical pain was a common theme across all groups of coachees, mentees and neutrals, where quality of life was highlighted as negatively impacted, and that treating chronic pain proving challenging to the individual (Collier, 2018; LaChapelle & Lavoie, 2014). According to participants, physical pain was said to be triggered by injury itself, muscular, nerve issues, and / or any physical activity or movement, with C1 sharing: *"pain wasn't always during the time (during activity), but always after, so I dreaded the hours ahead"*. Physical pain also resulted in reduction or complete stop to enjoyment of activities (C2: *"I used to enjoy pottering about in the garden, but gardening tends to bring back pain in an intense level"*, M2: *"activity days trigger pain and 4-5 days have knock-on effect"*), but can also have far-reaching impact to those around an individual, impacting relationship, work experience and outlook on life (Mills, Nicolson & Smith, 2019; Gilbert et al, 2014). The following word cloud shows key words as used in the transcripts as mentees, coachees and neutrals discussed the topic of pain:

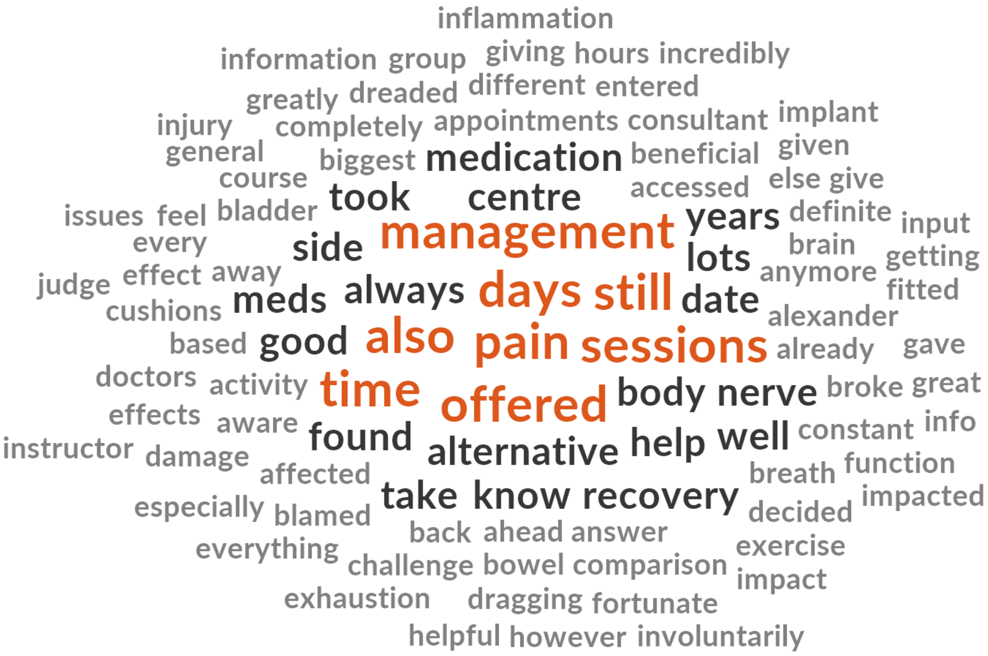


Figure 33: Word cloud generated through NVivo, using full transcripts relating to impact of physical pain

When looking at the diagram, the red and black highlighted words can be considered as expected, or of little surprise – pain, management, recovery, medication, nerve, body. But it is the grey words, representing the lesser referenced words regarding pain but are still repeated during transcripts, which give further insights to the types of discussions undertaken. Particularly, there is reference to:

- Alexander Technique which is said to aid back, neck and shoulder discomfort and posture.
- Emotive indicators, eg. 'exhaustion', 'dreaded', 'damage', 'challenge', 'fortunate', 'blamed' (Markey et al, 2020; Collier, 2018).
- Physicality indicators, eg. 'dragging', 'bladder', 'bowel', 'implant', 'inflammation', 'involuntarily'.
- Medical routes, eg. 'consultants', 'appointments', 'doctors', 'information' (SIGN, 2019; NHS Education Scotland, 2011).

Managing physical pain has proven to be challenging for all participants, with some activities no longer forming part of their life (for example, skiing, cycling, kayaking, soft ball, triathlon). For those that are still enjoyed their favourite activities, a change to approach were at times required (Charoenpol et al, 2019), for instance to continue gardening, raised beds were built to lessen strain of bending (C2), choice of seating and duration of sitting changed to enjoy painting (N2). Other methods of assisting in reducing physical pain included taking prescribed medication (anti-inflammatory, painkillers, nerve pain medication), regular swimming, yoga and pilates, introducing regular exercise, including gym, home workouts and group activities (Kindt et al, 2015).

Chronic (ongoing) pain is debilitating, and can impact general wellbeing, as highlighted by participants (Muller et al, 2022; SIGN, 2019; Widerstrom-Noga et al, 2016; LaCapelle & Lavoie, 2014). Given the nature of a spinal condition, chronic pain is common and can have a profound impact on an individual (Widerstrom-Noga et al, 2016; Boldt et al, 2014). Negative effects of enduring physical pain were readily shared by participants, and the varying impacts to life. C1 began to dread taking part in activities as this usually triggered pain for some time after, enough to put off taking part in such activities. Decisions can become based around such experiences (Caneiro et al, 2020; Charoenpol et al, 2019), and avoidance being opted rather than enduring further pain, as explained by C5: *"I have pain some days, some not. So I judge what I am doing based on this"*, and M2 revealing pain can last four to five days, as opposed to some hours.

Pain management clinics and relevant courses were offered to only one research participant, N1, yet 100% of mentees, coachees and neutrals have a need to manage their pain, and are doing so as best as they can, yet can feel frustrated with progress, as well as lack of support from professional groups. As such, pain can become dominant in life, as shared by many participants, including C4: "*I've never managed to get rid of my pain"* ; M4: *"I'm not happy at my pain levels or how it's being managed"*, and N2: *"pain holds me back… it can last for days"*, all of whom also discussed managing pain and impact to life as a result of pain in their coaching sessions. During the interviews, participants disclosed they had tried various options in an attempt to at least try to improve physical pain levels, and to which ultimately has improved their wellbeing as a result. For instance, psychological support (counsellor, psychiatry), adapting activity to bring enjoyment and accessibility (for example, gardening with raised flower beds), limiting time in activity, having company / social element, non-weight bearing exercise of swimming, and to which are discussed further in the below sub theme of Impact on Activities. Without professional guidance to support physical pain, participants have had to find their own coping mechanisms, but this is not effective for everyone, and has been blamed for impacting overall recovery and wellbeing (M5: *"I am still suffering from chronic pain … my health and wellbeing has taken a nose dive for the worse",* N2: *"there was no help. I struggled for 2-3 years with pain and inflammation… sometimes I didn't know how to manage, it pulled me down"*). Chronic pain can be distressing and complex to address (Mills, Nicolson & Smith, 2019), but participants call upon professional support to assist.

No grouping dominated this topic conversation over the other, instead all shared experience of physical pain of enduring their walking spinal condition, and living life with this permanency. It became clear that, although subjective, physical chronic pain is common, with little guidance as to better ways to manage this. It is unknown as to whether pain could have been better managed post injury, and if, psychologically, there could have been help in how to adapt and change outlook to life. The past cannot be changed, but participants were united in their view that with professional support, recovery could have been potentially been enhanced, and 100% agree participation in activities was impacted.

4.4.2.2 Impact on activities

Pain is one of several factors to which has impacted the participant in physical activities, to which the others are discussed under the next theme, 'Engagement of physical activity' (Chapter 4.5). With regards to pain itself, both physical and the perception of possible pain proved to be significant influencers in decision making (Charoenpol et al, 2019, Collier, 2018), and had a direct impact on movement, wellbeing, and behaviours, though can be improved through combination of physical and psychological treatment programs (AlMazrou et al, 2020). Furthermore, fear-avoidance pain can be disproportionally strong, with the thoughts and emotions guiding decisions to avoid physical activity where necessary as there is a fear of further pain and harm to follow (Rainville et al, 2011).

Loss or lessening of enjoyment of activities was raised as a direct result of pain, with C1 explaining pain was not always experienced during an activity itself, but always after, regardless of what it was, and so they dreaded the hours to follow. With little support with regards to pain management, C1 had to learn through trialling activities as to what would help and what should perhaps be avoided, even for a time. C2 was more specific in explaining garden was historically a joyous hobby, yet due to the movement and strain on the back, pain was intense and off-putting. Again, no pain management or awareness was available, and in relation to C2, it was not until the coaching session that tips and techniques were shared that proved to be helpful: *"surprisingly effective suggestion, yet it seems so obvious with hindsight, of yours was to arrange for raised flowerbeds to be built in my garden so that I could then have less bending, but lots of enjoyment. This has made such a difference – as pain is a mobility stopper, it's a pleasure stopper, it's a life stopper"*. Verbalising how an injury has impacted life and enjoyment of activities can also be challenging, and it took 18 months for M2 to be able to do this. During the mentoring program, M2 was able to share with the mentor the feeling of grief and loss of the prior active life (walking, yoga, golf, cycling) and independence, and having to learn how to better communicate with social support network, and their life as it is now (Graham-Jones-2020; Hartley, 2015).

Duration and choice of seating are another physical change element to be managed after sustaining a spinal injury, as seating can be a pain trigger, as highlighted by the participants. This can impact social engagements, enjoyment of activities, and have to take into account rest / recovery times thereafter (O'Shea & Smedema, 2014; Rainville et al, 2011), with the following being shared by coachees. C3 struggled with mobility due to being a pain trigger and therefore impacts what the can do, saying with a degree of sadness: *"movement can be limited"*. C2 finds sitting challenging, particularly where it is hard seating (no cushioning), and this impacts what they choose to do and how long for: *"I have little confidence with regards to the duration I can manage without pain building due to the seating position"*, though they did highlight being more active helps their pain levels (*"I can be more active, that helps with pain"*), and to which physical activity now forms part of a pain management routine (AlMazrou et al, 2020). C5 also raises the issue of pain and sitting, and is clear where in the back feels the greatest impact: *"the lower back is the most painful whilst sitting"*, whilst adding it limits where to go and what to do, triggering negative feelings, particularly about social inclusion. M5 shared that pain was so *"excruciating"* that sleep was greatly impacted, making it hard to do anything, including engaging positively with social support, including family and friends (Mills, Nicolson & Smith, 2019).

All participants revealed social engagement / activities were negatively impacted as a result of having sustained the walking spinal condition, with over half highlighting emotional and physical distancing occurring with friends and family, and nearly half saying anxiety was experienced in day-to-day activities, not just physical exercise. Social inclusion and engagement can directly impact wellbeing (William et al, 2019), thus it is important to not only be aware of such feelings and experiences, but the challenges faced in future engagement, as this will help in improving health and wellbeing (Caneiro et al, 2020; Kindt et al, 2015).

Although there may have been a loss of enjoyment surrounding some activities, particularly where pain is present, adapting to life with a walking spinal condition can be better supported during change transition by not going through this alone (Kattari et al, 2018), with a support mechanism also able to listen and help identify what motivates them, what and why brought joy, and encourage the patient to look at what is still possible, as opposed to lost (West & Michie, 2020; Williams et al, 2014). Such an approach was supported during both mentoring and coaching programs, whereby there was an acknowledgement on what had happened and what had changed, but not dwell on this (Houlihan et al, 2016), which M1 was aware of doing, when they explained there was little pleasure in activities due to pain, though they were making an effort to do what they could *"as I ought to … but nothing is helping"*. As a result of the dwelling on the negative changes, M1 continued to be frustrated and experiencing negative impact to mental health, as commonly shared by those with spinal injury (Cadematori et al, 2021; Rethorn & Pettitt, 2019).

4.4.2.3 Perception of pain

Perception of pain is subjective (LaChapelle & Lavoie, 2014), therefore differs for each person, and to which participants reflect this in their own interviews. As discussed in Chapter 2, as pain develops, emotional wellbeing can be impacted, leading to stress and anxiety, which then reinforces the pain signals as the focus remains directed on pain (Collier, 2018). If an individual can learn how to change how they cope with pain mentally, including how they perceive it, they can improve their quality of life and life satisfaction (Lieberman, 2022; Muller et al, 2022; Mills, Nicolson & Smith, 2019; Rainville et al, 2011). The language used in describing living with a walking spinal condition gives insight into perception of pain, for instance:

C1: *"I see I can actually do more than I felt. I am working through what I want and trying what's possible"*. This share raised the conversation around self-imposed obstacles and barriers (Williams et al, 2014), whereby without trying, how will an individual experience they can do more than first thought (Michalovic, Rocchi & Sweet, 2019). By working through the thought process during the coaching session, C1 was able to break down these barriers and determining what is important so they have reasons in their attempts (West & Michie, 2020; Abrash Walton, 2018). C1 became more positive and confident, and said they felt relief to know they could do more and enjoy activities once again.

C3: *"pain is a limiting factor"*. This outlook towards pain can perhaps be considered as adding a mindset obstacle, thus seeing limitations before they even occur. When pain does occur, the individual sees this as confirmation to their fears (Collier, 2018), and not necessarily seek a solution (West & Michie, 2020). C3 has struggled with pain since their accident, and had blamed pain for stopping activities, enjoyment and impacting every aspect of their life. There was resentment, frustration, and self-limiting beliefs, however this outlook changed when they learnt how to view and manage pain differently during the coaching program.

M1: *"I'm angry at perception of others, people making decisions for me. I don't want to be labelled or reminded about my injuries"*. This particular quote references perceived labelling and perception from others (Dattilo & Smith, 1990), and the impact this has on wellbeing and, potentially, their recovery (Kattari et al, 2018). By people drawing attention to injuries, and unintentionally the pain, M1 is forced to shift focus back to this, which is both physically and psychologically painful (Widerstrom-Noga et al, 2016). M1 shared they are self-conscious at people staring at their mobility, and the ignorance draws attention to the disability. It made them feel vulnerable, and also angry at feeling as if they were the centre of attention due to a disability, yet did acknowledge their emotions were within their own control and shared how they reacted was not always helpful.

M2: *"I get out, go to the gym, take attention away from the leg and pain"*, *"(I) exchange pain with pleasurable sensation, and learnt to label the pain, body scanning and understanding what's my normal pain or has it changed"*. This share supports Collier (2018) in that by taking attention away from an area of discomfort, it helps to reduce occupancy of this on the mind. M2 ensured there was an opportunity to get out, go somewhere, to be busy, and to lessen the focus on pain (Michie, Atkins & West, 2014), something they have worked hard to improve upon. They are more adamant they can live a life without pain dictating, and this has aided motivation levels to be active and social. By becoming attuned to the body, choosing how to view pain and labelling to give understanding in the moment, thus changing thought and emotion, the impact of pain can potentially be lessened, with resultant changes to life outcome (Abrash Walton et al, 2022).

During the interview stage with all participants, each spoke of current situation but also shared how they wish life to be (Crossman, 2021), allowing visualisation and discussion as to what they hope for and what they perceive as possible. The perception of pain and physical ability were highlighted as limiting factors. During the coaching program, to which notes remain confidential, neuro linguistic programming (NLP), as developed by Bandler & Grinder (1985), was used where applicable by the coach (and thesis author) to assist in shifting the mindset, aiding how the mind views certain situations. A qualified NLP practitioner, the coach / author used this technique where appropriate to help lessen the emotional attachment to a strong visual towards a memory or thought that was impacting forward momentum. NLP proved to be an effective technique in helping to reduce pain levels and negative perceptions of historical events, as shared by C1: *"pain levels are still low after the visualisation ways you showed me (during coaching sessions)"* and C5: *"visualisation exercises helped viewpoints, and I'm now enjoying new activities and meeting others"*. NLP was not offered to mentees nor neutrals, but instead only to coachees where a coaching relationship, deep understanding and trust was established.

During the discussions with BackUp mentoring team, it was shared that staff are interested in learning and potentially delivering NLP to their mentees, however no plans are in place for this to happen at the time of writing.

4.4.3 Conclusion – Impact of walking spinal condition

Impact from sustaining a walking spinal condition is variable and can be life-changing for many (Hastings & Horn, 2009), with any permanence and resultant pain to be managed, as well as how each person processes change and life situations (Wefald, 2021). There are many aspects to this over-arching theme, and the reflexive thematic analysis (Braun & Clarke, 2018) generated two themes in particular, wellbeing, to which there are psychological, physical, and social considerations, as well as pain management, encompassing physical, perception of pain and the impact pain has on activities.

As discussed, all participants' wellbeing was negatively impacted as a result of sustaining their walking spinal injury / condition, and to which they had to adapt to the sudden change in life, both physically and mentally, (Skeels et al, 2017) and also triggered a feeling of grief and adaptation. Where there had been psychiatry, counselling or other forms of talking support, the offer of such help had been accepted, even short-term, however such help is not readily available to all and tends to be when admitted to a spinal unit, and there lies a gap in consistent care as not all patients will be treated at such a unit. Furthermore, once a patient returns home, the new reality of life changes is very present and daunting, (Divanoglou & Georgiou, 2016) with greater support being required (Jannings & Prior, 2012). Due to the nature of a walking spinal condition, the medical issues cannot always be seen, there is an invisible element, and this makes it challenging for someone to be understood, accepted, and avoid judgement, regardless if work or personal situation. Feelings of not being understood is shared, as is isolation and a feeling of losing the person they once were. Social interaction lessens, and even is eradicated in some cases, yet the social element is important for wellbeing, and support is required to bridge this gap (Koenen et al, 2017). Fears and unknowns surrounding ability, pain and accessibility are also obstacles to enjoying physical activity, whether this is returning to something that was always enjoyed or trying something new. Participants shared of their own personal experiences, and how challenging pain management is making some activities near impossible or must be adapted.

There was a unified desire to become more active, yet frustration as to how this is possible. The coaching and mentoring programs were said to be helpful in moving forward with activities, to which the vast majority of those participants showing an improvement or maintained level in wellbeing, to which the varying elements are addressed through the one-to-one talking program.

Wellbeing and pain management (Muller et al, 2022) are key aspects relating to the impact of sustaining a walking condition, with numerous facets that sit within these realms. It is also suggested by participants that impact to life could have potentially been more manageable had there been greater support at an earlier stage, therefore making the challenges surrounding wellbeing and pain management less isolating, frustrating, and daunting, and whereby a better understanding of changes, access to support and how to improve quality of life.

4.5 Engagement in physical activity

This sub section of Engagement in Physical Activity focuses on the WSC's behaviour and motivations, and thematic analysis of the interview data identified five sub themes: motivators to activities; barriers to activities; outlook, perceptions, and desires; activity choice, and social inclusion, as shown in the following table. The purpose of this section is to give better understanding of the thoughts, emotions, behaviour, and motivations towards WSC's physical activity engagement, how and what they consume, and what influences decisions.

	Theme	**Sub themes**
Engagement in physical activity	WSC's behaviour & motivations	Motivators to activities
		Barriers to activities
		Outlook, perceptions and desire
		Activity choice (incl indoor/outdoor)

Table 25: Engagement in physical activity themes and sub themes

4.5.1 WSC's behaviour and motivations in relation to activity

Four of the interview questions / prompts as shown in Table 13 gave particular focus to physical activity, whereby the participants would be encouraged to share specific information to enable a deeper understanding surrounding motivations, opportunity, capability, behaviour, self-awareness, and any factors that help or hinder their efforts.

- *Q3. I have the opportunity to go out / engage in meaningful activities*
- *Q7. I feel motivated to take part in some physical activity*
- *Q8. What changes has your spinal condition brought in relation to your activities, sports, hobbies?*
- *Q9. To what level do you still consume / participate any activities*

Although each question is a standalone in their own right, they interlink to give deeper understanding of behaviour and motivations with regards to engagement with physical activity. In addition to evaluating the ratings given, the discussions around each subject provide rich data, as discussed below.

With regards to the perception of opportunity to go out / engage in meaningful activities, as asked in Q3, mentees and coachees shared personal obstacles as well as enjoyment of being active and getting out the house. Apart from M1, who highlighted their perception was that they were doing this less by the 3-month review, and M5 who exited the research after the end of the mentoring program prior to the last set of questions, the remaining participants all reported not only had the experienced improvement in this area, but maintained the benefits. The reasonings and motivators to activities will be discussed as part of the following sub themes, and evaluate the importance of such in helping a WSC individual to be more physically active.

There was substantial positive change for M4, however this participant did not place the reason for improvement down to their mentoring sessions (to which there was only three were undertaken), but for the determination and motivation to make positive change, safeguard home life and to be active to improve health, all of which are contributes to behaviour when referring to theoretical domains (De Leo et al, 2021; Keyworth et al, 2020). This is an interesting share by M4 as the rich data shared by participants is a reminder of the levels of complexity with each person, and that it is important to give each person a voice to find out accurate information, and avoid unconscious bias. This will be considered further in the following sub theme analysis.

Neutral participants were asked for their feedback on the day, and all agreed to having opportunity, either by themselves or with others, to engage in meaningful activities, whether this be indoors or outside, with N4 stating: *"(I'm) ready to learn, discover and take action"*. Although they had not undertaken coaching or mentoring, they did experience the complimentary coaching session to which exploring activities, new and old, were highlighted by all.

The sub themes are discussed firstly in relation to 'motivators to activities', with the remaining four areas all very similar in weighting of references, as shown in the following graphic.

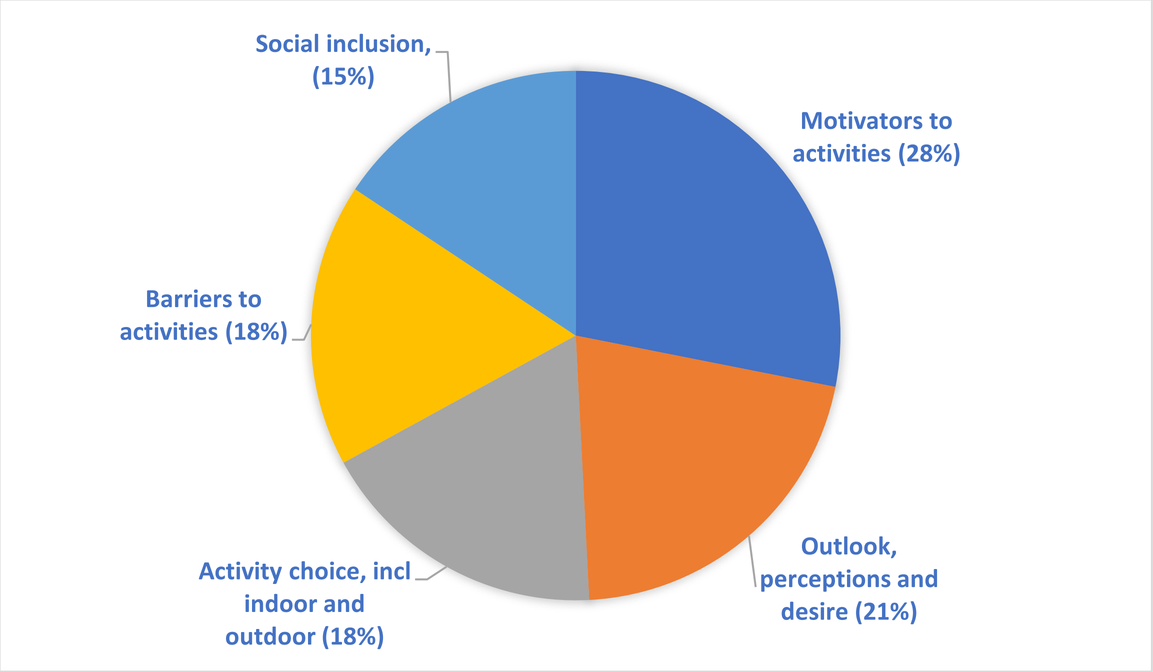


Figure 34: WSC's behaviour & motivations: sub themes

4.5.1.1 Motivators to activities

To give understanding to the WSC's desire and action to return to some level of physical activity, motivational factors are explored, and how this impacts behaviour and outcomes. As highlighted during Chapter 2, engaging in regular physical activity can help improve cardiovascular health, increase muscle strength and flexibility, and promote overall wellbeing (Lawrason et al, 2022; Xu et al, 2021; Caponnetta et al, 2021; Reiner et al, 2013; Busch et al, 2008). Additionally, it can also help individuals with spinal injuries manage symptoms such as chronic pain (Collier, 2018), improve mobility and independence (Moller, et al, 2021; Williams et al, 2019), and boost self-confidence and self-esteem (Beauchamp et al, 2016). Exploring the various behavioural change and motivating factors that can encourage individuals in the spinal cord injury community to engage in physical activity and lead a healthier, more active lifestyle is important as to better support and understand the WSC.

Q7 asked all participants to consider the statement 'I feel motivated to take part in some physical activity', and then encouraged discussion on this, why they feel the way they do about this and what does motivate them as an individual. All mentees rated their motivation to be the same if not better from the start of the mentoring program to completion. By the 3-month review stage of the research, M1 and M3 had a perception of less motivation, with only M2 and M4 having an overall improvement, with M4 sharing they are determined to move forward, adding *"I've learnt to be independent … I kept on pushing"*, to which this was partly to do more with the family, and the emotive connection to what motivates them. Having clear motivating factors and positive influences aide behavioural change, action, and benefits (Michalovic, Rocchi & Sweet, 2019; Hoare et al, 2018). In relation to M1 and M3's decrease in ratings, M1 said they lost enjoyment and so the motivation to be active, with 'people staring' proving off-putting (Kattari et al, 2018; Dattilo & Smith, 1990), and the lack of social support proving challenging, *"support group isn't good"*, stating partner, friends and closer people were all proving frustrating due to lack of help, with support being an important part of recovery (Skeels et al, 2017).

Coachees had a more consistent perception of improvement, with C1, C2, C3 and C4 seeing an increase in motivation, giving a more positive outlook (Wefald, 2021), with C1 sharing they were far more motivated now due to understanding what matters and why exercise is an important part to helping get their life in a happier place. Participants C5 and C6 saw considered their motivation levels to be the same or slightly less, but did not see this as a negative as it was due to personal challenges that made the activities harder to engage with and still remained positive.

Discussions surrounding motivation and the reasons given as to why there was an increase or decrease varied, yet there were six overall consistent topics raised during the interviews, as shown in the following table, which also indicates which participants highlighted these areas:

Motivating factors	**Participants**
Health improvement, including mental health	C1, C2, C3, C4, C5, C6, M2, M3, M4, N1, N2, N4
Feel enjoyment once more	C1, C2, C3, C4, C5, C6, M1, M2, M3, N2, N4
Independence	C1, C2, M1, M2, M3, M4, N2
Pain management	C2, C5, C6, M2, M4, N3
Social engagement	C1, C2, C4, M3, N4
Family (children, grandchildren, partner)	C2, C3, C5, M4

Table 26: Motivating factors to be more physically active

The most cited motivational factor is health improvements (NHS, 2022, online; Glowacki et al, 2017), as highlighted by the majority of participants, followed by the feeling of enjoyment, and thus likely to take action (Hoare et al, 2017). The subject of health improvements includes feeling healthier, losing weight, adding various forms of exercise to enjoy, lowering health risk factors, and improving mental health. An example is from participant N4, who stated they thought their physiotherapy sessions during the rehabilitation were helpful but that they started too late in the recovery process, and it would have been more beneficial to have engaged far earlier, hence the importance of having professional support following discharge from hospital so improvements continue at home (Divanoglou & Georgiou, 2016; Gomara-Toldra, Sliwinksi & Dijkers, 2014; Jannings & Pryor, 2012). This was discussed during their interview and also the complimentary coaching session that followed, where N4 chose to focus on return to triathlons during this time. The helpfulness of the session was highlighted thereafter, where they share in their own words: *"Over the last few months, changes, good changes have occurred. I am now in a group which supports triathlon athletes and I don't feel intimidated … I am must happier person for this"*. N4 spoke with pride, and now were more determined to maintain or even improve the changes further, stating: *"I don't want to go back to where I was"*. M3 highlights that although they consider their motivation levels may have decreased by the time of the 3-month review, they believed they were as motivated as at the end of the program, that they felt in control and enjoying activities. They shared their motivation was driven by seeing social support of friends and family, they wish to get healthier and have more energy, adding their overall increase in activity, through various forms of exercise, involves a mix of solo and group, stating *"I feel happiest when I achieve things that I didn't think would still be possible"*, with swimming, walking without aids, and socialising with friends listed among many of the personal achievements, and demonstrating their capability to do more than first thought (West & Michie, 2020; Abrash Walton, 2018). Self-belief and confidence have grown (Cadematori et al, 2021), with M3 is enjoying partaking in physical and social activities once more. All coachee participants gave focus to this area of motivation, and C2 reflects on the health benefits as a result of swimming *"I feel a benefit, as it is working my back muscles in a gently way which in turn I know helps pain levels, as the wors things is sitting"*, whilst also explaining coaching *"lift me up a level* *or gear … I had probably given up on aspects, yet our time together has seen me become more motivated, certainly more connected with what I want and take stops to make some a reality"*, and now tried different approaches to activities and to gain health benefits (Zimmermann, 2017).

With regards to feeling enjoyment as a motivational reason for engaging in physical activity, with C5 sharing such activities do not always mean sport, but just actively doing things (NHS, 2021, online; WHO, 2018, online), *"having my home projects has brought a lot of joy as I see the changes. I think these have helped me to de-stress, switch off from focusing on things I can't change yet sometimes would worry over"*, to which C5 says worries triggers lower moods and a more negative outlook on life (Rethorn & Pettitt, 2019). Participant M2 shares the obstacles to return to activities such as yoga, walking and the gym, but by adapting certain activities, enjoyed is gained once more, though being mindful *"some days are easier than others"*, to which adaptation in general is required as a result of sustaining a spinal injury (Martz et al, 2014).

Motivational factors of regaining independence, pain management, and social engagement similar in weight of referencing, as highlighted during the interviews and 3-month follow-ups. To have the feeling of not relying on anyone and be able to do things either enjoyed before or what will be new underpins the desire for independence, including M3 sharing *"I would really like to be able to travel on my own again and get a part-time job"* and this drives M3's determination to improve health, mobility and take back control, with C6 making concerted effort to exercise their independence (Moller et al, 2021; Williams et al, 2019), *"I look to see what I can do to better myself"*. Furthermore, M3 highlights satisfaction of independently moving by foot or by public transport, rather than depending on others to get from A to B, giving sense of achievement and purpose. Pain management being aided by physical activity (Feldman et al, 2022; Ben-Ami et al, 2017) proved to be something that was important to half of participants, including N3: *"I know when to stop (activity) so I don't get crippled with pain"*, whilst also sharing movement also helps to control pain. Following the coaching program, C2 found the information shared as a way of better helping pain levels (*"the sessions on pain, historical pain and mindset were eureka moments"*), though pain management is an ongoing focus, as is learning how to adapt activities (Hoare et al, 2017) to ensure enjoyment, such as changing how C2 approaches gardening by lifting flowerbeds, using raised knee support and limiting time bending (*"I am back spending many happy hours outside in my garden again … that cannot be underestimated"*). Being back in a social environment, whereby mixing with friends and family, and meeting new people, also was apparent as what motivates physical activity engagement, with M3 highlighting the positive feelings as a result of being able to now go out with friends for a night out, and take part in various group activities, including swimming and physio exercises. The group exercise benefits around social engagement are echoed by N4, who had overcome fears surrounding engagement and is now part of a triathlon group, and is *"more active, engaging and participating where I can in sports, and busy signing up for more classes and events"* having now more self-belief and back enjoying the group dynamic and support. At the outset of the coaching program, C1 had said they missed their exercise groups, and felt frustrated, and to whom has made a transition in activity levels, increasing activity levels, and has joined group sessions once again, and enjoying the friendships and social element as part of this (Chemtob et al, 2018).

The last motivation point as raised, and shown in Table 26, is better family connection, whether this be partner, children, grandchildren, proved to be a popular motivating reason, with C2 stating: *"I would like to go out on my bike with the grandchildren, they're only young, it would be nice to do with them"*, and C3 explained feeling happy and aware the children are enjoying seeing them enjoy exercise. Participant M4 stated very clearly, their children were *"motivation for life"*, and as such tries to do as much as possible to remain engaged, active and works hard to have a positive outlook, despite ongoing physical challenges, including pain, to which highlights their strong connection with motivation, capability, and opportunity to partake (De Leo et al, 2021; West & Michie, 2020). It is perhaps surprising that family was not mentioned by a higher number of participants, though as no one was asked directly, the information gathered is from organic conversation surrounding motivation to exercise, as to avoid influencing discussions and outcome.

The motivational reasons and connection have been found to be an important part of behavioural change and engagement to physical activity, with participants also sharing the impact their coaching / mentoring programs brought clarity, determination, and accountability as a result of the support offered. This included participant C2 who shared that as a result of the coaching program, they have more confidence, more motivated, as well as being more social, something to which they have said was missing following the accident and prior to the talking support: *"The time with you lifted me up a level or gear"*, *"it has also given me the confidence to try new activities, as well as reach out to social groups".* C5 said they felt proud at maintaining the changes, to which others in their life had noticed and supported, and as a result, they felt their behaviour was healthier: *"I have managed to stay on track to what we spoke about, kept my focal sheets in my home office and review them nearly every day! I am doing the actions and it makes a different … I am getting more active, watching my foods and feel healthier in general. My mind is definitely healthier".* M3 echoed the benefits of mentoring, as well as the complimentary coaching session which they shared helped bridge some gaps in the support they needed: *"The coaching helped me see with more clarity that I had been avoiding situations completely, just because I am afraid of losing control and that learning how to set a boundary".*

4.5.1.2 Barriers to activities

Barriers to activities for those with a walking spinal condition is subjective as this is personal (Hoare et al, 2017). For instance, a traumatic accident may bring to some individuals negative emotions and feelings towards the activity that resulted in the injury (C2: *"I've been hesitant about cycling out on the rounds in case of an accident"*, C3: *"I just don't like us travelling in a car on a day with poor weather as it reminds me of the accident. Yet I know that moment is not a reflection of every other driving moment"*). The thoughts surrounding the activity itself are seen as more negative, which also then impacts social inclusion and becomes a barrier to activity and / or exercise (Williams et al, 2014), an example being if driving is an issue for C3 then it raises the question, how do they get somewhere to enjoy a specific activity? Yet not everyone will or can avoid an activity that can result in serious injury, such as M1 whose injury was sustained after fall at the home. However, nature of accident / incident is remembered, and extra caution is taken, to avoid a repeat. Yet, where avoidance is possible, such as with C2 and C3, support is required to face the perceived barriers (Graham-Jones, 2017), to which C2 did get social support and was able to talk about their fears, motivations, and likelihood of an accident, and was slowly able to address the issue and now be back cycling on the roads, again with extra care, with such understanding and behavioural change essentially being addressed in the COM-B and TDF matrix (De Leo et al, 2021).

Covid impacted UK population from March 2020 to April 2022, with barriers to social interaction in place during three lockdowns, with emotional support challenging (Gassaway et al, 2018), and the impact of the pandemic still being assessed for social fears and restrictions, mental health, impact on physical activity as well as Long Covid (Murphy & Mosler, 2022; Seale et al, 2021, Molodynski et al, 2021). For those who sustained their injury during this time, access to rehabilitation and other medical support was impacted, with frustration shared during the interviews. M1 shared their treatment had to stop due to Covid restrictions: *"Covid lockdown then occurred. I had community counsellor but no treatment at that point"*, who then went on to have 8-week rehabilitation but *"felt isolated as I wasn't allowed out the ward or family to visit"*, with activity being very limited even on returning home. M1 felt they had little say in their care, and there was frustration at the lack of support (Kattari et al, 2018; Dunn & Andrews, 2015), with this not proving easy once back home, and highlighted the importance of rehabilitation stage (O'Shea & Smedema, 2014; Gomara-Toldra, Sliwinksi & Dijkers, 2014), to which Covid impacted inadvertently.

Covid also proved to be a barrier to activities, primarily through restrictions of lockdowns, social engagement (Murphy & Mosler, 2022; Seale et al, 2021), with C4 stating they were adjusting to life, and *"making more effort with friends to meet outside. Covid does play on my mind so don't want to spend too much time indoors with people"*, as well as discussing their feelings surrounding learning again to be comfortable again in confined spaced when restrictions lifted, in buildings and also activities such as swimming. C2 also raised Covid as having been a barrier to their recovery and how they lived life, as it impacted their rehabilitation program, which included swimming: *"Covid has not helped over the last 18 months, but over the last 6 months I am now back at my local pool"*. This in turn impacted recovery. It is suggested Covid potentially magnified the challenges of the spinal community, who already are more likely to be socially isolated as a result of physical changes, which in turn impacts mental health (Conti et al, 2022).

Physical ability is another barrier to engagement (Kattari et al, 2018; Kiuppis, 2018), as discussed by participants, including challenges in movement, with challenges being temporary or permanent. C3 found it difficult not being able to play as before and spoke with emotions of frustration and sadness, stating: *"Kids wanted to do things, I wasn't able. I was restricted for months"*; whereas C5's concerns surround contact sports and being able to enjoy once again, though is aware of associated risks of further injury (*"contact sports have been a concern, I am more cautious"*). Fatigue (David, 2014) was experienced by all participants at some point during recovery, with half highlighting this is an issue as to how they live life, and with M2, M3 and N2 saying it impacts enjoyment, and duration of with impact exercise being no longer possible with N2 stating: *"I used to like trail running but I don't do that anymore. Impact is too hard (causing pain)"*. Another physical barrier is body capability and function (Prince, 2016), in particularly, where an individual has sustained bowel and / or bladder issues, where control of bodily functions are challenging and proves embarrassing, although is invisible disability to others, yet anxiety and low self-esteem are common (Williams et al, 2019). M3 shared they were *"fearful of leaving the house just in case I needed to complete self-care"*, to which referred to any toiletry accidents whilst out the home.

Perception of body functionality can prove a hurdle to activity and action, as an individual may be capable of doing far more than they perceive due to putting a more negative view on physical and psychological capabilities (Alleva & Tylka, 2020; Bailey et al, 2016). With that in mind, body image confidence has proven to be another barrier to activities (Markey, Dunaev & August, 2020; Hosseini & Pradhy, 2019; Taleporos & McCabe, 2002), as if an individual is feeling self-conscious about looks, whether this is directly linked to the spinal injury or general, participants share there is reduced likelihood to participate in an activity unless this can be managed. Furthermore, social media coverage has added to pressures to conform to society's idealisation on looks (Bailey, Gammage & Van Ingen, 2017). Swimming proved to be a common activity that although the health benefits were known, it was a challenge to go as it meant being vulnerable and being seen in swimwear, creating psychosocial disability hurdle

(Ringland et al, 2019). C3 shared: *"I really hate going back into a swimsuit, my body self-confidence is zero"*), and to which has impacted duration before even returning to the pool post injury, and the frequency of visits. Being focused on what others may think also creates a barrier, and negative feelings and emotions are experienced as a result, to which is then associated with the activity, with M1 giving an example: *"people stare when I try walk or on the trike bike"*.

The reasons as shared by participants surrounding physicality are challenging, with many perhaps not being seen nor perhaps understood by others, with some issues not easily controlled (such as bodily functions), or overcome, such as fatigue. Having a strong support is said to be an important part in accepting and learning how to manage, with both professional and social support networks playing their part (Li, Bressington & Chein, 2017; Stephens et al, 2012), and assisting with any potential social stigma (Kattari et al, 2018; Davis, 2005), body image issues (Markey, Dunaev & August, 2020; Hosseini & Pradhy, 2019), and to which all mentees, coachees and neutrals all expressing the need for more help to be made available to those with walking spinal conditions.

Pain, as already discussed earlier in Chapter 4, also has its part in engagement in activity, with chronic pain proving to be easily managed, whereby activities have stopped or limited due to triggering further pain (C2, C4, C5, C6, M2, M5, N4). Ongoing pain can be debilitating (LaChapelle & Lavoie, 2014), with M2 saying *"any activity takes up so much energy"* and *"(I) struggle with pain and fatigue"*, and makes activity decisions based on how they are feeling at the time, with N4 adding they now choose gentler exercises as a result as to avoid pain triggers (Charoenpol et al, 2019).

4.5.1.3 Outlook, perceptions, and desires

There is a varying outlook to the future (Searle et al, 2021) from the participants, and in relation to activity, this includes from having no pleasure in activities (M1, who added *"I do as a I ought to"* who also says any glimmer of hope has now gone), to seeking opportunities to find an activity that brings joy (C3: *"open to trying (new activities)"*; C1: *"I want to be able to enjoy my activities"*), and to which also helps pain and movement (C2), and where desired, to meet others in a social environment (C5, M3). However, there is also frustration shown from M1 and M5 regarding spinal condition not being fully understood, a level of judgement and a sense of isolation, with M5 saying: *"nobody can imagine how hard this is for all of us that are living this nightmare"*, and N1 adding that all previously enjoyed hobbies were now gone, and some of their friends too, yet coping mechanism were sought (Rocchi et al, 2018), so they can move forward.

As confidence has grown through the duration of the mentoring or coaching program, or through time as experienced by neutrals, behaviours have changed, including introducing new routines and attitudes towards ability (De Leo et al, 2021; West & Michie, 2020; Prochaska, DiClemente & Norcross, 1992). This is demonstrated by several participants, including C2, who shared their *"confidence has now grown and happy to go on quieter routes (cycling)"*, and C5 explaining they had changed their perception of walking as boring to now regularly enjoying, putting headphones on and *"switching off from other thoughts"*, resulting in a different experience, a more positive outlook, and looking forward to such times so they could calm the thoughts of the day. M2 said they are now enjoying getting out the house, going to the gym, and *"take attention away from the leg"* as opposed to staying indoors and focusing on physical issues, which tended to be the case and resulted in low moods, heightened emotions, and negative thoughts. N4 went outwith their comfort zone by sharing to the social group about their injury with the purpose of getting support, something which was achieved in abundance and to which has helped to continue with their activities: *"I told them (activity group) the background, my worries, what I wanted to do again, the group has been so supportive"*. N4 believes if they had not done this, they would have give up on the activities, and confidence would still be low, as would be their general wellbeing. Another participant who highlighted the importance of asking for help and the benefits of doing so is C3, who shared they now have a better understanding of what is possible, asking for help is not only good but necessary, and they *"shouldn't be embarrassed by what I can and cannot do".*

With regards to talking support, mentees and coachees have demonstrated a more positive outlook with regards to benefits of physical activity (Zimmermann, 2017), and a realisation that mental barriers play a part (Michalovic, Rocchi & Sweet, 2019; Glowacki et al, 2017), as opposed to solely physical ability (C5:

"it's the thought of it I don't like", and who is now making conscious effort to remain open minded to trying activities and regain enjoyment). The perception of trying activities *"can be challenging"*, as stated by N2, however participants do show there is a psychological element to engaging and enjoying activities (Williams et al, 2014), and by changing this, C6 has also experienced *"enjoyment and motivation has increased"*.

In addition to Mentees and Coachees, the Neutral grouping showed changes from initial interview and complimentary coaching session to follow-up review some three months later. Frustration regarding the recovery progress and support offered are common themes from all participants, however, the information shared during interview and the review stage shows:

-an appreciation by N1 and N4 of being listened to (Jahromi et al, 2016);

-learning and applying techniques and actions as discussed during the coaching session; and N2 sharing their desire to now be more active and meet others, whilst investing time in wellbeing (Hoque, 2016; Prochaska, DiClemente & Norcross, 1992; Maslow, 1990);

-and the need to find a better way to manage a spinal condition so one can be happier (N1, N2, N3, N4) (Chemtod & Caron, 2018).

Understanding outlook, perception, and desires is helpful as it gives additional information surrounding behaviours and motivations, and can also assist in ascertaining where an individual is in relation to TMM (Prochaska & DiClemente, 1986) (Figure 4), from precontemplation, contemplation, preparation, action to maintenance stages. Figure 12 showed TMM model as a spiral, acknowledging the movement from precontemplation to maintenance and even termination is not linear, but an individual can experience steps backwards should progression be overly challenging. The most extreme example is M5, who initially was considered as making progress by requesting the mentoring program, yet later shared their struggles, and physical impact of the life-changing injuries having a negative and *'devastating'* effect on day-to-day life. Another example is participant C3, who although did not engage in a lot of exercise pre-injury, but said they understood physical activity has health benefits (Bajde, 2014) and that they could do more than what they were telling themselves, *"I think I was using my injuries and pain as an excuse not to do things, as if easy reason to avoid things"*. The self-reflection meant C3 could consciously make different choices surrounding physical activity, and should this be applied to TMM, enable movement along the change model, and give more opportunity for positive behaviours and maintenance (West & Michie, 2020), and to which C3 now says they *"feel stronger, more motivated"* and continue to do more, with a *"willingness to try"*.

Participants have shared their outlook, perceptions, and desires, as well as giving an insight into attitudes towards physical activity and what may be barriers to engaging. Through the coaching program, coachees were able to take time to reflect, test, and challenge their own perceptions, thus a more positive outcome overall, as change takes time, including outlook, pain management (Mills, Nicolson & Smith, 2019), and how they communicate (Hartley, 2015). It could be considered that the fewer mentee sessions did not enable such behavioural changes to take place but instead still gain insights, and both talking programs giving support, though mentees frequently raised challenges and less so on possible options to avert, however there was still positive shifts in perception and outcomes. Neutrals shared their experiences, and found the coaching session to assist in taking further movement forward in recovery, by using their mind differently (Bandler & Grinder, 1985) and to not accept that they have no control but learn to adapt (Martz et al, 2014), and that engaging in activity was indeed possible, even if it had to be adapted, a message that was not always conveyed by their support networks.

4.5.1.4 Activity choice

As illustrated above, there are wide range of activities undertaken by participants, with the following figure showing the arrange of pre-injury and post-injury choices from the sampling population as a collective (mentees, coachees, neutrals):

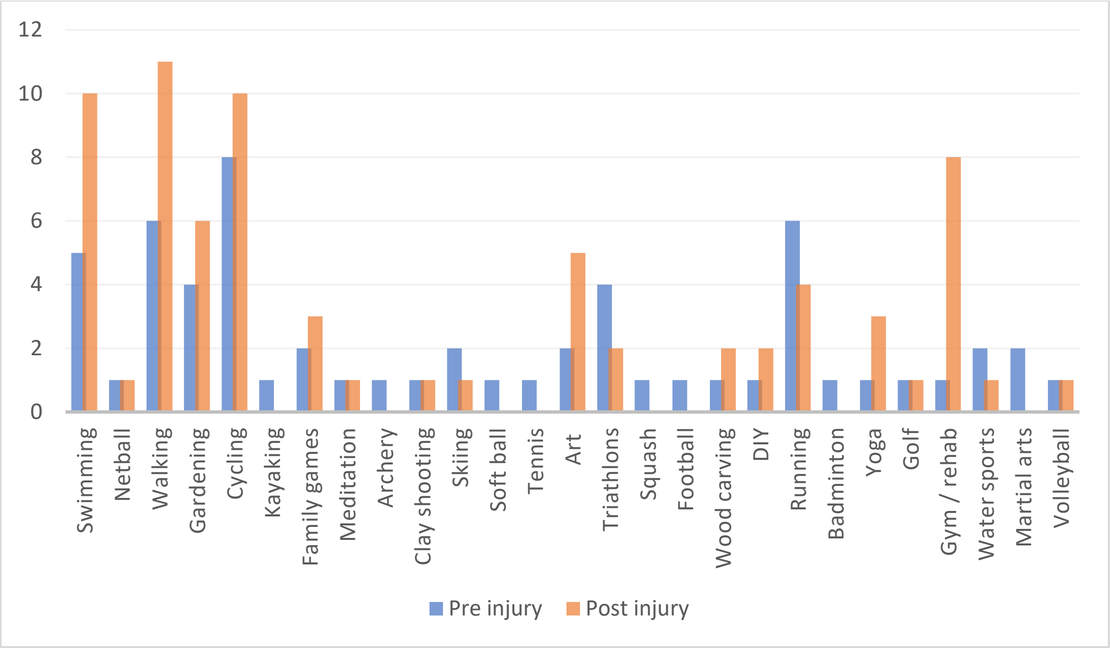


Figure 35: Choice of physical activity, pre and post injury from combined sampling (mentees, coachees, neutrals)

When reviewing the pre-injury data set, impact activities were enjoyed (softball, football, triathlons, running, martial sports), but participation was reduced following spinal injury. Gentler recreational activities and exercise training are instead enjoyed more readily (Liu-Ambrose & Eng, 2015; Best, Nagamatsu & Liu-Ambrose, 2014; Howley et al, 2001) including swimming, walking, cycling, gardening, family games, art, wood carving, DIY, yoga, gym/rehab, all of which are non-impact activities, with a mix of cardiovascular, strength and sport.

Addressing personal barriers to exercise has enabled new activities to be introduced (Hoare et al, 2017), and enjoyment increased, as did motivation to continue with the activity which also, at times, led to buying goods to support the activity, including C1: *"New walking boots were purchased, new walking poles, I'm enjoying longer walks again"*, who purchased the poles to help posture and ease pressure to joints, which also helped in post pain management and tackling mental challenges. Following sustaining a spinal injury, it may not be obvious which activities can be enjoyed at first, with a trial and error approach being applied by most participants, ruling out those that trigger pain or deemed not possible due to mobility issues or perception of ability, but finding what can be enjoyed and a reason that resonates with the individual (N1: *"although I was having great difficulty, I became the most fit I had ever been on a road bike"*). Activities as chosen by the research participants post injury tend to be gentler than impact exercise, can be enjoyed solo or in a social / group environment, and bring health benefits as already discussed. The choice as to the social engagement was raised as a consideration, for instance, C1, who above is quoted telling of purchasing new walking boots and poles, but who also said they were looking to join a walking group that *"feels right"*, to walk at own pace and minimalise pain, but is *"excited to head out with others"*, adding *"I've also been on some hillwalks with friends, that was great"*. Thus, the decision to go walking is more than it is a non-impact activity, but one that brings joy, acts like anti-depressant (Radmark et al, 2020), can go either by self or with others (so more opportunity to engage in the activity), and is already enjoying the experience, thus motivated to continue (Abrash Walton, 2018; Ferron & Massa, 2013; Prochaska, DiClemente & Norcross, 1992).

Participant C2 enjoys gardening, walking, cycling, and swimming, and although they are engaged in all, they are not fully enjoying spin classes but C2 has continued as *"feel the benefit of the classes"*, so continues to attend as they say they focus on how this will help their body in the longer term. This participant also shares they wish to be able to go out cycling with grandchildren once more, and sees the classes as helping towards this, hence there is a deeper motivational reason for the spin classes than just an exercise class (West & Michie, 2020). This is an important consideration, as the motivation is clear, and they will continue to do this activity as the perceived outcome will be to achieve their goal (Emmons & Rollnick, 2001).

Another example of this is from M2, who says being more active *"gets me more motivated"*, and enjoys various activities, including walking, gym (workout and rehabilitation) as well as yoga. They previously engaged in and enjoyed yoga pre-injury, and M2 is now back enjoying their previously enjoyed yoga class (Mills, Nicolson & Smith, 2019), *"admittedly with some adaptions, and some days I am better at yoga flows than others"*. M2 undertakes yoga in a group setting, and appreciates the interaction and support (Seligman, 1998), *"on my not so good days, the class laugh with me, not at me, and their support has been invaluable"*. Furthermore, they are also undertaking gym workouts and acknowledging they are increasing walking distances, despite "the walking is not as easy as it was, and I struggle with fatigue and pain which can last for a couple of days", as they say the benefits outweigh any negatives experienced (Keyworth et al, 2020). Gym workouts are a mix of solo and again, group setting, giving a mix of social inclusion and independent activity engagement, which M2 says bring great satisfaction.

Activity choice is personal preference, but social support and positive influence (Bennett et al, 2007) also provide an opportunity for an individual with a walking spinal condition to trial, gain advice, and it is suggested, give a greater chance of enjoying as a result of the support given (Beauchamp et al, 2016). However, not everyone will choose group setting, or engage even with another individual, yet the research participants have shared a mix of solo and group activities, and this research lends weight that this encourages positive behaviour.

When considering activity choice, the COM-B model (West & Michie, 2020) can be applied to understand resulting behaviour, thus capability, opportunities, and motivation in relation to chosen activity leads to the outcome behaviour, however, this does not perhaps explain what helps instil ongoing behaviour, and as such, new habits. However, Figure 18's COM-B and TDF matrix (De Leo et al, 2021) do give greater focus and thus understanding of the 14 domains impacting capability, motivation, and opportunity, though it can be challenged whether this still addresses the route of behaviour. What is important at this stage is the correlation between motivation, opportunity, capability (West & Michie, 2020), support (Skeels et al, 2017) and emotional traits (Hoque, 2016) of an individual, which allows them to participate in physical activity in the first place and then discover if this can be enjoyed or perhaps requires adapting.

4.5.2 Conclusion – Engagement in physical activity

There are a number of factors that influence the WSC's behaviours and motivations in relation to engagement in physical activity and, as such, to pave the way to increasing levels, it is important to understand what these are. For someone with a walking spinal condition to return to, or first begin with the engagement with chosen activities, understanding the extent of the injury is required in relation to physicality, accessibility, as well as psychological challenges (Petersen, Meade & Mahmoudi, 2022; Hoare et al, 2017), whilst also knowing such self-assessment should be ongoing as time will see changes (Davila, 2017). Perception may be considered a limiting factor (Williams et al, 2014), as opposed to the actual reality, and having positive support mechanism in place that helps with education, guidance and encouragement can assist in changing any negative outlook (O'Shea & Smedema, 2014). However, it is important to acknowledge, barriers to activities feel real to the individual, and there is a need to be listened to and supported, and to be shown how to overcome these challenges. Having a clear idea of what is important in life, what are the motivating reasons for being more active should be encouraged, as by connecting with a deeper why, and overcoming self-limiting beliefs (Gassaway et al, 2018), there is greater likelihood to persevere even when there is acceptable discomfort, tiredness, and frustration, though being mindful to rest where necessary. Motivational reasons for engagement are important to the individual, and tend to be emotionally linked, and the most referenced reasons were shown in Table 26, and include family, to regain feeling of independence, social inclusion, and engagement, to aid pain management, to feel enjoyment, and to gain health benefits, which includes mental health.

Behaviours may be short term, but can be embedded as habits, thus become long term with maintenance (Prochaska et al, 1986), with the more positive being supported by a mindset of looking forward, not dwelling on what has happened. Physical activity choice has been demonstrated to change as a result of sustaining a spinal injury, with high impact options (running, martial arts) proving more challenging to enjoy and sustain due to triggering pain, worries of further injuries, and less enjoyment levels. Although a small number of participants did return to impact activities, the majority have preferred to engage in low or no impact, such as swimming, cycling, walking, all of which still give physical and psychological benefits, with less likelihood of pain, injury, and any other negative consequence. To be able to achieve maintenance of engagement, as explained with the TMM spiral model (Figure 12), an individual will move back and forth as they learn what brings benefits to an individual's life, and when this is realised, decisions are made, and as such, actions, and outcomes (Basler et al, 2005; Prochaska & Norcross, 2002; Prochaska, DiClemente & Norcross, 1992). The ideal is for positive behaviour to be repeat, become habits and maintenance level to be achieved.

Activity choice is personal preference, but social support and positive influence do also provide an opportunity for an individual with a walking spinal condition to trial, gain advice and it is suggested, give a greater chance of enjoying as a result of the support given. However, not everyone will choose group setting or classes, or engage with another individual, yet the research participants have shared a mix of solo and group activities and it is suggested this encourages positive behaviour, increased engagement, and greater opportunity to maintain activity levels.

4.6 Signposting and support network

The final main theme to be explored in the research discussions and analysis is Signposting and Support Network, to which the thematic analysis assisted in identifying two themes, access to participant-found talking support and access to further medical specific support, as shown in the following table, with their corresponding sub themes.

	Theme	**Sub themes**
Signposting and support network	Access to participant-found talking support	Social support - friends and family
		Self-found medical support
		Perception of support outwith medical route
		Charity support
		Other (social media platforms, groups)
	Access to further medical specific support	Engagement with medical services
		Perception of support

Table 27: Signposting and support network themes and sub themes

Earlier in this chapter, depth of support and being listened to were explored under the main theme of Coaching and Mentoring talking support. However, the following examines access to further support and information, whether this be self-found and non-medical, or direct to or via medical teams. No interview questions were directly asked about support, however participants shared thoughts organically, experiences and emotions surrounding this area, and the impact it has had on their recovery, both negative and positive, to which it became apparent social support was deemed important to recovery.

4.6.1 Access to participant-found talking support

During the interviews and as shared in the three-month reviews, access to support was consistently highlighted as an important element in recovery, to which individuals raised frustration at lack of signposting and access to support, and help had to be self-found, usually when issues arose. This was shown to lead to lower confidence, and a challenging route to recovery. To give further understanding, the following sub themes are explored, with the following figure illustrating the reference weighting, and gives an order as to the following sub sections:

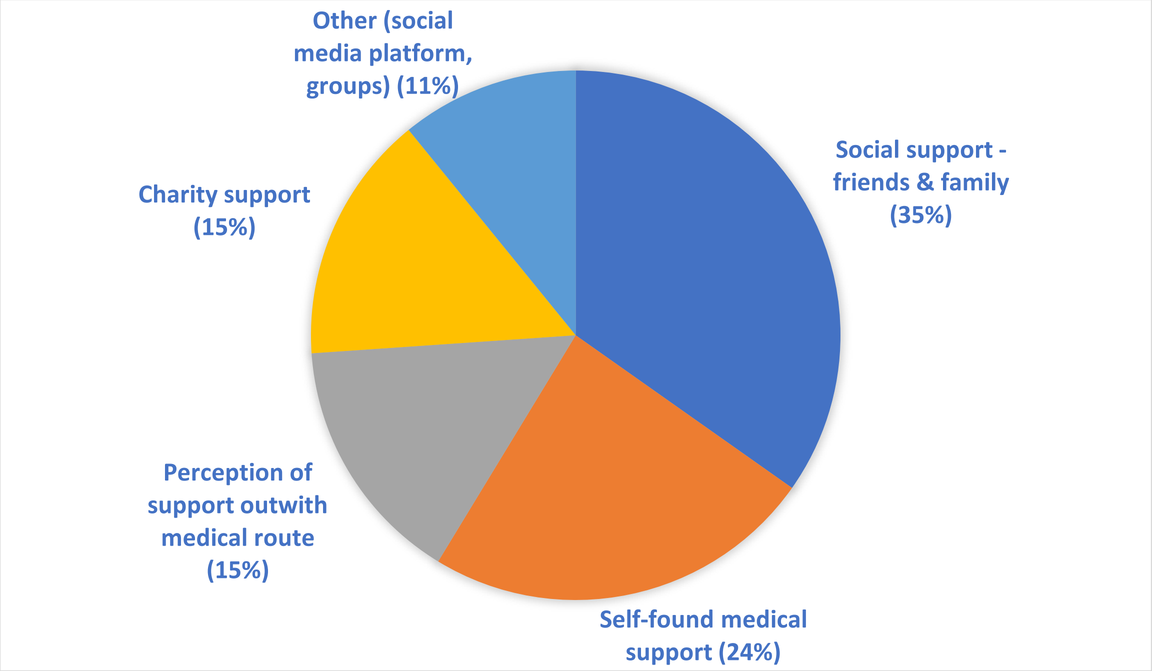


Figure 36: Access to participant-found talking support: sub themes

4.6.1.1 Social support - friends and family

Support comes from many routes, with friends and family being a social support network that is common to all of the research participants, to which a bond is present (Tasimeski et al, 2015; Wu & Williams, 2001). However, the experience of this support platform as shared by participants was mixed, and caused additional frustrations (M1: *"my support group isn't good. My husband, friends and closer people prove frustrating"*; C3 echoed the frustration, adding friends did not fully understand the injuries or impact to life, and having to explain proved to be very tiring, stating, *"my partner was helpful but there was a strain as I was so restricted for months"*). There is a level acceptance with regards to the lack of understanding from friends and family (C5: *"no one quite gets what I have been through, I learnt that's ok"*), however in some situations, the lack of support from those closest was seen to create further challenges and obstacles, all of which proved frustrating (C2, C5, M1, M3, N3), and to which also considered as contributing to poor mental health (Williams & Murray, 2015; deRoon-Cassini et al, 2009). Finding ways to better communicate to friends and family is desired (Mind, 2019; Hartley, 2015), with the programs proving to be being an effective platform to explore and improve, helping to avoid *"offending them if I said no to their practical help"* (M2). Though there is also a desire to be able to separate family and friends from the topic of the accident and repercussions, to be able to talk *"normally"*, meaning not just focus on perceived disability and challenges (Aspire, 2021, online; Jannings & Pryor, 2012), with the hope to be seen as they were pre-injury (M3), or not be labelled per se (Kattari et al, 2018; Dattilo & Smith, 1990). According to participants, this idealism of separating is not easy to master, and as there remains a level of support needed, conversations naturally revert to the walking spinal condition, which can prove frustrating (M4, M5, N2, N4). Yet the positive impact of having family and friends as a social support network and to assist with accessing help was deemed *"invaluable"* by C2, who added: *"but manage I did, with the help of family and very close friends"*, though admitting that at times, they had to adapt activities as a result of injury.

Friends and family are considered easy to access, there is a level of established trust (Wu & Williams, 2001), and value is placed upon this support network. Ways in which family and friends have helped the research participants include finding information that proved helpful, passing on details of mentoring program as offered through charity organisations, to be a trusted listening support, to assist with the physical challenges, and give encouragement. Where the support is lacking, self-confidence can be impacted and an individual can dwell on the negative aspects of life, including their body (Vinoski Thomas et al, 2019;

Chemtob et al, 2018), a viewpoint supported by N4, who said they didn't receive family support at first, and this in turn impacted how they felt towards themselves (Marks, De Foe & Collett, 2020), particularly when pain and movement was challenging (Markey, Dunaev & August, 2020).

4.6.1.2 Self-found medical support

Based on participant data, being able to access medical support post hospitalisation can prove challenging (SIA, 2019, online; Chemtod et al, 2018), with the perception being that is due to having a walking spinal condition, as opposed to a level of paralysis, an opinion shared by more than half of participants. Due to not everyone being admitted to a spinal unit (see Chapter 2.2), and therefore don't receive the care that is offered through this specific service, patients can be discharged with very little, if any, follow-up. Engaging in further medical support once back home to recover, particularly physiotherapy / rehabilitation assistance (M1, M4, M5), counselling (C4, C6, M1, M3, M5) and accessing occupational therapist services (M2, M4, M5, N1), can see an individual waiting considerable time due to waiting lists, with private medical options being available but only where can be afforded. It is also noted that spinal unit specialists also have high demand in service, with M4 stating: *"spinal unit psychologist waiting list is long",* and believes their recovery was affected. Therefore, the onus is placed on the individual to get access to further medical support, though the service may not be as hoped and can still impact wellbeing, as M5 highlighting that despite numerous counselling sessions, they are not in a better place and struggle with outlook on future. N4 highlighted the issue of timing, *"physio was good, but I felt I left it too long (to begin sessions), the damage was already done"*. However, it is unclear as to whether this perception was accurate, or whether it was too late for physiotherapy sessions to be effective.

Being able to access specific aids to help in the home has been useful and a learning curve as to what helps, including gripper, hand moulds, pressure cushions, raised sofa, toilets seats and bed, hand rails in and outside the home, and a mobility scooter (Divanoglou & Georgiou, 2016), but participants call upon more guidance to be available, with C1 stating *"no one should be left to feel* *alone"*, referring to the emotions, low-confidence, and negative impact of independence as a result of their spinal condition (Williams et al, 2019).

4.6.1.3 Perception of support outwith medical route

For reasons unknown to the participants, and to which proves frustrating for all, medical support comes to a halt when discharged from hospital. It is suggested through the shared experiences and opinions that individuals who have a walking spinal condition as a result of an accident are not included in any procedure of care that may follow discharge, and as such, there is limited access to medical help and the onus for help sits with the patient themselves, who have to chase (see Chapter 4.6.2). Where engagement of support involves financial investment, new barriers become apparent (Lawrason et al, 2022), as not everyone has the means to pay for additional help, such as private physiotherapy, residential rehabilitation, personal trainers, or to be able to purchase equipment that will help at home, and these finance pressures may prove insurmountable. Such costs can prove worrying and cannot be easily overcome, with C1 stating: *"cost will always be a factor"*, whilst sharing this also added stress to their life. M3 goes further with this consideration, to which they also spoke in a tone of resignation and sadness when sharing: *"a big strain was the extra financial cost of transport and medication, and private physio appointments, combined with the shame that I wasn't sure how I would ever earn money again"*. M3 feels this additional financial strain impacted recovery, wellbeing and has been a frustrating challenge as they try to find the best post-hospital care to improve quality of life. M5 added that their career came to an end due to injuries, and is now unable to work, and as a result, the family struggles financially. This has resulted in their mental health deteriorating significantly, particularly as not only are they impacted by the consequences of injuries, but the whole family is too. This has seen M5 consider taking their life on several occasions, and believes the love for the family is what keeps them here.

In the event support is given via a medical route, there is less likelihood of a financial burden, especially where NHS care is involved, but due to the nature of having walking spinal condition, research participants tell of the need to seek extra support. Alternative therapies to assist with pain was discussed by M2, whose physiotherapist suggested as another option post medical discharge, and to which has aided *"alternative pain pathway"*. M2 stated this helped nerve pain and to avoid ongoing medication route, as well as receiving talking support. This approach may be considered Enhanced Transtheoretical Intervention (ETMI), as discussed in Chapter 2.4.1.1, which is a more recent approach involving physiotherapists trained in motivational interviewing and behaviours change techniques in relation to physical activity, movement, and self-efficacy (Feldman et al, 2022; Ben-Ami et al, 2017).

Pain management is a concern shared across all participant groups, with chronic pain impacting up to 50% of UK population at this present time (Fayaz et al, 2015). Better managing pain is important for wellbeing (Collier, 2018), and also assists to avoid lengthy waiting lists to see specialists. Pain can be debilitating (LaChapelle & Lavoie, 2014), and M4 highlighted they continue to struggle with pain levels, stating *"I'm not happy at how this is being managed"*, adding they have *"little assistance or support"*, which continues to impact activities, *"though getting active has helped me cope"* (Penedo & Dahn, 2005).

As some choices of support may incur a cost, or potentially have a long wait to see a specialist, the WSC will source help that fits their financial means, as well as health needs, thus this research suggest there is a greater reliance for family and friends to provide much-needed social support (Tasiemeski et al, 2015), whether this be for listening, helping, supporting in general. Yet, a further barrier surrounds the accessibility to this, or even presence of such a social support network, and also whether it is deemed effective (M5: *"talking about my problems has proven not to resolve any of them"*). Though having trusted people to turn to (Sweet et al, 2021) can prove invaluable during and beyond recovery (C4, N4), as is being able to adapt when there are feelings of challenges and being let down (M2, M4).

4.6.1.4 Charity support

There are a number of charities and not-for-profit organisations that offer support for spinal patients, and who also offer services for those with walking spinal conditions (UK examples being BackUp, Aspire, Spinal Injuries Scotland, Spinal Injuries Association, Pain Concern, BackStrong). Research participants said such support was unknown until the need arose, and then to which the challenges became a focus (Rethorn & Pettitt, 2019), and this was echoed by M2 who gave no thought to such a way of living until they sustained their own life-changing spinal injury.

It can also be unclear which charity does offer support for walking spinal patients, as a spinal charity may be perceived as for fully disabled / no walking ability only. This confusion was highlighted by C3, who said they had heard of BackUp, but thought the charity only offered services for disabled people, and as such, a barrier to help occurred (Hoare et al, 2017) and they didn't reach out. Participants shared of hospital and spinal units staff advising of accessing such charity support, which includes signposting to further information, webinars, training, mentoring, patients leaflets, podcasts, articles, videos, helplines and residential offering. Benefits were experienced but by minimal participants (*n=2*), however, the dissemination of charity support does not appear to be common practice, with others given no signposting to non-medical help, thus creating a barrier to post hospital recovery or program of support (Martz et al, 2014; Jannings & Pryor, 2012).

The next sub theme discusses further forms of support platforms.

4.6.1.5 Other (social media platforms, groups)

In addition to coaching and mentoring as other forms of talking support, which has been discussed extensively in Chapter 2 as well as the discussions in Chapter 4.3, other forms of support include social media and community groups. Through internet searches, social media searches and suggestions from social support of friends and family, the research participants discovered further access to support, including with both closed and open Facebook pages being 'liked', Instagram accounts, accessing support groups within geographical area, as well as motivational books and audiobooks (Rutledge, 2011). Overall, Facebook was said to be an easy platform to connect with others, though not everyone felt ready or willing to engage, for example C1 looked up various Facebook groups but *"wasn't in the headspace to engage"*, didn't know what to say or which group would best help. Furthermore, even in closed social media groups, conversations were considered to be negative and deemed unhelpful. C2 added: *"I've looked into FB groups for other support, unsure if my thing, but I've looked. Think I did this to keep family happy, don't feel inclined to take further"*, to which M2 stated *"very negative responses"* were received, messages and pages were proving very off-putting, and *"can be damaging information so I removed myself"*. The self-awareness of M2 of any impact to self was recognised, as well as social media's influence surrounding thoughts, comparisons, body image and health in general (Hosseini & Pradhy, 2019), and as such, they took the decision to not put themselves in what they believe was a more vulnerable position.

However, due to Covid pandemic, and the lockdowns and social restrictions as ruled by the UK Government for a period of 2020-2022 (Murphy & Mosler, 2022; Seale et al, 2021), participants shared there was a need to search for online support groups and social media channels as to avoid feeling isolated in what was already a challenging time globally, and as well as health wise for a WSC individual. Although video communication proved tiresome during this time (Wiederhold, 2020), there was low confidence in social interaction situations, yet connection was important (Molodynski et al, 2021). Coaching and mentoring services being offered by phone and video calls also provided a connection and support (Skeels et al, 2017; Iles et al, 2011), avoiding the absence of these platforms during the pandemic restrictions.

Despite mixed experiences across these other channels, being able to access support, judge for self and find out what is helpful make the possibility of new support channels feasible, and improving reach of engagement and connection with others in a similar situation.

4.6.2 Access to further medical specific support

When under medical care, whether this be in a hospital or under ongoing GP care, individuals with walking spinal conditions have the attention of specialists who are making decisions on each person's health based and will refer to other colleagues in the medical field where necessary, with individuals benefitting from advancement in treatment (Lawrason et al, 2022). For instance, physiotherapy may be recommended with in-hospital teams visiting patients on ward, to assist in mobility and help patients to learn techniques to help also whilst home. Psychologists and counsellors may also see patients while in hospital, beginning treatment, to which may continue with a separate referral after being discharged. These three examples of medical signposting are readily shared by research participants C4, C6, M1, M3, M4, N1, N4, yet not everyone received the same level of signposting, nor found necessarily helpful, with physio being the most highly regarded.

4.6.2.1 Engagement with medical services

Recovery is personal, with injury impact varying per person, as does pain management (Widerstrom-Noga et al, 2016), mobility (Aspire, 2019, online) and outlook on life (Markey, Dunaev & August, 2020). Engagement with medical teams and services is also subjective, and through the interviews and 3-month follow-up review, it became apparent participants consider a direct link of medical engagement with recovery success, with careful assessments required (Sinovas-Alonso et al, 2021; Scivoletto et al, 2014). The following are case study examples from specific participants:

M1: engaged in sessions with psychologist program and later with a counsellor as forms of talking support (Jahromi et al, 2016), but states *"I wasn't being listened to, I was told 'you're lucky', yet I have to live like this"*. M1 has found the recovery frustrating, albeit accept *"the physical side was good, the emotional wasn't"* (Gassaway et al, 2018). M1 did not feel they got the help they needed, *"they (counsellors) would say 'don't' worry, how you feel is perfectly normal' but I need guidance, not mindfulness. I felt swept aside"*. M1 added they believed people create some of the obstacles, and questioned their purpose, with their recovery still proving problematic, with low confidence levels when looking ahead (Williams et al, 2019).

N1: counselling (Disability Plus, 2022) didn't prove helpful as *"they didn't listen or they swept it under the carpet"*, when what they wanted was to be heard and also move forward (Cadematori et al, 2021; Divanoglou & Georiou, 2016). Frustration has built after years of pain following injury, whereby they state they were not fully listened to by GPs and also when in hospital, *"they struggle to comprehend me physically but also mentally, and as a result, I do hold a lot of anger towards NHS and its staff"* (Chemtob et al, 2018). However, N1 does highlight pain management program (Mills, Nicolson & Smith, 2019) as being beneficial, and was also offered *"group therapy sessions as well as 1-to-1 appointments"*. N1 gives low scoring for how they perceive the future.

M3: a lengthy hospital stay was as a result of the substantial injuries, and during this time, psychologist and rehabilitation sessions were undertaken, whereby the physiotherapist *"took pity on me, and kept me on the list rather than on a community list, so I could get more sessions, but that's not generally applied to all"* (Pierce et al, 2020). Counselling sessions followed after returning home and were found to be very helpful, though they do raise *"there is a big gap in support once leaving hospital"*. NHS rehabilitation service was possible for six months on leaving hospital, but the service was said to be limited. The support by medical teams whilst under hospital care was very beneficial, and helped to prepare for life at home, but more support was then needed (Gupta et al, 2019; Prochaska, 2008). Overall, M3 feels more positive about their future.

C2: an accident resulted in hospital treatment being required, to which they found the medical team supportive, with the physical element well taken care of, but psychological side *"not given as much attention"*, and felt *"very isolated from others".* They feel there is an *"abyss between medical teams"*, meaning poor communications and assistance, but direct dealings were acknowledged for their high level of service, and aiding health (Hosseini & Padhy, 2019). Recovering at home was challenging, with little support being arranged or offered (Jannings & Pryor, 2012), and had to be self-arranged, or through family and friends, adding *"it is frightening to be left to heal at home with such an injury"*. C2 is motivated and focused on adapting to life in a positive way

(West & Michie, 2020) and has a positive outlook to the future.

The above short examples give an insight into perception of engagement with medical services, from the challenges as well as emotions triggered. It is suggested that frustrations surrounding medical services impacts the individuals not just physically but psychologically, which in turn creates a further obstacle to recovery. Having a positive, strong support network can assist, and defined motivating influences (De Leo et al, 2021; West & Michie, 2020) but for those that perhaps do not, the obstacles may be ones that are insurmountable (Hoare et al).

4.6.2.2 Perception of support

Research participants all experienced NHS treatment as a result of their injury, whether this be the first port of call, or follow-up where the accident had taken place overseas and recovery continued back in the UK. Initial medical support does not appear to be the first consideration when recalling such care or service, but instead the non-emergency care, of physiotherapy, occupational therapy, psychiatry, and counselling (Hoffmann et al, 2018; Hoare et al, 2017) that are readily discussed, giving the suggestion of disgruntlement, frustration, and the need for improvement. There has been praise (C4: *"doctor did listen and twice referred me to counselling"*; M4: *"counselling has been the most consistent support … physiotherapy was also helpful"*), but perhaps due to the opportunity to share and be listened to as part of this research (Rubtcova & Varlamova, 2019), there was more negative feedback regarding such support, including feeling lost and not having required medical support (C4, M4); frustration at the strain NHS is now under and impact to patients' lives (C6); not being listened to (Wefald, 2021) and believed, respected and supported (N1, N3).

There is a general consensus of someone with a walking spinal injury / condition falling *"through the cracks"* of care (Jeawon et al, 2023), as stated by C1, with little help for those who can walk. As such, it is with no surprise, all participants called for more help to be made available to better assist mobility and quality of life, and a need for individualised home plan highlighted. Such focus may not necessarily involve dedicated teams, but suggestions for more information to be readily available, including recommended patient booklets, online and in-person support groups, talking support, as all requested by C1, C5, M2, M3, N1 (SIGN, 2019).

4.6.3 Conclusion - Signposting and support network

The ability to know where to turn to, as well as how to then access support is essential as part of an individual's recovery following a walking spinal injury, where first contact is usually through medical channels, whether admitted to hospital or as an outpatient, and various touch points, professional support including GPs, consultants, surgeons, physiotherapists, psychiatrists, occupational therapists, and counsellors. Where the level of care falls below the perception of what is needed or expected, an individual is not only physically impacted, but psychologically (Hoare et al, 2018), which can escalate with lower motivation, negative outlook, frustration and potentially, less effort to adapt to life as it is now (Markey, Dunaev & August, 2020; West & Michie, 2020). Yet, where care is as needed, and individuals, importantly feel they are being listened to (Jahromi et al, 2016) and fully supported in adapting to life (Jeawon et al, 2023; Martz et al, 2014), the outlook of the future is more positive, and there is greater confidence to managing life back home. However, what is apparent through this research is the disconnection of professional support once discharged from care, and having to manage life at home (Jannings & Pryor, 2012), to which there is mixed experience as to how smooth this will be, though having an individualised plan is suggested as being important to recovery. In some cases, occupational therapists are engaged to provide aids and advice, as well as signposting to further help and information (Abrash Walton, 2018), yet this is not a consistent approach, to which reasons are unknown, and are outwith the remit of this research.

Social support of family and friends are the first point of personal support for individuals, both during medical treatment and when back home (Skeels et al, 2017), and their input has an influence on the perception of recovery (Tasiemeski et al, 2015). Some research participants shared they were reticent to share how they feel to those closest to them (BackUp, 2020, online), as they wish to be treated as they have always been and not with this now spinal condition, however when openness is achieved, friends and family can assist to finding the wanted or needed support outlets, and not feeling isolated to manage alone.

Charities, not-for-profit organisations, online platforms, and support groups are other participant-found routes to help, all of which giving accessibility, a variety of aids and the opportunity for an individual to remain in control of how they wish to engage, and to what help they wish at the time. Having such access again provide reassurance of being alone, and that there are others who are in similar situations.

All participants highlighted the need for both social and professional support in place, where there is continuity, trust, and the ability to be supported beyond hospital recovery time. Having a solid, trusted support network directly impacts WSC's engagement in activity, as encouragement, information, inclusion, and empathy provide a support mechanism that is required by an individual at varying levels during and beyond recovery.

4.7 Discussion of ratings given to questions

Chapters 4.3 to 4.6 have discussed and analysed the qualitative research data as per the themes generated as a result of reflexive thematic analysis (Braun & Clarke, 2018). Qualitative research sits at the foundation of this study, providing rich, emotional insights, and as such, data has been presented thematically, with participant quotes and references given, as well as highlighting relevant literature.

However, as discussed in Chapter 3, all participants were asked the questions as shown in Table 13, and to which they were also asked to rate the questions as part of their answers. The purpose of this was to enable consistency of collating data when a third party was involved (BackUp) and the ratings could be used as discussion points during the interview stage. This does not detract from this being a qualitative study, but it was deemed important as BackUp already used a ratings interview style and they would continue to do so regardless if the author would or not. Therefore, it was decided to have ratings asked at the stages of Phase One and Two (see Chapter 3.2). For transparency and background, an overview of the ratings from the questions are now discussed, providing further insights with regards to behavioural change in relation to coaching and mentoring talking support for the WSC.

4.7.1 Start to end of coaching / mentoring programs (Phase One)

As discussed in Chapter 3, all coachees and mentees engaged with a mentoring program, each being offered up to 10 sessions (Cadematori et al, 2021), with coachees working with the author (an accredited coach), and mentees working with BackUp volunteer mentors. Within each program, 100% of coachees fully completed their coaching program and 20% of mentees, with the other mentees giving an average of 4.25 sessions before leaving the program. The Neutrals group information at this stage is not applicable, as they did not participate in either program, hence they are the neutral group of having had no such support in the past, thus their perception and input is valued as non bias.

The following tables show the results for both coachees (Table 28) and mentees (Table 29), where each participant shown along the top having three columns underneath – a rating for start of program, a rating for end of program, then the outcome column which states the variable of rating, either a + figure for how many points the rating went up, a – figure for reduction in rating, or a 0 to illustrate the rating stayed the same. Each participant was asked to rate each question 1-10, whereby 1 being the lowest / worst they can feel about it, and 10 being the highest / most elated. Such numeric ratings are commonly used in pain and spinal clinics (NHS, 2022, online; Hawker et al, 2011), as such are familiar to those in the WSC (Chapter 2) and this scaling is easy to understand and use for the purposes of this research. The coachees ratings were given as honest reflection on the day without any guidance of previous ratings, instead allowing the participant to give honestly without prejudice (Ciammaichella et al, 2022). The mentees scorings were given to the BackUp team, and with a degree of perceived prejudice as BackUp support team were sharing previous ratings in error in the earlier stages of the study, despite being asked to make sure this would not happen (see Chapter 3.2.8). Ratings were used to further prompt discussions with each participant when the author was in direct contact with each, during Phase Two.

Neutrals are not shown in the following tables as they did not form part of Phase One due to not participating in either coaching or mentoring programs.

	C1			C2			C3			C4			C5			C6		
	start	finish	outcome	start	finish	outcome	start	finish	outcome	start	finish	outcome	start	finish	outcome	start	finish	outcome
1. I feel positive about the future (1-10 rating)	6	8	+2	7	8.5	+1.5	5	7	+2	5	6.5	+1.5	7	8	+1	8	9	+1
2. I feel supported by the people around me (1-10 rating)	5	7	+2	7	7	0	5	6	+1	5	5	0	7	7	0	7	8	+1
3. I have the opportunity to go out / engage in meaningful activities (1-10 rating)	5	7	+2	6.5	7	+0.5	4	7	+3	5	7	+2	8	8	0	7	8	+1
4. I feel confident about my situation and moving on with my life (1-10 rating)	6	8	+2	7	8	+1	6	7	+1	5	6.5	+1.5	8	9	+1	8	9	+1
5. My rating of my general wellbeing (1-10 rating)	6	8	+2	7	8	+1	6	6	0	5	7.5	+2.5	8	8	0	7	7	0
6. I feel connected with someone in a similar situation (1-10 rating)	3	4	+1	6	6	0	6	6	0	3	4	+1	5	5	0	5	6	+1
7. (SCI-W) I feel motivated to take part in some physical activity (gardening work etc not necessarily linked to exercise) (1-10 rating)	5	9	+4	7	9	+2	6	7.5	+1.5	3	7	+4	9	9	0	9	8.5	-0.5
8. What changes has your spinal condition brought in relation to your activities, sports, hobbies? (open discussion) (ratings 1-10)	2	7	+5	4	6	+2	1	5	+4	2	5	+3	4	6	+2	4	6	+2
9. To what level do you still consume / participate any activities? (1-10 rating)	4	7	+3	6	8	+2	3	5	+2	2	5	+3	5	7	+2	7	7	0
10. Feedback / discussion surround Qs 1-9																		

Table 28: Start to completion of program - Coachees

	M1			M2			M3			M4			M5		
	start	finish	outcome	start	finish	outcome	start	finish	outcome	start	finish	outcome	start	finish	outcome
1. I feel positive about the future (1-10 rating)	3	6	+3	6	8	+2	4	6	+2	10	10	0	2	1	-1
2. I feel supported by the people around me (1-10 rating)	5	5	0	7	9	+2	8	8	0	8	9	+1	2	1	-1
3. I have the opportunity to go out / engage in meaningful activities (1-10 rating)	7	7	0	5	7	+2	7	6	-1	4	7	+3	3	1	-2
4. I feel confident about my situation and moving on with my life (1-10 rating)	5	7	+2	5	7	+2	3	6	+3	6	9	+3	2	1	-1
5. My rating of my general wellbeing (1-10 rating)	6	7	-1	5	7	+2	6	7	+1	9	10	+1	3	1	-2
6. I feel connected with someone in a similar situation (1-10 rating)	1	3	+2	4	9	+5	1	7	+6	7	10	+3	2	1	-1
7. (SCI-W) I feel motivated to take part in some physical activity (gardening work etc not necessarily linked to exercise) (1-10 rating)	10	10	0	7	9	+2	8	9	+1	9	9	0	2	3	+1
8. What changes has your spinal condition brought in relation to your activities, sports, hobbies? (open discussion) (ratings 1-10)	5	4	-1	7	6	-1	5	4	-1	2	4	+2	1	1	0
9. To what level do you still consume / participate any activities? (1-10 rating)	10	5	-4	9	7	-2	8	5	-3	3	5	+2	1	1	0
10. Feedback / discussion surround Qs 1-9															

Table 29: Start to completion of program - Mentees

When first looking at Table 28, the coachees show an overall positive change in ratings. In particular, participant C1 saw growth in ratings across all questions, with a very positive outlook: *"the coaching has made me think outside my inner world. I was excited about what we worked on and last couple months has shown I really do have more control than I believed"*. C1 has since increased physical activities, regaining some of what was enjoyed before (swimming, netball and walking), as well as making a conscious effort to try further non-impact sports which also offer further opportunities for social engagement (Gupta et al, 2019). They say the increase in activity has also helped with pain management, and believe this also is reflected in higher ratings as they feel better in themselves in general. Participants C2, C3, C4, C5 and C6 also either saw improvements in perceived rating scores across all questions, or at least stayed the same, and there was zero decline in any of the question areas amongst the Coachees group. Q7 ('I feel motivated to take part in some physical activity') was one that saw significant increases of up to +4 by both C1 and C4, and as mentioned already, C1 shared they now seek further opportunities to get active, and this is echoed by C4 who highlighted prior to the coaching program, they realise it was their mind that gave obstacles, as opposed to the perception that it was pain or ability (Muller et al, 2022). This has shifted, and as a result, C4 is far more active, which is positively impacting wellbeing, outlook (Petersen, Meade & Mahmoudi, 2022), and they see the program as helping get their life back on track.

Looking along the lines of the questions, another interesting change was 100% of the coachees felt improvement and rated their previous answer higher for Q1 ('I feel positive about the future'), Q4 ('I feel confident about my situation and moving on with my life') and Q8 ('What changes has your spinal condition brought in relation to your activities, sports, hobbies?'), with this last question seeing high rate changes, +5 (C1), +4 (C3), +3 (C4). The positive changes from the initial session to end of program have already been discussed earlier in this chapter, where a deeper sense of why is established (West & Michie, 2020; Abrash Walton, 2018), the motivation levels increase and a determination to overcome barriers to engagement, even if this means some activities must be changed out or adapted (Chapter 4.5.1.4), with less impact activities more readily enjoyed (Figure 35). The ratings also helped to give an indication of perception at that moment of asking, and prompted further discussions to give depth of understanding as to reasonings, emotions and thoughts (Chemtob et al, 2018).

In relation to mentees (Table 29), one mentee (M4) saw an increase in ratings across all the question areas, and has a positive outlook in general, as can be noted by the high scores at the start (Q1, Q2, Q5, Q6, Q7) and on completion of the mentoring program (Q1, Q2, Q4, Q5, Q6, Q7). Maintenance of initial higher ratings are shown for Q1 and Q7, and growth areas from lower initial scores shown on three questions. M4 is not typical of the mentees group, though either is M5 who maintains very low perception and outlook, hence ratings remain low.

With regards to other mentees, each show a mix of maintained score, increased ratings, as well as decrease in ratings, with the latter showing M1, M2 and M3 all having a reduction in rating for perception towards the level of activity they are still engaged with (Q9), with M1 giving a reduction of -4 and M3 giving a reduction of -3, which are considerable drops in a relatively short period of time, during which they are being given talking support. Reasoning given on the day of end of program interviews for these lower figures are unknown due to BackUp team being the direct link to the mentees at that stage, but they were discussed with mentees during the next phase of 3-month follow-up.

M2 does show overall improvement across all questions, apart from Q8 and Q9, where they did not believe there had been any improvement in relation to being active, and if anything were less active by this point. However, as with M3 and M4, there was a significant increase in the perception of connection with someone in a similar situation (Q6), which *'helped to lift spirits'* (M2) and provide a platform to be listened to, without judgement and with understanding (Nichols & Straus, 2021; Market et al, 2020).

When considering the results for both coachees and mentees, from start to completion of the programs, the tables alone show coachees making greater progress, though of course, it was the earlier discussed qualitative data that gives depth of understanding, and avoids the reliance on the numerical data itself, which can be perceived as limiting.

4.7.2 – End of programs to 3-month follow-up (Phase Two)

Phase Two consists of the 3-month follow-up session and feedback with coachees and mentees, where all participants are now in direct contact with the author, and the indepth qualitative interviews can take place, encouraging richness of data. The Neutrals group were also invited to participate at this stage, and although they were not involved in any program prior to this stage, they were invited to share their thoughts, perceptions, and outlook on all questions in a non-bias way to the support, including the open questions of 11-13 (see Table 13), and were also offered a coaching session as a thank you for participation, and therefore had the opportunity to experience coaching support.

The separate results tables for Coachees, Mentees, and Neutrals are shown over the next three pages then discussed in the order as stated here.

	C1			C2			C3			C4			C5			C6		
	finish	3mth	maintain	finish	3mth	maintain	finish	3mth	maintain	finish	3mth	maintain	finish	3mth	maintain	finish	3mth	maintain
1. I feel positive about the future (1-10 rating)	8	9	+1	8.5	8.5	0	7	7	0	6.5	7	+0.5	8	8.5	+0.5	9	9	0
2. I feel supported by the people around me (1-10 rating)	7	7	0	7	7.5	+0.5	6	6	0	5	5.5	+0.5	7	7	0	8	7.5	-0.5
3. I have the opportunity to go out / engage in meaningful activities (1-10 rating)	7	7	0	7	7.5	+0.5	7	6.5	-0.5	7	7	0	8	8.5	+0.5	8	8	0
4. I feel confident about my situation and moving on with my life (1-10 rating)	8	8	0	8	8	0	7	7.5	+0.5	6.5	7	+0.5	9	8	-1	9	8	-1
5. My rating of my general wellbeing (1-10 rating)	8	7.5	+1.5	8	8	0	6	7	+1	7.5	7.5	0	8	7	-1	7	7.5	+0.5
6. I feel connected with someone in a similar situation (1-10 rating)	4	4	0	6	5.5	-0.5	6	5	-1	4	4	0	5	5	0	6	5	-1
7. (SCI-W) I feel motivated to take part in some physical activity (gardening work etc not necessarily linked to exercise) (1-10 rating)	9	9	0	9	9	0	7.5	7.5	0	7	7	0	9	9	0	8.5	8.5	-0.5
8. What changes has your spinal condition brought in relation to your activities, sports, hobbies? (open discussion)	7	7	0	6	6	0	5	5	0	5	5	0	6	7	+1	6	7.5	+1.5
9. To what level do you still consume / participate any activities? (1-10 rating)	7	7.5	+0.5	8	8	0	5	6	+1	5	7	+2	7	7	0	7	8	+1
10. Feedback / discussion surrounding Qs 1-9																		

Table 30: Comparison of end of program to 3-month follow-up - Coachees

	M1			M2			M3			M4			M5		
	finish	3mth	maintain	finish	3mth	maintain	finish	3mth	maintain	finish	3mth	maintain	finish	3mth	maintain
1. I feel positive about the future (1-10 rating)	6	3	-3	8	7	-1	6	8	+2	10	10	0	1	n/a	
2. I feel supported by the people around me (1-10 rating)	5	3	-2	9	9	0	8	7	-1	9	8	-1	1	n/a	
3. I have the opportunity to go out / engage in meaningful activities (1-10 rating)	7	5	-2	7	6	-1	6	8	+2	7	10	+3	1	n/a	
4. I feel confident about my situation and moving on with my life (1-10 rating)	7	3	-4	7	7	0	6	7	+1	9	10	+1	1	n/a	
5. My rating of my general wellbeing (1-10 rating)	7	6	-1	7	6	-1	7	6		10	10	0	1	n/a	
6. I feel connected with someone in a similar situation (1-10 rating)	3	0	-3	9	8	-1	7	4	-3	10	10	0	1	n/a	
7. (SCI-W) I feel motivated to take part in some physical activity (gardening work etc not necessarily linked to exercise) (1-10 rating)	10	7	-3	9	9	0	9	8	-1	9	10	+1	3	n/a	
8. What changes has your spinal condition brought in relation to your activities, sports, hobbies? (open discussion) (ratings 1-10)	4	4	0	6	6	0	4	5	+1	4	6	+2	1	n/a	
9. To what level do you still consume / participate any activities? (1-10 rating)	5	5	0	7	6	-1	5	5	0	5	6	+1	1	n/a	
10. Feedback / discussion surround Qs 1-9															

Table 31: Comparison of end of program to 3-month follow-up – Mentees

	N1	**N2**	**N3**	**N4**
1. I feel positive about the future (1-10 rating)	3	6	7	5
2. I feel supported by the people around me (1-10 rating)	6	6	6.5	5
3. I have the opportunity to go out / engage in meaningful activities (1-10 rating)	5	6	7	6
4. I feel confident about my situation and moving on with my life (1-10 rating)	3	7	6.5	6
5. My rating of my general wellbeing (1-10 rating)	3	6	6	6
6. I feel connected with someone in a similar situation (1-10 rating)	1	1	1	1
7. (SCI-W) I feel motivated to take part in some physical activity (gardening work etc not necessarily linked to exercise) (1-10 rating)	6	7	7	6.5
8. What changes has your spinal condition brought in relation to your activities, sports, hobbies? (open discussion) (rate feelings 1-10)	1	6	7	5
9. To what level do you still consume / participate any activities? (1-10 rating)	1	6	6	6
10. Feedback / discussion surround Qs 1-9	n/a	n/a	n/a	n/a

Table 32: Ratings by Neutrals against Q1-10

When analysing coachees' ratings at the follow-up stage of at least three months after the completion of their coaching program (Table 30), the levels of maintenance are high, whereby all coachees had at maintained the same perceived outlook rating for at least four of the nine questions, and increased their ratings of a least another two further questions. Participant C1, C3 and C4 either maintained or increased rating; C2 decreased their rating by -0.5 (Q6, feeling connected to someone in similar situation); C5 decreased rating -1 for Q4 (feeling more confident about situation) and Q5 (rating of general wellbeing); and C6 decreased their rating by -0.5 (Q2, supporting by those around me and Q7, feel motivated to take part in physical activity), and also by -1 (Q4, feel more confident about situation, and Q6, feel connected to someone in similar situation). However, when exploring the ratings, for the -0.5 and -1 ratings, participants responded it was hard to judge how to rate the level, stating *"feels like when I first finished the coaching, I still feel good"*, and didn't recall where they used the scale previously. This highlights the subjective nature such ratings can offer, as someone may feel the same as a time before but give a different scoring as the rating may be viewed differently on the day (Frijters, 2020; Williams et al, 2014). However, as shown earlier in Chapter 4, the interview discussions enabled an environment to explore further, achieving depth and richness of data, and a greater understanding overall for each question. In relation to Table 30 itself, it is surmised the coachees have a high level of maintenance to where they felt regarding general wellbeing, how motivated they were, and how engaged they were in physical activity compared to where they were when they completed their coaching program. In contrast to the coachees numerical data as shown in Table 28 (ratings at start and end of the program), there is a levelling to the progression of change, with the greatest difference already being achieved, yet it is important to acknowledge achieved maintenance, avoiding the slippage back to old behaviours and habits (Prochaska & DiClemente, 1986).

When examining the mentees table (Table 31) with regards to overall general ratings and perception, there are wider disparities between the ratings when finished the mentoring programs and at the minimum 3-month follow-up. Participants M1 and M2 either maintained or saw a drop in ratings, with M1 having a drop of up to -4 rating (Q4, feeling confident about situation) and -3

(Q1, feeling positive about the future; Q6, feeling connected with someone in similar situation, and Q7, feeling motivated to take part in some physical activity). It was only through the discussions that the author was able to understand reasonings for such drop in ratings for M1, and this included no longer being in touch with mentor and went back to feeling disconnected to anyone in similar situation (Pierce et al, 2020), not knowing how to best handle situations, and they felt their moods changed as a result, where they became less motivated and somewhat withdrawn from others. They also highlighted that as they only had half the mentoring program sessions, as both mentor and M1 agreed, but that they maybe did not get full benefit. However, in saying that, M1 did make clear the mentoring helped at the time, even if maintenance was not achieved across all areas, with the main benefits including signposting to further organisations, and *"helping with the emotional side"*. M2 either gave the same rating as at the end of the mentoring program or dropped by -1 (Q1, 3, 5, 6, 9), with the perception being they believed they were in a similar mindset on all questions as when they completed their program. Both M3 and M4 saw improvement on half the questions, both of which included having more opportunity to go out and get engaged in physical activity (+2 and +3 respectively), and both increased by +1 with regards to feeling more confident about their situation. Any decline from M2, M3 and M4 is down by 1 rating point. As with the coachees, any small decline in rating is subjective (Lieberman, 2022) and maybe they thought they were at the same stage / level as before, and the deeper understanding was gained through the interview discussions, as analysed earlier in this chapter. M5 did not provide ratings, although did provide rich data through communication, and as such, their ratings are not shown in the tables for this stage. When looking at the individual questions, the one that stands out for reverting or making no progress is Q6, ('feeling connected with someone in a similar situation'), and this was highlighted earlier in the chapter in relation to the social networks (Hoare et al, 2017) that are established.

The Neutrals participant group were invited to participate as fully as feasibly possible given they had no prior coaching or mentoring, but to share their ratings and give insights into their perception for each question, to welcome discussions, and give their thoughts on the support surrounding their recovery and behaviours towards exercise. The ratings data is limited (Table 32), but depth of information was shared during the semi-structured interview style, enabling more data to be gathered, greater understanding of this group, and to be able to give a level of comparison with coachees and mentees. At the time of interview, participant N1 was finding managing life with a spinal condition more challenging than the other neutrals, with low marks given for a number of questions, with the scoring of 1 for Q6 ('feeling connected with someone in a similar situation'), Q8 ('perception of the changes the spinal condition has brought in relation to activities, sports, hobbies') and Q9 ('to what level is activity still consumed'). One of those questions (Q6) provides consistent low mark by each Neutral, where all stated a 1 out of 10, with this question also seeing low level rating across all Coachees, Mentees and Neutrals groups. N1 also believed there was only negative viewpoint to the changes their spinal condition brought to their life including activities, and this has greatly impacted engagement, though following the coaching session and private communication thereafter, there was a shift in this and N1 is approaching trialling activities differently and now finding some enjoyment once again. N2, N3 and N4 show middle ratings (5-7) for all questions, yet as discussed earlier in the chapter, they have found the recovery and adaptation frustrating (Martz et al, 2001), particularly where lack of support is prevalent, as well as the feelings of isolation and limitations (Williams et al, 2019).

4.7.3 – Start to 3-month follow-up

In this final section to discussing the ratings as given by participants, the following Table 33 provides an overview of the ratings as given by coachees and mentees at the start of the program, finish and the 3-month interview stages. When looking at the two groupings, and purely looking at the ratings given, the numeric data shows coachees gained greater benefit of the talking support program, compared to mentees. Coachees show an overall trajectory of improvement over the duration of the course, to which has already been discussed that each fully committed and engaged in all 10 sessions. Furthermore, by the 3-month follow-up stage, a level of maintenance has been achieved, with any dropping of ratings is to a maximum of 1 point, to which it has already been highlighted that at times a person believes they feel the same and that they are giving the same rating. Though coachees C2, C3, and C5 shared the commonality of there may not have the same feeling of connecting to someone in a similar situation.

With regards to mentees, there were greater fluctuations in the ratings from start to 3-month follow-up, and only M4 showing maintenance achieved across all areas. As can be seen in the table, M4 offers a positive outlook in general, with 66% of the questions being given 10 out of 10. However, during the interview discussions, M4 also shared why they also applied a positive stance, even if they were not feeling it within themselves, and this was their way of coping (Rocchi et al, 2018), something to which would not have been known if the study only relied on numerical data. Ratings from M1 showed a decline in all questions from start to 3-month stage, where even from end of program to follow-up saw a decline in seven questions, despite starting out at 10 out of 10 for Q7 ('I feel motivated to take part in some physical activity) and Q9 ('to what level do you still consume / participate in any activities). This decline was noticeable and also led to further questions to gain understanding for such declines, including if they felt the original ratings were reflective of how they felt at the time. M2 showed some positive change and were consistent in their feedback, whereas M3 had greater fluctuations across all areas.

	C1			C2			C3			C4			C5			C6			M1			M2			M3			M4			M5		
	start	finish	3mth	start	finish	3mth	start	finish	3mth	start	finish	3mth	start	finish	3mth	start	finish	3mth	start	finish	3mth	start	finish	3mth	start	finish	3mth	start	finish	3mth	start	finish	3mth
1. I feel positive about the future (1-10 rating)	6	8	9	7	8.5	8.5	5	7	7	5	6.5	7	7	8	8.5	8	9	9	3	6	3	6	8	7	4	6	8	10	10	10	2	1	n/a
2. I feel supported by the people around me (1-10 rating)	5	7	7	7	7	7.5	5	6	6	5	5	5.5	7	7	7	7	8	7.5	5	5	3	7	9	9	8	8	7	8	9	8	2	1	n/a
3. I have the opportunity to go out / engage in meaningful activities (1-10 rating)	5	7	7	6.5	7	7.5	4	7	6.5	5	7	7	8	8	8.5	7	8	8	7	7	5	5	7	6	7	6	8	4	7	10	3	1	n/a
4. I feel confident about my situation and moving on with my life (1-10 rating)	6	8	8	7	8	8	6	7	7.5	5	6.5	7	8	9	8	8	9	8	5	7	3	5	7	7	3	6	7	6	9	10	2	1	n/a
5. My rating of my general wellbeing (1-10 rating)	6	8	7.5	7	8	8	6	6	7	5	7.5	7.5	8	8	7	7	7	7.5	6	7	6	5	7	6	6	7	6	9	10	10	3	1	n/a
6. I feel connected with someone in a similar situation (1-10 rating)	3	4	4	6	6	5.5	6	6	5	3	4	4	5	5	5	5	6	5	1	3	0	4	9	8	1	7	4	7	10	10	2	1	n/a
7. (SCI-W) I feel motivated to take part in some physical activity (gardening work etc not necessarily linked to exercise) (1-10 rating)	5	9	9	7	9	9	6	7.5	7.5	3	7	7	9	9	9	9	8.5	8.5	10	10	7	7	9	9	8	9	8	9	9	10	2	3	n/a
8. What changes has your spinal condition brought in relation to your activities, sports, hobbies? (open discussion)	2	7	7	4	6	6	1	5	5	2	5	5	4	6	7	4	6	7.5	5	4	4	7	6	6	5	4	5	2	4	6	1	1	n/a
9. To what level do you still consume / participate any activities? (1-10 rating)	4	7	7.5	6	8	8	3	5	6	2	5	7	5	7	7	7	7	8	10	5	5	9	7	6	8	5	5	3	5	6	1	1	n/a
10. Feedback / discussion surrounding Qs 1-9																																	

Table 33: Start, end of program and at 3-month review - ratings for Coachees and Mentees

Again, it is important to point out that all coachees participated in the full 10 coaching program sessions, whereas mentees had an average of 4.25 sessions total, and this must be considered when looking at the two groupings, and not necessarily surmise that coachee is more effective than mentoring. As what the qualitative data itself has shown, both these talking platforms are effective and wanted, and an individual’s benefits of such engagement is reflected in the effort and participation. But for the purposes of giving understanding to the methods applied and the phases of the study, including asking for ratings with each question, Chapter 4.7 has provided an overview of changes as given by each participant.

4.8 Conceptual model and framework

As a result of the rich data obtained through this research and the extensive literature review (Chapter 2), two models in particular were considered as being important in understanding factors influencing change management and resultant behaviours, though there were several others which had their relevance in understanding behaviour. As a result of the now deeper understanding of the subject matter as a result of the data analysis, this study proposes COM-B (West & Michie, 2020) and TMM (Prochaska & DiClemente, 1986) are complementary, and are inter-linked to give deeper understanding of behaviour, but do not go far enough in acknowledging the progression of behavioural change depending on state of readiness and influencing factors (Rhodes, McEwan & Rebar, 2019; Abrash Walton, 2018; Norcross, Krebs & Prochaska, 2011; Prochaska, DiClemente & Norcross, 1992). The models are once again shown below, with Figure 19 previously discussed in Chapter 2.4.1.2.

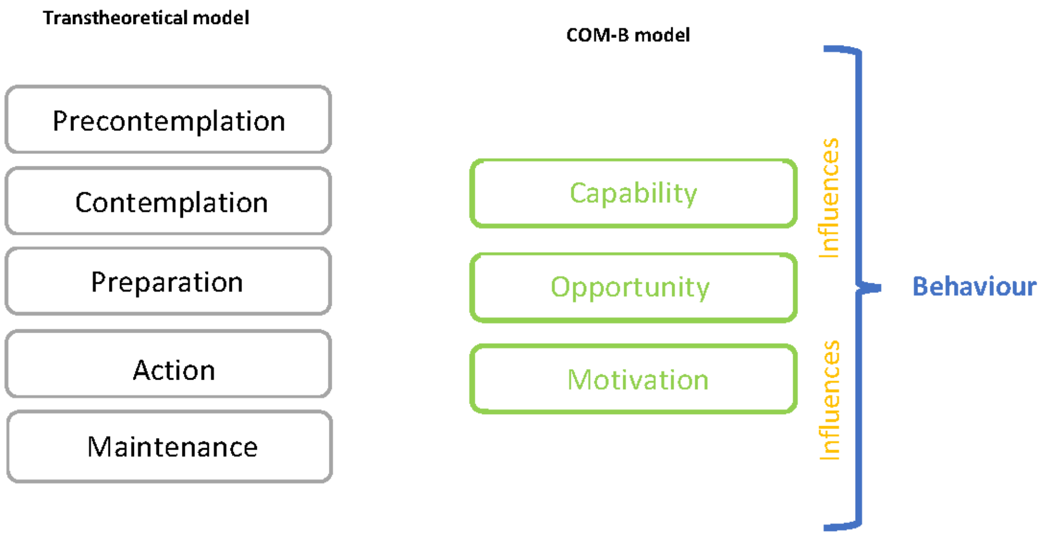


*Figure 19: Transtheoretical Model (*Prochaska, DiClemente & Norcross*, 1992) and COM-B (West & Michie, 2020) models*

As a result of the qualitative research, there has been two distinct developments. Firstly, this study suggests COM-B (West & Michie, 2020) model itself is important in giving focus to three constructs of capability, opportunity, and motivations, but does not go far enough, instead should include impact of support (Lawrason et al, 2022; Chemtob et al, 2018; Bailey et al, 2015; Taleporos & McCabe, 2002), to which has been repeatedly highlighted during this research as essential to recovery, and is supported in literature (Divanoglou & Georgiou, 2016; Gassaway et al, 2016). Although COM-B considers the social factors within the model's Opportunity heading, with interaction of people and organisations being considered as important influencing factors, this is not the same as support (social and professional) being offered (Hoffmann et al, 2018; Rocchi et al, 2018; Finnerup et al, 2016). This chapter has demonstrated depth and accessibility of support network to be a strong influence in perception, behaviour, decisions, and outcomes, and where little to no support is given, recovery is seen as negatively impacted. Secondly, there is further considerations to behaviour, and readiness to change is important, and as a result, a conceptual framework is proposed, incorporating the evolved COM-B model. Both developments are now discussed.

4.8.1 Behavioural COMS model

Although relevant literature highlight support as being important for assisting in recovery and moving forward with life (Sweet et al, 2021; Skeels et al, 2017; Jannings & Pryor, 2012), support is somewhat underplayed for having a direct impact to behaviour, motivations and actions, particularly within the area of spinal injuries. The data analysis within this study has given precedence to both social and professional Support being integral to behaviour, and by having a solid, trusted support in place (Sweet et al, 2021; Wu & Williams, 2001), positive change can and will happen (Zachery et al, 2019). As such, the above COM-B model (West & Michie, 2020) has been further developed, with the following conceptual Behavioural COMS model showing a fourth construct of Support, and acknowledges the influences from this which also impact behaviour.

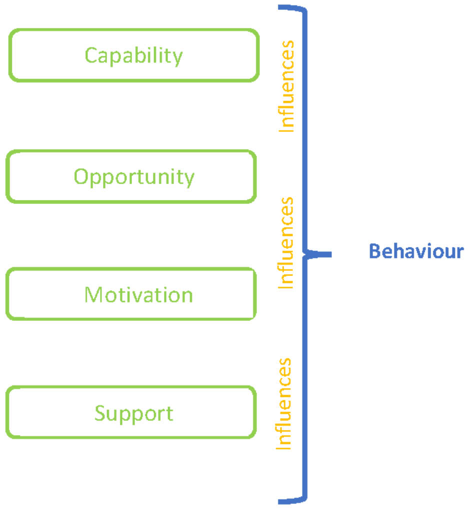


Figure 37: Behavioural COMS conceptual model (Fowler, 2023)

In relation to COM-B (West & Michie, 2020) as shown in Figure 16, to which also displayed the antecedents of the main constructs, the following figure illustrates the proposed Behavioural COMS model. This new model has four constructs (capability, opportunity, motivation, and support), and is shown below with the corresponding antecedents, with Support's being social and professional support (includes talking support):

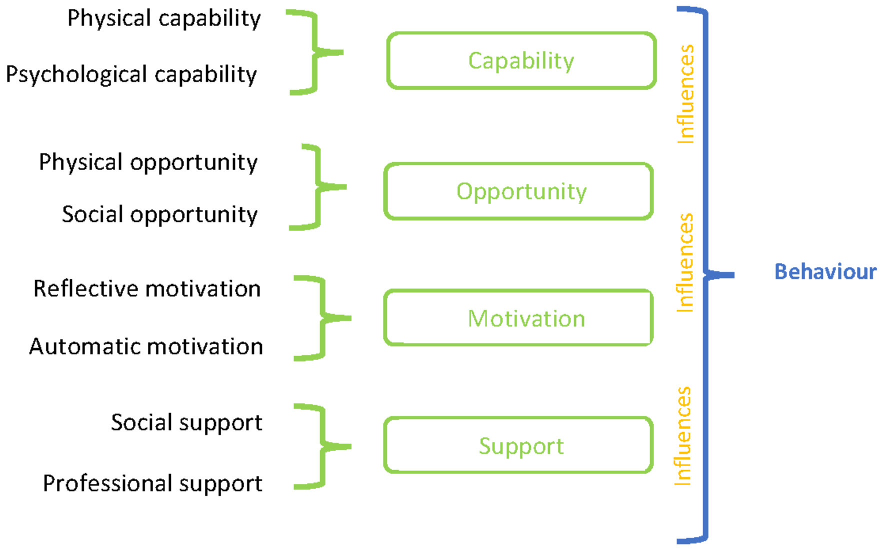


Figure 38: Behavioural COMS model with corresponding antecedents (Fowler, 2023)

The Behavioural COMS model illustrates Capability, Opportunity, Motivation, and Support constructs as being key factors that impact behaviour, and acknowledges there will be influencing factors from all four areas. For instance, as already highlighted in this chapter, where someone in the WSC has received little professional support, there is frustration as well as perceived hindrance to recovery, making adapting to home perhaps harder than should it be with the right support. Having also a strong social support network lessens the feelings of isolation, and where there is a trusted sounding board, assistance, empathy as well as providing avenues to participation in activities. Without one or either, the WSC outlook and motivation diminishes, as does behaviour and decisions.

4.8.2 Positive Behavioural Change framework

With the Behavioural COMS model now addressing Support, to which the research data has highlighted as an essential area of what impacts behaviour of the WSC, a conceptual framework interlinking this with TMM has been developed as part of this research study, applying TMM variations by both Prochaska et al (1985) and Ferron & Massa (2013). This model gives weight to the notion that no matter where an individual sits in the TMM model of behavioural change, they are influenced by the four constructs of Capability, Opportunity, Motivation, and Support (Behavioural COMS), including talking support, and make decisions accordingly, all of which leads further influence behaviour, actions, and outcomes (Kamble, 2021; Baumeister & Bargh, 2014).

Due to the data as shared by participants, and as highlighted in the literature review, the 'terminal' stage of TMM model (Prochaska, DiClemente & Norcross, 1992) has been omitted, as for any behaviour to become habit, ie, embedded and routine, there must be a level of maintenance in approach (Norcross, Krebs & Prochaska, 2011) so there is less likelihood of reverting back to previous behaviours and habits. Thus, maintenance is essential to ensure behavioural change does not revert (Abrash Walton et al, 2022). In relation to physical activity, maintenance would involve the regularity of what is deemed enjoyable, and benefitting health and wellbeing, to which of course there may be a degree of trial and error, as perception may differ from reality, as well as repetition required, as opposed to one off trial. Thus, based on the research, it is suggested the following conceptual framework provides a comprehensive model of change and outcome behaviour, taking into account where an individual is in the stages of behavioural intent, and the Behavioural COMS influences, which give the outcome of behaviour, and where behaviour and action is maintained, habit can be formed, giving long-term change. Furthermore, coaching has been shown to provide substantial improvements to physical and psychological wellbeing, with maintenance achieved (Prochaska, Norcross & Saul, 2020).

Given the now understanding of the relationship between the stages of process of change, and behavioural constructs, the following Positive Behavioural Change conceptual framework is proposed, where Behavioural COMS and TMM are brought together, assisting in recognising, addressing, and promoting positive change and behaviours, and ultimately becoming a mechanism to assist in maintenance of the desired outcome.

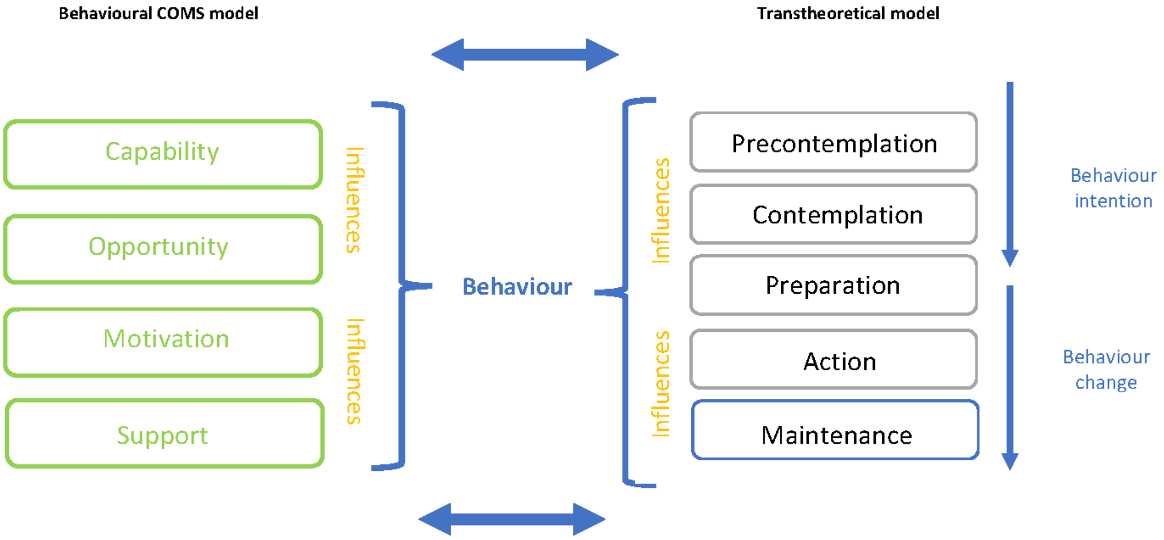


Figure 39: Positive Behavioural Change framework (Fowler, 2023)

Where behaviour is not embedded, the TTM side of the model will see a back and forth movement between stages, as Prochaska, DiClemente & Norcross (1992) have shown with the Change spiral model (Figure 12). But regardless of what stage someone is at of stages of readiness, there are influencing factors in relation to Capability, Opportunity, Motivation, and Support, all of which impact decisions and behaviours, and will impact the progression of an individual. Research participants have demonstrated positive behavioural change can be maintained when there is a deeper why / motivational reason to do something (Beauchamp et al, 2016), but the other influencing factors also sway decisions (Williams et al, 2014). To have an ongoing even permanent change to behaviour, thus habit, maintenance of action is required (Abrash Walton, 2018), and being able to manage the influencing factors as to avoid negative influential impact. TMM's behavioural stages filter into Behavioural COMS elements, and the process is interlinked, with the aim of an individual being able to successfully change behaviours and maintain these going forward. To assist in promoting such positive behavioural change, this model gives equal weighting to the Behavioural COMS constructs at all stages of readiness.

To clarify what each framework construct means, the following tables provide descriptions, with the first focusing on TMM, to which the antecedents of each construct has been amended to give clarity and progression, developing upon the work of Prochaska (2008), Prochaska, DiClemente & Norcross (1992), and Norcross, Krebs & Prochaska, 2011) (see earlier Table 4):

Precontemplation	Not ready / unaware	Not intending to take any change action, and can be unaware of the impact their current behaviour. Content with the status quo, unaware change is needed.
Contemplation	Awareness / Consideration	Beginning to recognise that behaviour is a problem or barrier to goals or desires, and start to look at potential change that will bring wanted outcomes, as well consideration as to the action that may be required.
Preparation	Getting Ready	Planning the action to be taken in the immediate to near future, and tackling any obstacles to assist the preparation. Ready to take steps to changing behaviour.
Action	Action	Specific changes have been made to better behaviour and acquire new healthier habits. Action is regularly self-reviewed and undertaken, ensuring behaviour aligns with desired outcome.
Maintenance	Six months plus	Maintaining new behaviour, habits and attitudes for at least 6 months, not wishing to revert, and viewing maintenance as a continuum.

Table 34: TTM stages of readiness descriptions as part of Positive Behavioural Change conceptual framework (Fowler, 2023)

With regards to Behavioural COMS model, as part of Figure 47, the original descriptors of Capability, Opportunity and Motivation as shared by West & Michie (2020) in Figure 16, have been reviewed and expanded, and Support now being added.

Capability	Capability, both physical and psychological, is recognised as an attribute to which a person’s behaviours and decisions are based upon, and to which the perception can help or hinder potential change and action.
Opportunity	Opportunity provides the sense of hope and possibilities, and is presented through people and situations, the environment to which a person works within, and to which impacts behaviour.
Motivation	Motivation is the personally embedded thought processes that gives reasons to act or behave in a particular way, with emotionally connected motivation giving deeper drive in change and behaviour.
Support	Support is an attribute of the success of managing challenging situations and achieving goals, with social and professional support networks providing trusted emotional and practical help.

Table 35: Behavioural COMS model construct descriptions (Fowler, 2023)

The Positive Behavioural Change conceptual framework addresses the inter-relationship between the two models, whilst also developing both where necessary and bringing them together to create an approach that is proposed gives both academic and practical aide to better understand the response to change, and what can influence behaviour and the resultant outcomes, with support now being acknowledged a key component in making this successful.

4.9 Chapter summary

Chapter 4 discussed the qualitative research results of four key themes: coaching and mentoring talking support, impact from walking spinal condition, engagement in physical activities, and signposting and support network, all of which were demonstrated to be interlinked in the understanding of the WSC’s behaviours and motivations surrounding physical activity.

As already highlighted during this study, adapting to life following a spinal injury is challenging and can be life-altering (Hastings & Horn, 2009), especially during hospitalisation then adapting to home life (Divanaglou & Georgiou, 2016; Jannings & Pryor, 2012), which may or may not see professional or social support being readily available through this time of transition. Wellbeing can be negatively impacted, and an individual is faced with learning how to best manage all they are faced with (Frijters, 2020), including chronic pain, which is common with those who have endured a spinal injury (Collier, 2018; Finnerup et al, 2016). This study has given a voice to the WSC community, and has demonstrated having access to and understanding of support through coaching and mentoring can potentially assist the recovery, reducing the likelihood of feelings of isolation, frustration, anxiety, misunderstanding, better safeguarding mental health, as well as addressing worries fear of the future, and is proven to significantly enhance likelihood of behavioural change and positive outcomes.

The research has demonstrated the importance of accessing coaching and mentoring talking support, whereby these differ from counselling (Hart, Blattner & Leipsic, 2001), as they encourage an individual to consider the present day and to look ahead, rather than back (Wefald, 2021). On reviewing the data, it has become apparent there is clear variation between Mentees, Coachees and Neutrals recovery experiences, including outlook and activity engagement, with Neutrals showing greater frustration with recovery, care, and the lack of talking support to help process what happened. Overall, mentees share a positive experience, though they did not follow through with all the offered sessions, instead stopping when the mentor or mentee felt no more progress was to be made. Regardless, benefits were experienced by all mentees, and an overall improvement in ratings. Coachees showed the greatest positive impact from talking support, though this may be due to each coachee undertaking the full 10 sessions, and so benefitted from the sharing, being listened to, learning techniques, and have trusted support for extended duration of time (Wefald, 2021; Jahromi et al, 2016), compared to the majority of mentees.

This research has demonstrated coaching and mentoring offer a purposeful and measurable form of talking support to the walking spinal community, giving a safe environment to explore thoughts, behaviours and perceptions, to gain the empathy and support needed in that time of their life, as well as look ahead, set goals and to enjoy life in whatever form that takes, therefore have a more positive outlook (Market et al, 2020). Overall, those who underwent the programs shared the benefits of experiencing greater depth of support, being listened to, improved mental health, learnt tools and techniques to help move forward, and were motivated thus, took actions. In particular, being physically active was desired by all participants, yet support was needed to face what may be daunting experiences to then enjoyment once more, with coachees having greater success in engaging with activities and maintaining these. Furthermore, the Neutral participants also gave weight to this, having had no such support before, to which they shared frustrations and feelings of isolation, yet experienced coaching as part of their research involvement, with 100% reaping benefits, including their engagement in being physically active.

There is much research linking physical activity and the importance to mental health and general wellbeing (Xu et al, 2021; Caponnetta et al, 2021; Glowacki et al, 2017). As a result of this study, four key constructs to behaviour have been established, which in turn impacts engagement of physical activity, and builds upon COM-B model (West & Michie, 2020): capability, opportunity, motivation, and support, and to which each will have corresponding personal influential factors to address. This study's findings give precedence to Support (social and professional) having an equal importance to the three constructs of COM-B model (West & Michie, 2020), leading to the creation of Behavioural COMS conceptual model, and to which is then applied to developed Positive Behavioural Change conceptual framework, which encompasses Behavioural COMS and TMM (Prochaska, DiClemente & Norcross, 1992) models.

Having trust, and clear routes to social and professional support has been highlighted as essential part of an individual's recovery following a walking spinal injury, where first contact is usually through medical channels, whether admitted to hospital or as an outpatient, and various touch points, professional support including GPs, consultants, surgeons, physiotherapists, psychiatrists, occupational therapists, and counsellors. The social support of friends and family, and anyone else outwith professional realms, is also important, as they can offer empathy, someone to talk to, to assist where necessary and to also encourage and participate in activities. However, psychological and physical needs (Chemtod et al, 2018; Gassaway et al, 2018; Rocchi et al, 2018) are not always understood nor easily accessible, which greatly impacts mental health, actions, behaviour and general wellbeing, all of which can be improved by having the right support in place.

By addressing the unique needs and challenges faced by the walking spinal community, this research gives weight to coaching and mentoring providing an effective platform to empower individuals to take an active role in their own health and wellness, which includes being physically active, and the resultant positive effects to day-to-day behaviour, motivation, and life.

Chapter 5.0

Conclusion

5.0 Introduction to conclusion

The aim of this thesis was to explore and critically evaluate the impact coaching and mentoring has as a talking support in relation to the Walking Spinal Community's behavioural change and motivations to being physically active. This chapter concludes the study by providing an overall summary of work, including evidencing attainment of the research objectives as set out in Chapter 1; discussing the thesis' contribution to knowledge; and also considers the limitations of this study, as well as provide recommendations and potential areas for further research.

In particular, this chapter focuses on three key areas to which this study has contributed to knowledge: a greater understanding of the WSC's behavioural changes and motivations surrounding being physically active; the impact support as on the WSC's recovery and activity; and developing a conceptual model and framework to better understand behavioural change.

5.1 Summary of work

In order to address Research Objectives 1, 2 and 3 (see Chapter 1), extensive literature review was undertaken, to which aided identifying relevant themes and the resultant research area to be further investigated. Thereafter, four research questions were formulated and addressed throughout Chapter 4, with specific sub chapters giving focused results and discussion to each:

1. To what extent are coaching and mentoring effective platforms for talking support for the WSC? *(Chapter 4.3)*
2. What are the key factors regarding impact of sustaining a spinal condition? *(Chapter 4.4)*
3. To what extent does WSC's behaviours and motivations impact participation in physical activity? *(Chapter 4.5)*
4. To what extent does having a trusted support network impact the WSC's activity levels? *(Chapter 4.6)*

To meet the aims of Research Objective 4, an interpretivist, qualitative research methodology was applied, with research questions and in-depth interviews having taken place over video call technology (Teams / Zoom / Whatsapp video) undertaken over a duration for the heterogeneous sampling of three groupings, Coachees, Mentees, and Neutrals. This involved Phase One’s talking support programs and interviews, and Phase Two, where all participants had direct contact with the author when engaging in the follow-up interviews which took place at least three months later. The results, as discussed in Chapter 4, showed the approach was valid, where measurement and depth of data were achieved, insights gained into behaviour, motivations, and perception surround activity at varying stages in a timeline, and the semi-structured interviews enabled further relevant discussions with participants, which it is believed would not have been achieved without this approach.

Research data was thematically analysed both manually and by using NVivo software (Braun & Clarke, 2018), to which four overall themes emerged (coaching and mentoring as talking support, impact of walking spinal condition, engagement in physical activity, and signposting and support network), and their corresponding sub themes. These themes have been discussed in Chapter 4, aided by the rich data as provided by participants of the qualitative research, including quotes, observations, pie charts, graphs, and word clouds to give greater understanding to each, whilst also linking to key literature as already highlighted earlier in this study.

This research has highlighted sustaining a spinal injury has far-reaching impact, with physical and psychological consequences proving challenging (Chemtod et al, 2018), the degree of which varying for each person. Personal experiences are subjective (Hoare et al, 2017), and as such, acknowledgement is given that what has been shared is reflective of each person, and great care was taken during the interviews to be mindful of discussions prompting thoughts and emotions due to the sensitive nature of the subject area (Bryan et al, 2015). Key factors to sustaining such an injury are pain management and wellbeing (Widerstrom-Noga et al, 2016), both of which having a direct effect on decisions made, including being physically active. This study demonstrated emotions, thoughts and perceptions could either help or hinder decisions (Tremolada, 2015), with capability being questioned, particularly where these was a lack of support and encouragement, all of which impacting being active.

Where there was a deeper emotional motivational reason to being active, there was a greater determination to at least try, adapt or find a new way to bring enjoyment once again (Michalovic, Rocchi & Sweet, 2019; Basler et al, 2015). Participants who had this connection had a more optimistic view of their capability, and were willing to seek new opportunities (West & Michie, 2020), whether in group or solo activities. However, this study also demonstrated where there was lack of both professional and social support, self-doubts, negative thoughts and frustration grew, and had a direct impact on any physical activity engagement. Whereas, having clear and trusted support in place would challenge negative thinking, provide guidance and help in seeking solutions and overcome perceived barriers (Keyworth et al, 2020; O'Shea & Smedema, 2014). This includes signposting to further medical support once home, helping to tackle and alleviate frustrations, fears and instead aid recovery, and ideally a home program should be provided, giving guidance and support where required (Jannings & Pryor, 2012).

Both coaching and mentoring were proven to be effective forms of talking support (Rubtcova & Varlamova, 2019) to the WSC in general, where a trusted sounding board and encouragement were offered, as well as the safe environment to explore thoughts, perceptions, and desire for life moving forward, as opposed to what has been (Wefald, 2021; Market et al, 2020). Learning tools and techniques, having actions help with forward momentum, with benefits of such support also seeing improvements to mental health. However, coaching and mentoring are not medical platforms, and care must be taken not to cross over into a role of counsellor or psychologist, but have clear boundaries of help offered, and to signpost where required. Duration of and commitment to such talking support program were found to be important in achieving behavioural change and being able to maintain or improve upon levels going forward (Prochaska, Norcross & Saul, 2020; Ferron & Massa, 2013; Prochaska & DiClemente, 1986), with physical activity engagement being influenced by support networks, motivation, as well as perception of capability and opportunity (West & Michie, 2020).

All research questions have been addressed fully, with specifics contribution to knowledge detailed below.

The following provides further summary and a final conclusion.

5.2 Contribution to knowledge

The philosophical underpinning of this research has enabled the voice of the WSC to be captured, to gain depth of understanding of relevant lived experiences, and to which this study bridges the gap in knowledge with regards to behavioural change in relation to being physically active. Although there is existing literature regarding patients with spinal cord injury (SCI) where permanent neurological damage has resulted in a level of paralysis (Sinovas-Alonso et al, 2021; Scivoletto et al, 2014; Wu & Williams, 2001), there is limited work on those who have sustained a spinal injury but still have walking ability (Lawrason et al, 2022; Jannings & Pryor, 2014). This study addresses this gap, contributing to knowledge, and also presenting conceptual model and framework to give greater understanding of behavioural change in relation to activity.

Current literature has shown to examine either coaching or mentoring talking supports, both of which have grown in popularity over the last 10 years (Hayden, 2021; Al Hilali et al, 2020), yet, coaching and mentoring are not readily brought together in papers to understand any variations and benefits, but kept separate (Cadematori et al, 2021; Gassaway et al, 2018; Skeels et al, 2017). Furthermore, there is limited relevant research that has used a group with neither experience to gain an understanding of and compare their perceived impact to recovery and support. However, as detailed in this research, coaching and mentoring are different, and this study has provided an opportunity to examine the effectiveness of both, with specific focus to changes regarding physical activity, motivations, and behaviours (Sweet et al, 2021).

As a result of the depth of understanding as gained through this research, three key areas have emerged as contribution to knowledge: the WSC's behavioural change and motivations to being physically activity; the impact support has on helping the WSC's recovery; and the development of Behavioural COMS model and Positive Behavioural Change conceptual framework, all of which are discussed below.

5.2.1 WSC’s behaviours and motivations to being physically active

The research has examined the depth of impact that a walking spinal condition has on an individual, both physically and psychologically, and to which behaviours and motivations vary and evolve depending on where an individual is with their recovery; not necessarily as a timeline since injury, but instead their wellbeing, coping mechanisms, and access to further support. Managing the impact from having a walking spinal condition is important as an individual faces physical, psychological, and social changes despite there being no paralysis (Keonen et al, 2017; O’Shea & Smedema, 2014; Migliorine, Tonge & Taleporos, 2008; Martz & Cook, 2001), and these changes can be devastating, but individuals can be helped via support channels.

Living with chronic pain can be debilitating, and pain does not just impact an individual physically but also psychologically (Petersen, Meade & Mahmoudi, 2022; Collier, 2018), with far-reaching impact to the individual, but also those around (Mills, Nicolson & Smith, 2019). Furthermore, perception of pain is subjective, a very personal experience, and as such, can prove challenging to treat successfully (LaChapelle & Lavoie, 2014). This research was not focused on pain, yet all participants highlighted pain as an impact from sustaining a spinal injury, and has negatively impacted enjoyment of activities, particularly as higher pain levels as triggered from activity can last some days thereafter. Interviews showed participants chose to avoid engaging in activities, whether this be solo or social, as a result, particularly where lack of support and understanding was prevalent, with the majority sharing an emotional and physical distancing to friends and family as a result. Yet, there was a willingness to try new activities, or to make adjustments to the preferred activity to find a balance of enjoyment, wellbeing and also manage pain, particularly if the individual could see gains from doing so, and where a deeper motivational reason was linked to the activity. When this was achieved, pain or other hurdles no longer were the main focus, but the activity itself and the positive aspects of engaging in this, resulting in further confidence, self-efficacy and behavioural change.

Perception of injury and capability are potential limiting factors (Williams et al, 2014), yet with the right support, education, guidance, and encouragement, these can be overcome, though an individual has to want the change (Ben-Ami et la, 2017), as opposed to being pushed towards it. This connection with change assists in the movement along the state of readiness (Abrash & Walton, 2018), towards action and ultimately maintenance. When applied to physical activity, the support enables the confidence to try activities, to grasp opportunities, talk through fears, share experiences, and find activities that bring enjoyment, as well as health and wellbeing benefits. However, it is important to understand any barriers to participation feel real and challenging for an individual, and as such, the level of support given can improve or worsen this outlook, and resultant behaviour. Having a support network that assists in understanding the longer-term consequences of the spinal condition, to be able to see a full life can still be lived, and the potential to still enjoy physical activities can assist with mental health, and as such, general outlook and wellbeing. It can be daunting returning to activities that were once enjoyed, as the risk of further injury may be a fear and give new barriers to participate, including body image (Bailey, Gammage & Van Ingen, 2017; Basler et al, 2015), all of which can trigger other emotions and negative behavioural traits. However, actively trying is important to gain a realistic experience compared to perception, and an individual may experience they can do more than first thought (Michalovic, Rocchi & Sweet, 2019).

Support has been proven to have a direct contributing influence on physical activity, and associated attitudes and behaviours (Ciammaichelle et al, 2022; Chemtob et al, 2018). Participants of this study were acutely aware of the health benefits of physical activity, but the nature of injuries meant previously enjoyed activities proved more challenging, including being pain triggers, with the WSC having to adapt, or perhaps cease some activities (usually impact sport, such as running, martial arts) and if motivated, will find new ones to enjoy, such as swimming, cycling, walking, and gardening. Where there were obstacles to support, understanding, adjustments or desire, there was resistance to consider, engage and participate. Self-doubts and negative perception of body image were also considered obstacles to participating in activity (Market et al, 2019; Bailey et al, 2015), though an acceptance was not insurmountable. However, the research has demonstrated that where support is in place, there is a willingness to try. Furthermore, when behaviours and motivations surrounding engagement in physical activities were examined, to gain insights into what helps or hinders, it became apparent when an individual becomes more aware and connected to their deeper ‘why’ reason to doing an activity (West & Michie, 2020), there is determination to success. This research has been able to demonstrate this through the coaching and mentoring talking support, but particularly through the final coaching session to which all participants engaged with and demonstrated change as a result. The key distinction to the strongest motivating factor was where reasons are emotionally linked, for instance, due to family reasons including playing with children, to feel enjoyment with life once more, to assist in pain management, gain health benefits and live a long life with loved ones.

This research has demonstrated that through strong emotive links, motivation becomes clear and stronger, as does the desire and goals and thus, change and maintained behaviour was most evident in relation to physical activity. This is particularly important when faced with challenging situations in life, whereby the deep-rooted motivation will assist during such times, reducing likelihood of stopping what is ultimately a healthy behaviour towards being physically active, and to which offers positive experience. Where reasons of motivation are perhaps not emotionally linked or perceived as very important, there is a chance of reverting back down stages of readiness, and reduce activity levels. Opportunity to participate whether solely or as part of a group proved to be important, as is self-belief in capability, removing perceived boundaries and being willing to try before making a final decision on further engagement. By engaging in physical activity, the WSC build confidence, form new social relationships, improve wellbeing, as well as have a more positive outlook on their spinal condition and life ahead. This study has also revealed an individual will in turn also seek further opportunities to participate, as well as try further activities, as they are benefitting from the experiences and remain motivated to continue to do so. Maintaining positive, desired change and behaviour also assists in new habits becoming embedded, and increasing likelihood of long-term maintenance and enjoyment of such physical activities. Understanding the need for trusted support and the impact this has on motivation, perception of capability (Michalovic, Rocchi & Sweet, 2019; Hoare et al, 2018) and action with regards to physical activity enhances current knowledge, and provides stronger case to promote and assist in such support being put in place, both professionally and socially. This study has demonstrated that without such support being in place, engagement in being physically active is negatively impacted, and has a knock-on impact to wellbeing, perception of life and social inclusion.

5.2.2 The impact support has on WSC's recovery

The findings of this research give importance to the impact social and professional support has on the WSC, and for those who are part of these networks, to better understand the impact of injury so they are able to provide the help and guidance that is required by the individual during what can feel a traumatic time of change (Koenen et al, 2017), and may also be life-changing (Hastings & Horn, 2009). Where level of care or support falls below perception of what is needed or expected, an individual can be both physically and psychologically impacted (Hoare et al, 2018), as this is demonstrated through the research.

Each participant shared different personal experiences, with participants highlighting professional support to be inconsistent, particularly in relation to physiotherapy, occupational therapy, and psychiatry, with accessibility after discharge from hospital proving challenging, with long waiting times where professional support could be accessed, including links to relevant spinal charities. This inconsistency has been shown to prove frustrating, as well as being a trigger for feelings of isolation surrounding injury and not knowing where to turn for further intervention. Where this was not possible, private professional services were considered as self-found options, but these were not always feasible due to financial implications. However, the perception of professional support was overall positive with regards to the medical care received at the time of injury and hospitalisation, regardless if normal hospital or spinal injuries unit (SIU) was where they recovered following the incident. The research suggests those who have sustained a walking spinal condition are left to proactively seek further professional support once home, as opposed to having a home program in place (Jannings & Pryor, 2012) with the onus of recovery being with themselves rather than with desired guidance, even to the point of having to arrange basic needs (Maslow, 1990), including aids to help movement and functionality. Access to professional support is needed to continue rehabilitation following SI trauma (Simpson et al, 2020; Gupta et al, 2019), and although returning home is a happy yet daunting experience, there is a level of unknown, fears and vulnerability (Petersen, Meade & Mahmoudi, 2022), and in some cases, also a level of reliance to loved ones for help. Participants unanimously call for clear, accessible and consistent guidance to be made available, to assist WSC patients in adapting to home life.

Coaching and mentoring have grown in popularity as professional support services, and this includes delivering assistance to those who have sustained a spinal injury. Although different, they do share the commonality of looking at the present and ahead, not dwelling on the past (Chapter 2.3). Overall, participants benefitted from engaging in the talking support programs, both of which were overall were praised for their support offering, with Neutrals also benefitting from their complimentary coaching session, and being able to experience the support that was available. Results between the groups show coachees benefitted the greatest, with maintenance levels at the three-month stage remaining high compared to mentees. That said, all participants gave coaching and mentoring programs praise and appreciation for the help given at the time, with the belief this support was an important part of their recovery as it offered the opportunity for honest, open discussions in a safe, non-judgement environment, to explore thoughts, wants and how to best manage their life following the spinal injury. Key benefits of coaching and mentoring were said to include: being listened to; being given depth of support (Freytag et al, 2022); learning tools and techniques to help present and future situations; to feel more motivated and take actions (Houlihan et al, 2016); and an overall improvement to mental health (Migliorini, Tonge & Taleporos, 2008). The talking support platforms also gave a safe environment to explore thoughts, behaviours, to gain understanding and learn to how articulate thoughts to others (Sweet et al, 2021). Even where mentees undertook limited sessions, benefits were experienced, and although could potentially have gained more if further sessions were undertaken, there was an appreciation and change as a result of the support offered.

The limitations to coaching and mentoring included not having the commitment to the full program duration (this applied only to mentees), and although is a professional support service, the sessions may not be led by someone who has any formal qualifications, but instead undertaken short training, as neither coaches or mentees operate in a regulated industry. This does not mean what such coaches or mentors offer is of little valuable, but it does open up the situation whereby a WSC individual may not be given the same experience, depth of knowledge and support as another who has a coach / mentor who has undertaken accredited qualifications, and continues to develop skills and knowledge to enhance their professional service.

With regards to not having any form of talking support, this was considered a potential hindrance to recovery, where Neutrals readily shared their experiences of not being listened to, the challenges of moving on with life and unclear how to do so, and their sense of grief from the old to new life, including losing enjoyment from specific physical activities and engaging with others. As they had not received coaching or mentoring before, they did not know of this support platform, and how it could help them, though the majority were offered or engaged in counselling or psychiatry (Disability Plus, 2022; SIGN, 2019). Experiencing the complimentary coaching session as part of the research process proved helpful to all Neutrals, who unanimously stated this proved helpful and wished they had the opportunity to have had this in the past.

With regards to social support, participants stated family and friends predominantly formed this network (Chemtob et al, 2018; Tasiemesk et al, 2015), though relationships with loved ones, and other social groups can be complex and individualised, and could cause further frustrations and poor mental health, particularly where there was a level of dependency. Where there is trusted, solid social support, participants were willing to try more, to ask for help, and were appreciative of being listened to and encouraged. Where such support was not at a perceived acceptable level to meet needs, frustration, isolation, and negative feelings (Moller et al, 2021; Williams et al, 2019) were more readily experienced, impacting motivational levels, outlook, mental health and behaviour, with physical activity also being impacted. In the circumstances where social support was in part deemed good, for instance a certain friend could be turned to but perhaps not others to the same extent, this helped when frustrations were experienced, and the trusted social support person could still be relied on (Wu & Williams, 2001) and be part of the help in recovery and activities (Gassaway et al, 2016). The research also revealed that at times, there was a desire to be able to separate family and friends from the injury / spinal condition discussion itself, reducing the associated labelling of any disability (Kattari et al, 2018; Dattilo & Smith, 1990) and to be seen as the person they were and are. That said, due to any requirement for support, this separation can prove challenging, and at times, a WSC individual can hold back on sharing fully as to avoid any misunderstandings, the risk of offending or being judged (Ciammaichella et al, 2022), or showing psychological and / or physical challenges. However, the positive impact of having family and friends as part of the social support network is seen as overall important to recovery.

Social media platforms and social groups also offer access to support, where in relation to the former, information could be easily accessed at any time of day, connection with others in similar situation was possible, and being able to reach out to someone. However, research participants also revealed the negative side of this form of support, which included unfiltered conversations, potentially damaging discussions, and resultant impact to thoughts and emotions.

This research demonstrates social and professional support networks are essential in supporting someone with a walking spinal condition, from initial hospitalisation to adjusting to home and what will be life as it is now, though the support should always be carefully assessed by the individual, with efforts to safeguard recovery and wellbeing. However, it is not always clear who or where to turn to during such a time of traumatic change, including family and friends, as each person’s circumstances are different, and no assumption should be made by medical teams as to who will provide support beyond hospital duration. There is a need for a home adjustment program, whereby both psychological and physical change management are addressed (Jannings & Pryor, 2012), specifically, with every patient regardless of medical care route being given an individualised plan is considered important to recovery.

Having a solid social and professional support in place can change the course of recovery, from one that has negative thoughts and feelings isolation, fears, lack of movement and bleak outlook to one that brings encouragement, assistance, removes obstacles, social inclusion, a growth in confidence, become more physically active and benefits to health and wellbeing.

5.2.3 Conceptual model and framework

As a result of the depth of understanding gained through this research regarding motivations and behaviours, and that support is integral construct to this, this research has resulted in the development of two models. Firstly, having established the importance of support in the overarching behaviours of the WSC, the COM-B model (West & Michie, 2020; Figure 16) has been further developed as a result of this research, and now presented as the conceptual Behavioural COMS model (Figure 38), with four constructs (Capability, Opportunity, Motivation, and Support), with social and professional support detailed as the antecedents of Support.

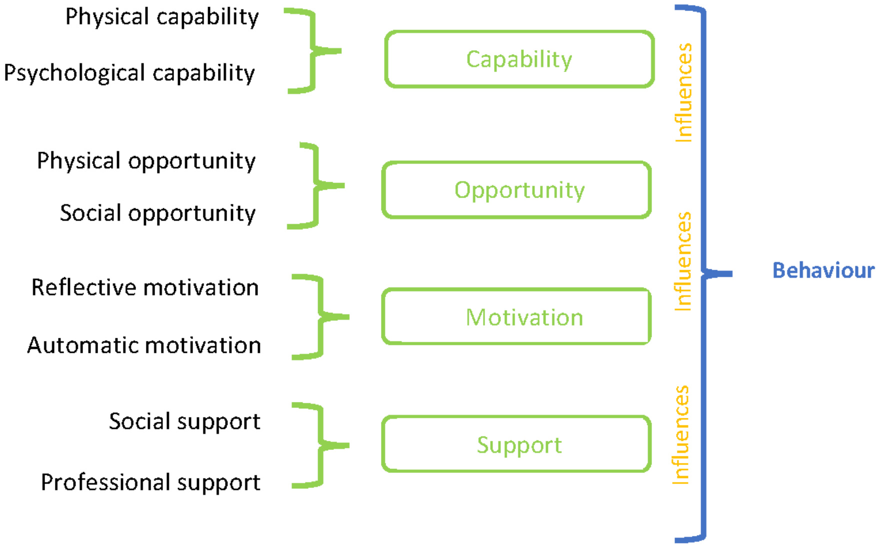


Figure 38: Behavioural COMS model with corresponding antecedents (Fowler, 2023)

As with the other three constructs, Support also has influencers and the combination of all four constructs impact resultant behaviour. This inter-relationship is apparent through the research, where participants shared what perception of what influences their behaviour in general, not just about physical activity, and that whatever the discussion area, support was integral, thus has equal weighting to the other three. Though it was through the discussions surrounding behaviour and motivations in relation to physical activity that the data was able to be gathered and the model evaluated. However, the research gave weight to further developing this now conceptualised Behavioural COMS model as the above does not address the stages of behavioural intent to which the research reveals as important, and how they relate to the constructs of behaviour. As such, the following Positive Behavioural Change conceptual framework provides an approach that will assist both academia researchers and practical application:

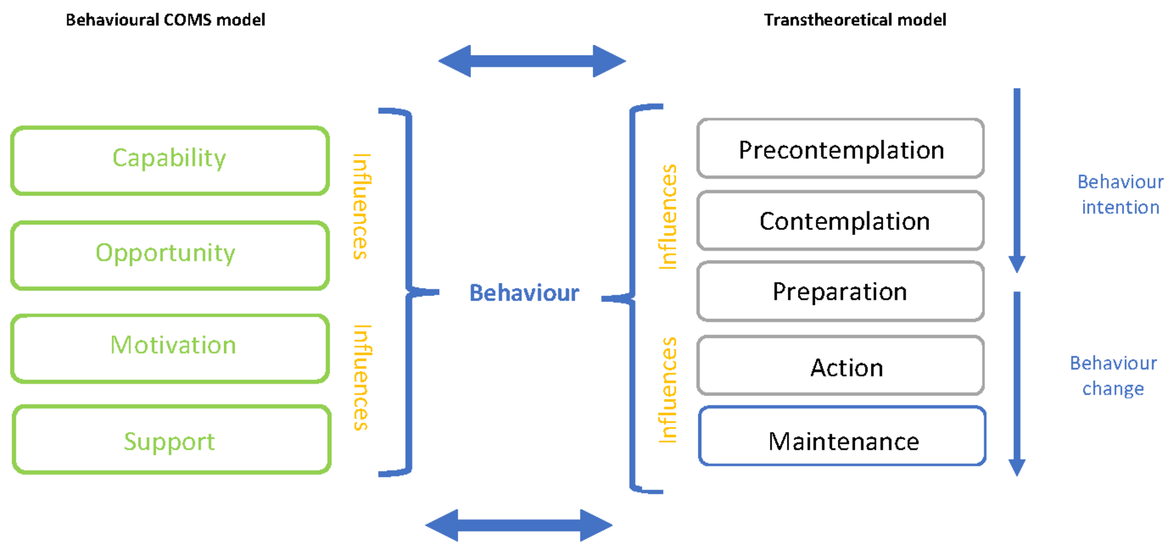


Figure 39: Positive Behavioural Change conceptual framework (Fowler, 2023)

This approach not only demonstrates the inter-relationship of the behavioural intention and action (TMM) and constructs of behaviour (Behavioural COMS), but clearly shows this is a two-way filter, whereby regardless of what stage of TMM, the Behavioural COMS constructs' influencers impact behaviour to which will directly impact the TMM stages, whether there is progress, stagnation or reverting back a stage, though progression being more likely with effort being given to attitude and perception of capability, opportunity, motivation, and support. The aim is to reach Maintenance, and continue at that level of commitment, to which benefits are experienced though influencers must still be monitored and managed so again no reverting back stages. Furthermore, as continuation of maintenance is managed, behaviours become habit, enabling a more embedded behavioural pattern, and less likelihood of negative behaviour returning.

To accompany the above framework, the following descriptions of TMM (Table 34) and Behavioural COMS (Table 35) apply:

Precontemplation	Not ready / unaware	Not intending to take any change action, and can be unaware of the impact their current behaviour. Content with the status quo, unaware change is needed.
Contemplation	Awareness / Consideration	Beginning to recognise that behaviour is a problem or barrier to goals or desires, and start to look at potential change that will bring wanted outcomes, as well consideration as to the action that may be required.
Preparation	Getting Ready	Planning the action to be taken in the immediate to near future, and tackling any obstacles to assist the preparation. Ready to take steps to changing behaviour.
Action	Action	Specific changes have been made to better behaviour and acquire new healthier habits. Action is regularly self-reviewed and undertaken, ensuring behaviour aligns with desired outcome.
Maintenance	Six months plus	Maintaining new behaviour, habits, and attitudes for at least 6 months, not wishing to revert, and viewing maintenance as a continuum.

Table 34: TTM stages of readiness descriptions as part of Positive Behavioural Change conceptual framework (Fowler, 2023)

Capability	Capability, both physical and psychological, is recognised as an attribute to which a person's behaviours and decisions are based upon, and to which the perception can help or hinder potential change and action.
Opportunity	Opportunity provides the sense of hope and possibilities, and is presented through people and situations, the environment to which a person works within, and to which impacts behaviour.
Motivation	Motivation is the personally embedded thought processes that gives reasons to act or behave in a particular way, with emotionally connected motivation giving deeper drive in change and behaviour.
Support	Support is an attribute of the success of managing challenging situations and achieving goals, with social and professional support networks providing trusted emotional and practical help.

Table 35: Behavioural COMS model construct descriptions (Fowler, 2023)

In relation to this research, the conceptual framework firstly offers an approach that enables a deeper academic understanding and monitoring of behavioural change, giving equal weighting to Capability, Opportunity, Motivation (West & Michie, 2020), and Support, and the stages of readiness to such change (Prochaska et al, 2008). To date, support has not been given the same prominence within this area, yet as this study shows, it has a fundamental impact on thoughts, emotions, and decisions. The Positive Behavioural Change framework enables behavioural change to be viewed in a way that acknowledges readiness to change may progress or retreat (Ferron & Massa, 2013; Prochaska, DiClemente & Norcross, 1992; Prochaska & DiClemente, 1986), with four distinct constructs having direct impact on the direction behavioural change takes. Therefore, with such clearer understanding, the influencing factors can be challenged, stages of readiness can be better aided, and behavioural change can be achieved, with the view of maintaining.

Secondly, the framework can also be applied practically, assisting in change management following a spinal injury, particularly in promoting physical activity, and to which can positively impact lives. Furthermore, this conceptual framework can be applied to any individual or group of people where change is either sudden or being implemented, so behaviour can be better supported and guided to a more positive conclusion, including corporate situations. It is proposed, should coaches and mentors adopt this framework, the lives of the WSC would be enhanced, with greater understanding of challenges and influencers resulting in clear guidance to better promote and support healthy and maintainable behavioural change.

Future studies implementing the Positive Behavioural Change conceptual framework are discussed in Chapter 5.5.

5.3 Limitations of research

This research has been discussed fully and transparently, with justification for the chosen methodology being detailed and to which *n=15* participants engaged in the qualitative research interviews, with *n=11* having completed mentoring / coaching programs prior, and *n=4* being the group of Neutrals. Qualitative research by nature can be compromised by unconscious bias, though all effort was made to address any bias, and ensure rigour, reliability, and objectivity to this research. Although any potential bias has been addressed, even with the best efforts, limitations exist and are important to address:

Walking spinal community understanding – the WSC population does not receive the same focus in literature papers, and where there is, there is varying terminology, including SCI who ambulate. The author has given particular care to avoid confusion in terminology, and offers clear distinction between spinal injuries, spinal cord injuries and walking spinal community, even if other papers using varying terminology. Although there is limited understanding and focus of the WSC in literature papers, there is also much opportunity to explore further, whilst also addressing confusion in terminology and whether this impacts understanding of the WSC itself (see Chapter 5.5).

WSC – traumatic injury – this research focused on those who have sustained a walking spinal injury / condition as a result of an accident / incident, thus a traumatic experience, as opposed to a natural change to the body. The reason was to examine the impact of the sudden change, as opposed to one that can potentially be prepared for, both physically and psychologically, and the resultant behaviour, challenges, and the varying levels of impact and influences. This meant not examining the WSC who did not fit the specific criteria, and thus may have different experiences to be shared that have not yet been captured. However, the reasoning for focal of the research was purposeful, providing an in-depth study on these WSC population.

Third party's influence on methodology – as detailed in Chapter 3, spinal charity Back-Up assisted in accessing those who undertake a mentoring program, as the organisation already offers and delivers this service to WSC individuals throughout the UK. As a result of collaboration, a level of compromise had to be made for agreement to be made, and this included BackUp having input into interview questions, the accessibility to the mentees, timings for data. Furthermore, there were other factors outwith the author's direct control, including how the mentoring team ask the questions (potentially leading answers), discussions had and capturing all information shared, logging pre and end program results. Ideally, there would have been no such input nor variables, but the reality of being able to undertake this research which involved accessing mentees meant a level of influence and variable had to be accepted, though recorded. The author was able to check ratings with Mentees when direct contact was permitted, and ensure no direction of answers but allow the mentee to lead and provide their information.

Mentoring program duration – the mentoring program itself is led by volunteers of BackUp, each having gone through a minimal of weekend training, but where further development is not a requirement but encouraged. The mentoring program is offered for up to 10 sessions, with a minimal of four encouraged, though at any time a mentee can leave the mentoring program. This is in contract to the coaching program's approach, whereby this is led by a qualified coach (author), and coachees committed to participating in the full 10 sessions. The fewer number of mentoring sessions is noted, and may be a contributing factor to the less likelihood to maintain any positive changes and behaviour as experienced through the program.

WSC's population – as discussed during Chapter 2 and 3, there is no clear literature either in academia or industry to provide a true understanding of the size of the WSC, whether in Scotland, UK or globally. Through the evaluating of literature, spinal injury unit reports, and relevant spinal charity documentation, a proposed formulaic approach was detailed, enabling a figure to be generated for expected new spinal injuries cases per year, and another for the WSC. Due to the complexity of compiling and checking, the author reached out to various spinal consultants and other medical experts. To date, two sources have replied and given their input, with one agreeable to the proposed calculation (80-120 annual spinal injuries cases per million, to which up to 33% are expected to regain walking ability), and the author awaits further feedback from other medical experts. The gap in defined data provides an opportunity for further research.

5.4 Reflection of research journey

The subject area of this study was a highly emotive one, whereby participants were asked about their own lived experiences having sustained a walking spinal condition as a result of an accident / trauma. Although at least 12 months would have passed before engaging with each participant, physical and psychological changes were discussed as part of the interview questions, with heightened emotions being shared, and so the author had to navigate challenging territory. It was imperative the author safeguarded the health of all, including themselves, and carefully navigate the changing feelings and emotions throughout interviews. This meant that at times, the author taking a step back, reflecting and ensuring boundaries were maintained, including ethically and morally. One such example being the careful handling of the situation with M5 (Chapter 3.2.2), which resulted in a weekend of highly emotive, challenging discussion, reaching out for advice from medical person, and ensuring M5 was signposted to a number of support options.

Throughout the duration of this study, the author had to find ways forward to address the aims and objectives, manage the methodology, which included working with a third party to access mentees, as well as approach the literature review from academic and industry point of views to ensure depth of knowledge, ascertain gaps, and be clear on purpose, avoid bias, and let data drive the analysis discussions and conclusion.

5.5 Future research recommendations

This study offers considerations for future research, to which the following are highlighted as pertinent, based on the research as presented:

WSC population assessment – a potential study is one that permits an in-depth evaluation of how the WSC population is currently captured through medical and other professional channels, and where potential improvements can be made so that WSC and SCI can accounted for currently and transparently. This may prove helpful to the NHS and relevant government bodies for assigning finances and people resources to provide greater access to professional support after hospitalisation, thus aiding the safeguarding of health and wellbeing, to which positively impacts societal consequences.

Professionalism of coaching and mentoring programs – this research details coaching and mentoring have been shown to have grown in accessibility and popularity over the last 10 years, yet there is disparity as to the services given, as this is an unregulated industry. There is potential for research to look at the varying levels, the impact to health and wellbeing, and the governance of such professional services. This would help to address any concerns in the level of support being given, with a study examining levels of training and qualifications and output to clients.

WSC and physical activity inclusion – ability of WSC is individual, with some showing no outwardly signs of having sustained a traumatic injury, whereas there may be some physical evidence to others. However, the impact of sustaining such an injury goes beyond the physical to see, as there may also be hidden physical impact, as well as the psychological. As such, barriers to engaging in physical activity can be daunting, and also challenging to discuss, yet adaptations could potentially be made to allow a WSC individual the opportunity to enjoy activities once more. It is suggested that further research examines this, whereby to understand who barriers to engagement can be removed, enabling the WSC to feel there is a way to participate, should they wish and be safe to do so.

Positive Behavioural Change conceptual framework testing – if adopted by coaches and mentors, this conceptual framework has the potential to enhance the lives of the WSC by addressing and promoting understanding and action of what are considered the key constructs to behavioural change. It is suggested future studies test the theoretical understanding, and apply to the practice of coaching and mentoring for those who have sustained a walking spinal condition. The purpose would be to test the framework in relation to the effectiveness and self-efficacy of behavioural change in relation to being physically active. This could then be further developed in relation to developing a relevant intervention program, where the framework is applied and tested over a period of time, with effectiveness of positive change and self-efficacy again measured.

Due to the universal understanding of behavioural change, it is proposed that this framework is not limited to WSC or even spinal injuries, however it should be fully tested within the realms it has been developed before considering other areas.

5.6 Final conclusion

This research has examined the impact coaching and mentoring have as talking support on the walking spinal community's behavioural change and motivations with regards to being physically active. Literature on the WSC itself is limited, with a greater focus given to the spinal cord injury (SCI) individuals, and even more scarce when also reviewing the WSC with coaching and mentoring support platforms, who also tend to view such talking support separately. As a result, this research contributes to knowledge, aided by the qualitative, inductive methodological approach, and providing two phases of research to ensure rigour, depth, and reliability of data. Key over-arching themes from the data were generated through reflexive thematic analysis, to which were analysed and discussed: coaching and mentoring talking support, impact from walking spinal condition, engagement in physical activities, and signposting and support network, all of which were demonstrated to be interlinked in the understanding of the WSC's behaviours and motivations surrounding physical activity.

This study demonstrates there are four key constructs to behavioural change, which in turn impacts engagement of physical activity, and builds upon COM-B model (West & Michie, 2020): Capability, Opportunity, Motivation, and Support, and to which each have corresponding influential factors to address, and are personal to the individual. This study's findings suggest Support (social and professional) has equal importance to the first three constructs has established in COM-B model (West & Michie, 2020), creating a conceptual model of Behavioural COMS, and to which is then applied to a new conceptual framework, encompassing the new model and TMM (Ferron & Massa, 2013; Prochaska, DiClemente & Norcross, 1992) models. This framework enables deeper understanding of what impacts behaviour overall, and how they then also impact the stage of readiness in change behaviour. Furthermore, only on reaching a stage of Maintenance, and continuing the efforts to ensure behaviour remains if not even approves can this new, healthy behaviour become habit, which again should be reviewed and worked on for maintenance.

This research has demonstrated coaching and mentoring offer a purposeful and measurable form of talking support to the walking spinal community, giving a safe environment to explore thoughts, behaviours and perceptions, to gain the empathy and support needed in that time of their life, as well as look ahead, set goals and to enjoy life in whatever form that takes, therefore have a more positive outlook (Markey, Dunaev & August, 2020). Overall, those who underwent the programs shared the benefits of experiencing greater depth of support, being listened to, improved mental health, learnt tools and techniques to help move forward, and were motivated thus, took actions.

By addressing the unique needs and challenges faced by the walking spinal community, this research gives weight to coaching and mentoring providing an effective platform to empower individuals to take an active role in their own health and wellness (Prochaska, Norcross & Saul, 2020), specifically being physically active, to overcome perceived barriers and to take action that brings positive change and results to their life, regardless of the injuries sustained. Coaching and mentoring are already recognised support systems for those who have suffered a spinal injury, and aid recovery in terms of mental health and behavioural aspect (Sweet et al, 2021; Divanoglou & Georgiou, 2017; Beauchamp et al, 2016), yet awareness of both are limited, despite literature supporting the effectiveness of helping those with spinal injuries. This study paves the way in offering insights to bridge the gap in support as offered to the WSC, to introduce programs that empower the WSC to learn and gain insights as to how to better manage their conditions and live a full life, to get more active, and to ultimately provide a support mechanism to help transform behaviour, outlook, and wellbeing.

Chapter 6.0

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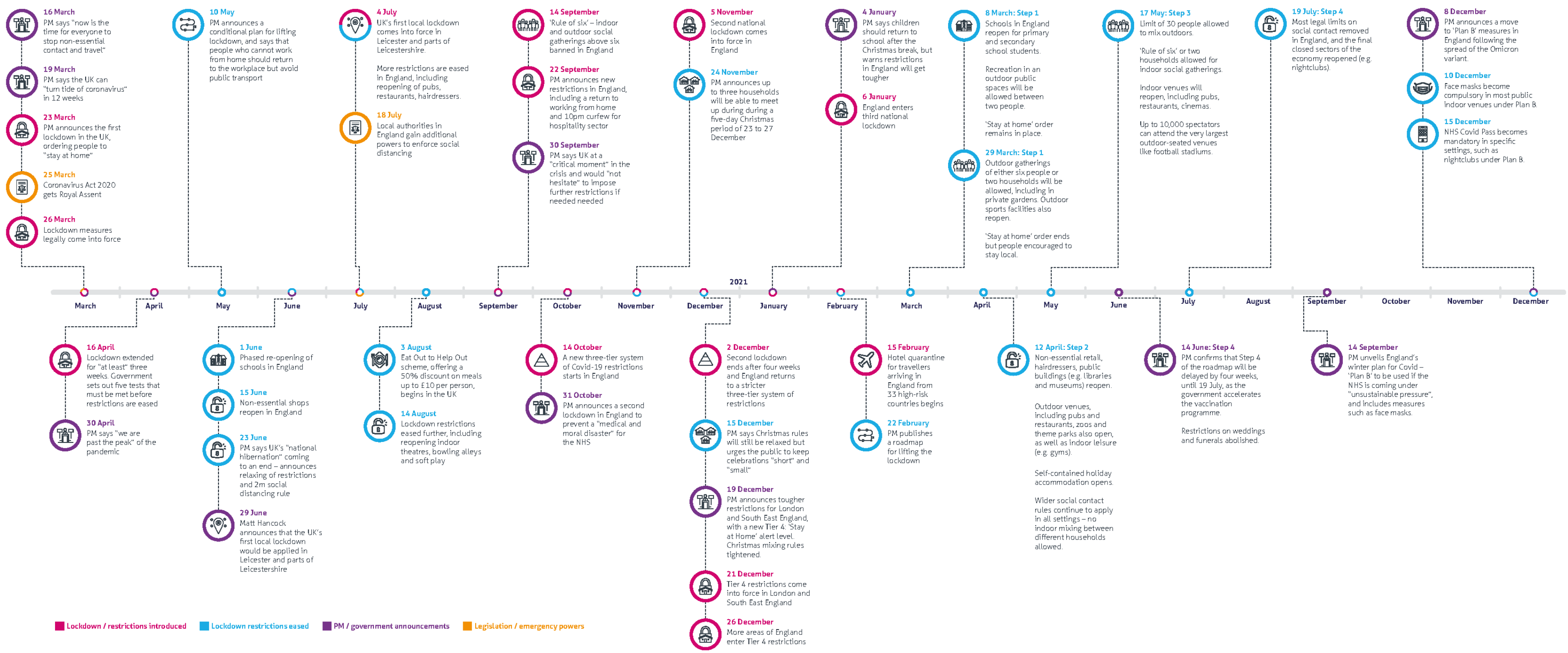
Chapter 7.0

Appendices

Appendix 1

Timeline of UK Government restrictions, from March 2020 to December 2021

Timeline of UK government coronavirus lockdowns and measures, March 2020 to December 2021



16 March
PM says "now is the time for everyone to stop non-essential contact and travel"

19 March
PM says the UK can "turn tide of coronavirus" in 12 weeks

23 March
PM announces the first lockdown in the UK, ordering people to "stay at home"

25 March
Coronavirus Act 2020 gets Royal Assent

26 March
Lockdown measures legally come into force

16 April
Lockdown extended for "at least" three weeks. Government sets out five tests that must be met before restrictions are eased

30 April
PM says "we are past the peak" of the pandemic

10 May
PM announces a conditional plan for lifting lockdown, and says that people who cannot work from home should return to the workplace but avoid public transport

1 June
Phased re-opening of schools in England

15 June
Non-essential shops reopen in England

23 June
PM says UK's "national hibernation" coming to an end – announces relaxing of restrictions and 2m social distancing rule

29 June
Matt Hancock announces that the UK's first local lockdown would be applied in Leicester and parts of Leicestershire

4 July
UK's first local lockdown comes into force in Leicester and parts of Leicestershire.

More restrictions are eased in England, including reopening of pubs, restaurants, hairdressers.

18 July
Local authorities in England gain additional powers to enforce social distancing

3 August
Eat Out to Help Out scheme, offering a 50% discount on meals up to £10 per person, begins in the UK

14 August
Lockdown restrictions eased further, including reopening indoor theatres, bowling alleys and soft play

14 September
'Rule of six' – indoor and outdoor social gatherings above six banned in England

22 September
PM announces new restrictions in England, including a return to working from home and 10pm curfew for hospitality sector

30 September
PM says UK at a "critical moment" in the crisis and would "not hesitate" to impose further restrictions if needed needed

14 October
A new three-tier system of Covid-19 restrictions starts in England

31 October
PM announces a second lockdown in England to prevent a "medical and moral disaster" for the NHS

5 November
Second national lockdown comes into force in England

24 November
PM announces up to three households will be able to meet up during during a five-day Christmas period of 23 to 27 December

2 December
Second lockdown ends after four weeks and England returns to a stricter three-tier system of restrictions

15 December
PM says Christmas rules will still be relaxed but urges the public to keep celebrations "short" and "small"

19 December
PM announces tougher restrictions for London and South East England, with a new Tier 4: 'Stay at Home' alert level. Christmas mixing rules tightened.

21 December
Tier 4 restrictions come into force in London and South East England

26 December
More areas of England enter Tier 4 restrictions

4 January
PM says children should return to school after the Christmas break, but warns restrictions in England will get tougher

6 January
England enters third national lockdown

15 February
Hotel quarantine for travellers arriving in England from 33 high-risk countries begins

22 February
PM publishes a roadmap for lifting the lockdown

8 March: Step 1
Schools in England reopen for primary and secondary school students.

Recreation in an outdoor public spaces will be allowed between two people.

'Stay at home' order remains in place.

29 March: Step 1
Outdoor gatherings of either six people or two households will be allowed, including in private gardens. Outdoor sports facilities also reopen.

'Stay at home' order ends but people encouraged to stay local.

12 April: Step 2
Non-essential retail, hairdressers, public buildings (e.g. libraries and museums) reopen.

Outdoor venues, including pubs and restaurants, zoos and theme parks also open, as well as indoor leisure (e.g. gyms).

Self-contained holiday accommodation opens.

Wider social contact rules continue to apply in all settings – no indoor mixing between different households allowed.

17 May: Step 3
Limit of 30 people allowed to mix outdoors.

'Rule of six' or two households allowed for indoor social gatherings.

Indoor venues will reopen, including pubs, restaurants, cinemas.

Up to 10,000 spectators can attend the very largest outdoor-seated venues like football stadiums.

14 June: Step 4
PM confirms that Step 4 of the roadmap will be delayed by four weeks, until 19 July, as the government accelerates the vaccination programme.

Restrictions on weddings and funerals abolished.

19 July: Step 4
Most legal limits on social contact removed in England, and the final closed sectors of the economy reopened (e.g. nightclubs).

14 September
PM unveils England's winter plan for Covid – 'Plan B' to be used if the NHS is coming under "unsustainable pressure", and includes measures such as face masks.

8 December
PM announces a move to 'Plan B' measures in England following the spread of the Omicron variant.

10 December
Face masks become compulsory in most public indoor venues under Plan B.

15 December
NHS Covid Pass becomes mandatory in specific settings, such as nightclubs under Plan B.

🟥 Lockdown / restrictions introduced
🟦 Lockdown restrictions eased
🟪 PM / government announcements
🟧 Legislation / emergency powers

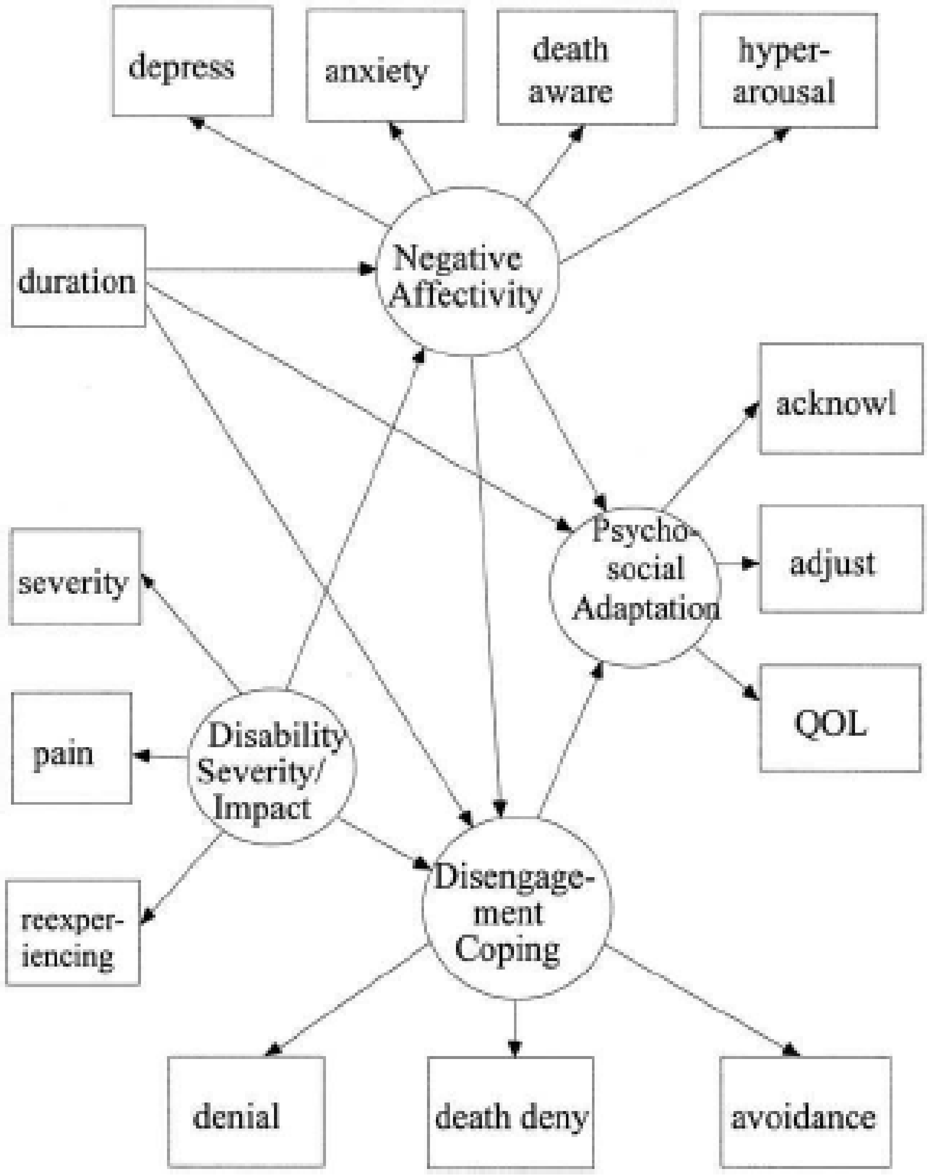
Source: Institute for Government analysis.

Appendix 2

Hypthothesized model of adaptation of SCI.

The circles represent latent variables and the squares represent observed variables

(Martz et al, 2014, p1183)



Appendix 3

Summary of research, as shared with those who reached out to inquire about participation

Research Title*:
"A critical analysis of the impact Coaching & Mentoring has on the consumer psychology of adults with walking spinal conditions in relation to physical activity"
**please note, title can and will change over the duration of the research phase*

I am currently undertaking research through Robert Gordon University which focuses on those with walking spinal conditions, and this will be carried out by video conference (or audio call, should that be requested).

This study aims to examine and better understand the barriers to those with walking spinal conditions face in relation to participation in physical activity. In particular, how the engagement of Coaching and / or Mentoring talking support helps in the return to participating in physical activities, regardless if previously undertaken or new interest.

This will give insight to ascertain what national measures can be made to make such talking support more accessible. The information collected may help researchers and other healthcare stakeholders learn more about the walking spinal community, general wellbeing, active levels and the risks of these barriers not being addressed.

The walking spinal community is one that is not readily examined, but instead the spinal injuries statistics are gathered for those with complete spinal cord injury, who have suffered permanent neurological damage (where walking ability is no more, and a wheelchair is used). However, those who have suffered a spinal injury, yet have the ability to walk have their own physical, mental and emotional obstacles, and life can be greatly affected by the injury.

As such, I am undertaking this research to give a voice to the walking spinal community, with the hope and determination that a positive change can be made.

Requirements will involve:

Coachee / mentee – participating in a coaching or mentoring program (to be discussed)

Neutrals – have not participated in any such talking program, and will give perspective from not having this

Criteria:

- Participants must have sustained a spinal injury as a result of an incident / trauma (eg. car accident, sports incident, fall).
- Age group – must be over 18 years.
- Spinal injury occurred at least 12 months prior to interviews.
- Participants must be based in the UK.

- Participants must form one of three groupings – those who have received mentoring (Mentees), those who have received coaching (Coachees), those who have received to talking therapy support (Neutrals).
- Participants must be willing to engage in 10-session program, though are not contracted to complete all 10 sessions.
- Participants were physically active prior to the said injury.
- Participants are willing to discuss physical activity engagement and changes as a result of said spinal injury / condition.
- Participants are willing to discuss perception of life now and in the future.

Researcher: Gillian Fowler

g.fowler@rgu.ac.uk

Appendix 4a

Adult informed consent statement – coaching participation

Adult Informed Consent Statement – Coaching participation

Research Title*:
"A critical analysis of the impact Coaching & Mentoring has on the consumer psychology of adults with walking spinal conditions in relation to physical activity"

**please note, title can and will change over the duration of the research phase*

Principal Investigator: Gillian Fowler
(Study Investigator)

Contact Information: g.fowler3@rgu.ac.uk

Please read the following information about the study you will be participating in. By signing the box at the bottom of this form, you are confirming your choice to take part in this study.
You can give this verbally, and I can sign on your behalf, and email you a copy.

Introduction and Purpose

You are being asked to participate in a research study focusing on those with walking spinal conditions, and this will be carried out by video conference (or audio call, should that be requested). This study aims to examine and better understand the barriers to those with walking spinal conditions face in relation to participation in physical activity. In particular, how the engagement of Coaching and / or Mentoring talking support helps in the return to participating in physical activities, regardless if previously undertaken or new interest. This will give insight to ascertain what national measures can be made to make such talking support more accessible. The information collected may help researchers and other healthcare stakeholders learn more about the walking spinal community, general wellbeing, active levels and the risks of these barriers not being addressed.

The walking spinal community is one that is not readily examined, but instead the spinal injuries statistics are gathered for those with complete spinal cord injury, who have suffered permanent neurological damage (where walking ability is no more, and a wheelchair is used). However, those who have suffered a spinal injury, yet have the ability to walk have their own physical, mental and emotional obstacles, and life can be greatly affected by the injury.

As such, I am undertaking this research to give a voice to the walking spinal community, with the hope and determination that a positive change can be made.

Coaching part of research

You have been approached to participate in the Coaching part of this research, which offers up to 10 hours of one-to-one coaching from myself, an accredited transformational & mindset coach, as well as NLP practitioner. Prior to reading this form, we have discussed the nature of this coaching program, and I thank you for your willingness to form an important part of this study, and give wholeheartedly to this process. At the start and end of our program, we will go through questions as a measuring benchmark. You will be asked if you are happy for our call to be recorded, or I can transcribe**. These results will be stored securely, and your personal data will not be stated with your information. At no time, will your personal information or identity be revealed, these will always remain confidential.

***You will have the option to have the questions part recorded or for me to type answers, to which you can verify. This is your choice and I respect the sensitivity of your matter. The coaching program will not be recorded in any way. No notes will be taken, and as such, no details will be stored.*

There is no cost or compensation for participating in the study.

Confidentiality and privacy are valued and all information will remain as such.

All research studies at Robert Gordon University are reviewed by an independent group, the Research Ethics Committee, to protect your safety, rights, wellbeing and dignity. Advice on questions of professional ethics and professional conduct associated with the study has been obtained from the university's committee as well as my research supervisory team.

What information will be collected in this study?

This part of the study, which involves a video or audio call, will allow a relaxed atmosphere to be asked questions, answering in your own time, and ensuring you are comfortable throughout. You can ask for a break or cease the call at any time.

All the information you provide will be based on your recollection and does not require any information from doctors or other healthcare workers who treated or may treat you.

The first video call should take approx. 15minutes to complete the questions, and includes but is not limited to questions on the topics below:

- Your contact information (name, email);
- Demographics (age, gender, country within the UK);
- Nature of accident that resulted in your spinal injury, injury, perception of your recovery, as well as year of injury;
- Mobility, pain and emotional wellbeing will be briefly discussed, including how you manage any pain, how it impacts some of your day-to-day activities and mental wellbeing;
- Your physical activities, looking at prior to post injury differences, current restrictions and desire for activity levels;
- Your perception and feelings to living life with a spinal injury will be discussed.

Follow-up parts to initial research

A follow-up interview will be arranged at the end of your Coaching program, and duration is expected to be 25-30minutes.

You will also be invited to submit a personal review 3 months after your coaching has come to an close, and this is to assess ongoing impact as well as your progress.

What are the risks of taking part in the study?

The principal risk relates to the unauthorised access to or disclosure of information you provide to us. However, as stated above, at no time will your personal information be stored with your responses, and so you remain unidentifiable. The study team will employ a wide range of methods to secure information and handle it responsibly. We will use our experience, tools, safeguards and controls to protect your information.

What are the benefits of taking part in the study?
You are unlikely to benefit directly from taking part in this study. However, the information collected in this study will lead to an improved understanding of the benefit Coaching and Mentoring talking support has on the health and wellbeing of the walking spinal community members, in part by aiding getting back to physical activity.

As a result of this research, recommendations will be made to spinal charities, NHS and Government organisations.

What is the alternative to participating in this study?
This study is for research purposes only. The only alternative is to not participate in this study.

How long will information be stored?

1. **Name & email address**
   Your name and email address will be stored until the end of this research project, which includes the time to collect data from all participants and the time to process and analyse data. Your name and email address will then be deleted.
2. **Non-identified data**
   This will be stored indefinitely.

Can I remove myself from the study or update data?
Yes. Taking part in this study is voluntary. You can withdraw from participation in the study at any time. In the event that you decide you do not want to participate in this research, please contact me via email g.fowler3@rgu.ac.uk

In such an event, your record will then be marked as "consent withdrawn". All non-identifiable study data collected from yourself to this point can still be used for analysis purposes, but your name and email address will be removed from the central system, and you will therefore not be included in any future data gathering or distribution, including the individual stages of research.

****

I have read this form and voluntarily agree to be in this study.

Name:
(print / sign name)

Date:

Appendix 4b

Adult informed consent statement – mentoring participation

Adult Informed Consent Statement – BackUp mentees participation

Research Title*:
"A critical analysis of the impact Coaching & Mentoring has on the consumer psychology of adults with walking spinal conditions in relation to physical activity"

**please note, title can and will change over the duration of the research phase*

Principal Investigator: Gillian Fowler
(Study Investigator)

Contact Information: g.fowler3@rgu.ac.uk

Please read the following information about the study you will be participating in. By signing the box at the bottom of this form, you are confirming your choice to take part in this study.
You can give this verbally, and I can sign on your behalf, and email you a copy.

Introduction and Purpose

You are being asked to participate in a research study focusing on those with walking spinal conditions, and this will be carried out by video conference (or audio call, should that be requested). This study aims to examine and better understand the barriers to those with walking spinal conditions face in relation to participation in physical activity. In particular, how the engagement of Coaching and / or Mentoring talking support helps in the return to participating in physical activities, regardless if previously undertaken or new interest. This will give insight to ascertain what national measures can be made to make such talking support more accessible. The information collected may help researchers and other healthcare stakeholders learn more about the walking spinal community, general wellbeing, active levels and the risks of these barriers not being addressed.

The walking spinal community is one that is not readily examined, but instead the spinal injuries statistics are gathered for those with complete spinal cord injury, who have suffered permanent neurological damage (where walking ability is no more, and a wheelchair is used). However, those who have suffered a spinal injury, yet have the ability to walk have their own physical, mental and emotional obstacles, and life can be greatly affected by the injury.

As such, I am undertaking this research to give a voice to the walking spinal community, with the hope and determination that a positive change can be made.

Mentoring part of research

You have recently undertaken a Mentoring program, up to 10 sessions, via UK-based spinal charity BackUp.

BackUp and myself, Gillian Fowler, have an agreement in place whereby Mentees are offered the opportunity to participate in this research, to gain a deeper understanding of any impact from such Mentoring services, the goals vs. outcomes, and outlook to life ahead, including the participation in physical activities. To engage in this research, BackUp asked for your permission for your name and email address to be forwarded, and I thank you for agreeing.

I have since sent an introduction email, and now we have arranged this interview session. I thank you for your willingness to form an important part of this study, and give wholeheartedly to this process.

During our call, we will review the measurement questions and answers that were asked by the Mentoring Team at BackUp, and to which was agreed with myself. The questions are used as a measuring benchmark, and following this review I will ask you 4 further 'open' questions. You will be asked if you are happy for our call to be recorded, or I can transcribe**. A transcript from our conversation will be stored securely, and your personal data will not be stated with your information. At no time, will your personal information or identity be revealed, these will always remain confidential.

***You will have the option to have the questions part recorded or for me to type answers, to which you can verify. This is your choice and I respect the sensitivity of your matter. Should you have also taken the offer of the complimentary coaching session, this will not be recorded in any way and no details stored.*

There is no cost or compensation for participating in the study.

Confidentiality and privacy are valued and all information will remain as such.

All research studies at Robert Gordon University are reviewed by an independent group, the Research Ethics Committee, to protect your safety, rights, wellbeing and dignity. Advice on questions of professional ethics and professional conduct associated with the study has been obtained from the university's committee as well as my research supervisory team.

What information will be collected in this study?

This part of the study, which involves a video or audio call, will allow a relaxed atmosphere to be asked questions, answering in your own time, and ensuring you are comfortable throughout. You can ask for a break or cease the call at any time.

All the information you provide will be based on your recollection and does not require any information from doctors or other healthcare workers who treated or may treat you.

The research review call should take approx. 30 minutes, and will discuss the impact your Mentoring sessions have had on the goals as you set at the outset, and moving forward. Other areas to be discussed include but are not limited to:

- Confirming your contact information (name, email);
- Demographics (age, gender, country within the UK);
- Nature of accident that resulted in your spinal injury, injury, perception of your recovery, as well as year of injury;
- Mobility, pain and emotional wellbeing will be briefly discussed, including how you manage any pain, how it impacts some of your day-to-day activities and mental wellbeing;
- Your physical activities, looking at prior to post injury differences, current restrictions and desire for activity levels;
- Your perception and feelings to living life with a spinal injury will be discussed.

Follow-up parts to initial research
You will also be invited to submit a personal review so you can convey your story in your own words, focusing on life at least 3 months on following completion of your Mentoring program.

What are the risks of taking part in the study?
The principal risk relates to the unauthorised access to or disclosure of information you provide to us. However, as stated above, at no time will your personal information be stored with your responses, and so you remain unidentifiable. The study team will employ a wide range of methods to secure information and handle it responsibly. We will use our experience, tools, safeguards and controls to protect your information.

What are the benefits of taking part in the study?
You are unlikely to benefit directly from taking part in this study. However, the information collected in this study will lead to an improved understanding of the benefit Coaching and Mentoring talking support has on the health and wellbeing of the walking spinal community members, in part by aiding getting back to physical activity.

As a result of this research, recommendations will be made to spinal charities, NHS and Government organisations.

What is the alternative to participating in this study?
This study is for research purposes only. The only alternative is to not participate in this study.

How long will information be stored?

1. **Name & email address**
   Your name and email address will be stored until the end of this research project, which includes the time to collect data from all participants and the time to process and analyse data. Your name and email address will then be deleted.
2. **Non-identified data**
   This will be stored indefinitely.

Can I remove myself from the study or update data?
Yes. Taking part in this study is voluntary. You can withdraw from participation in the study at any time. In the event that you decide you do not want to participate in this research, please contact me via email g.fowler3@rgu.ac.uk

In such an event, your record will then be marked as "consent withdrawn". All non-identifiable study data collected from yourself to this point can still be used for analysis purposes, but your name and email address will be removed from the central system, and you will therefore not be included in any future data gathering or distribution, including the individual stages of research.

****

I have read this form and voluntarily agree to be in this study.

Name:
(print / sign name)   Date:

Robert Gordon University, Aberdeen

Appendix 4c

Adult informed consent statement – neutrals participation

Adult Informed Consent Statement – neutral (no mentoring or coaching)

Research Title*:
"A critical analysis of the impact Coaching & Mentoring has on the consumer psychology of adults with walking spinal conditions in relation to physical activity"

**please note, title can and will change over the duration of the research phase*

Principal Investigator: Gillian Fowler
(Study Investigator)

Contact Information: g.fowler3@rgu.ac.uk

Please read the following information about the study you will be participating in. By signing the box at the bottom of this form, you are confirming your choice to take part in this study.
You can give this verbally, and I can sign on your behalf, and email you a copy.

Introduction and Purpose

You are being asked to participate in a research study focusing on those with walking spinal conditions, and this will be carried out by video conference (or audio call, should that be requested). This study aims to examine and better understand the barriers to those with walking spinal conditions face in relation to participation in physical activity. In particular, how the engagement of Coaching and / or Mentoring talking support helps in the return to participating in physical activities, regardless if previously undertaken or new interest. This will give insight to ascertain what national measures can be made to make such talking support more accessible. The information collected may help researchers and other healthcare stakeholders learn more about the walking spinal community, general wellbeing, active levels and the risks of these barriers not being addressed.

The walking spinal community is one that is not readily examined, but instead the spinal injuries statistics are gathered for those with complete spinal cord injury, who have suffered permanent neurological damage (where walking ability is no more, and a wheelchair is used). However, those who have suffered a spinal injury, yet have the ability to walk have their own physical, mental and emotional obstacles, and life can be greatly affected by the injury.

As such, I am undertaking this research to give a voice to the walking spinal community, with the hope and determination that a positive change can be made.

No talking support – research stage

Thank you for advising that you have been offered no talking support in the forms of Coaching or Mentoring at any stage during your recovery, and the time thereafter. During our discussion, please do advise if you have received any other forms of talking support, such as counselling, hypnotherapy, psychologist appointments, so that I can clearly indicate a level of support. We can then discuss how these have also impacted your journey forward.

During our call, I will ask you 7 core measurement questions, which are used as a measuring benchmark. We will then discuss 4 further 'open' questions. You will be asked if you are happy for our call to be recorded, or I can transcribe**. Following our call, the transcript from our conversation will be stored securely, and your personal data will not be stated with your information. At no time, will your personal information or identity be revealed, these will always remain confidential.

***You will have the option to have the questions part recorded or for me to type answers, to which you can verify. This is your choice and I respect the sensitivity of your matter. Should you have also taken the offer of the complimentary coaching session, this will not be recorded in any way and no details stored.*

There is no cost or compensation for participating in the study.

Confidentiality and privacy are valued and all information will remain as such.

All research studies at Robert Gordon University are reviewed by an independent group, the Research Ethics Committee, to protect your safety, rights, wellbeing and dignity. Advice on questions of professional ethics and professional conduct associated with the study has been obtained from the university's committee as well as my research supervisory team.

What information will be collected in this study?
This part of the study, which involves a video or audio call, will allow a relaxed atmosphere to be asked questions, answering in your own time, and ensuring you are comfortable throughout. You can ask for a break or cease the call at any time.

All the information you provide will be based on your recollection and does not require any information from doctors or other healthcare workers who treated or may treat you.

The research review call should take approx. 30 minutes, and will discuss the impact your Mentoring sessions have had on the goals as you set at the outset, and moving forward. Other areas to be discussed include but are not limited to:

- Your contact information (name, email);
- Demographics (age, gender, country within the UK);
- Nature of accident that resulted in your spinal injury, injury, perception of your recovery, as well as year of injury;
- Mobility, pain and emotional wellbeing will be briefly discussed, including how you manage any pain, how it impacts some of your day-to-day activities and mental wellbeing;
- Your physical activities, looking at prior to post injury differences, current restrictions and desire for activity levels;
- Your perception and feelings to living life with a spinal injury will be discussed.

Follow-up parts to initial research
You will also be invited to submit a personal review so you can convey your story in your own words.

What are the risks of taking part in the study?
The principal risk relates to the unauthorised access to or disclosure of information you provide to us. However, as stated above, at no time will your personal information be stored with your

responses, and so you remain unidentifiable. The study team will employ a wide range of methods to secure information and handle it responsibly. We will use our experience, tools, safeguards and controls to protect your information.

What are the benefits of taking part in the study?
You are unlikely to benefit directly from taking part in this study. However, the information collected in this study will lead to an improved understanding of the benefit Coaching and Mentoring talking support has on the health and wellbeing of the walking spinal community members, in part by aiding getting back to physical activity.

As a result of this research, recommendations will be made to spinal charities, NHS and Government organisations.

What is the alternative to participating in this study?
This study is for research purposes only. The only alternative is to not participate in this study.

How long will information be stored?

1. **Name & email address**
   Your name and email address will be stored until the end of this research project, which includes the time to collect data from all participants and the time to process and analyse data. Your name and email address will then be deleted.
2. **Non-identified data**
   This will be stored indefinitely.

Can I remove myself from the study or update data?
Yes. Taking part in this study is voluntary. You can withdraw from participation in the study at any time. In the event that you decide you do not want to participate in this research, please contact me via email g.fowler3@rgu.ac.uk

In such an event, your record will then be marked as “consent withdrawn”. All non-identifiable study data collected from yourself to this point can still be used for analysis purposes, but your name and email address will be removed from the central system, and you will therefore not be included in any future data gathering or distribution, including the individual stages of research.

****

I have read this form and voluntarily agree to be in this study.

Name:
(print / sign name)

Date:

Appendix 5

Three-month follow-up prompts for written feedback

Personal reflection – following completion of Mentoring / Coaching sessions

Please share your relevant thoughts, experiences and any additional information you may wish to add so to give a deeper understanding and insight of your life following the completion of your Mentoring / Coaching program.

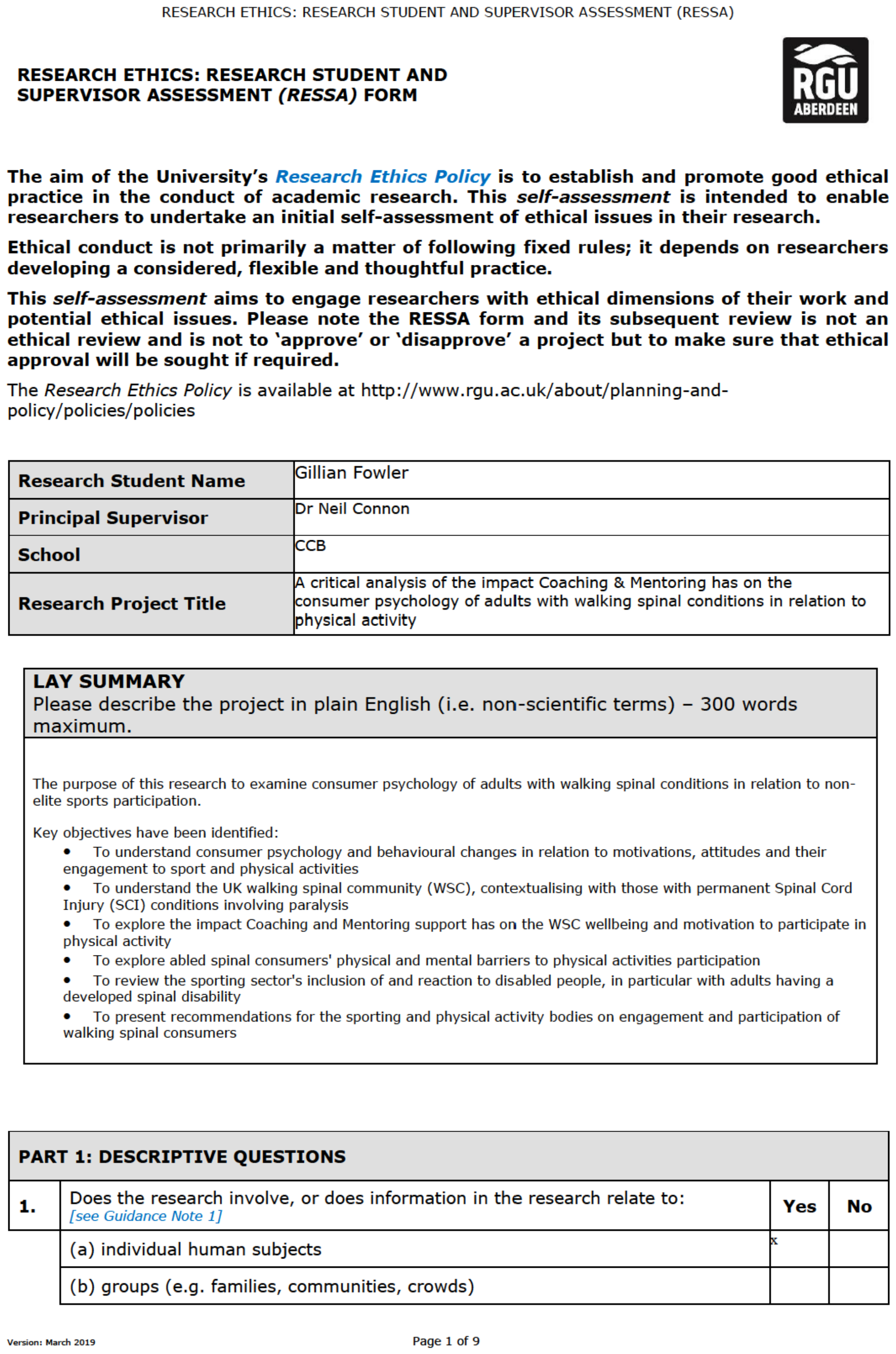
Points to consider include, but not limited to:

- Do you feel you have made progress since completion the sessions?
- What has helped? What have been the challenges?
- Highlight emotional, physical challenges, should you wish
- What activities are you doing? What do you hope to do once more?
- What would better assist you in moving forward?
- Did today's coaching / mentoring assist you? Give reasons.

Thank you.

Appendix 6

RESSA form



RESEARCH ETHICS: RESEARCH STUDENT AND SUPERVISOR ASSESSMENT *(RESSA)* FORM

The aim of the University's *Research Ethics Policy* is to establish and promote good ethical practice in the conduct of academic research. This *self-assessment* is intended to enable researchers to undertake an initial self-assessment of ethical issues in their research.

Ethical conduct is not primarily a matter of following fixed rules; it depends on researchers developing a considered, flexible and thoughtful practice.

This *self-assessment* aims to engage researchers with ethical dimensions of their work and potential ethical issues. Please note the RESSA form and its subsequent review is not an ethical review and is not to 'approve' or 'disapprove' a project but to make sure that ethical approval will be sought if required.

The *Research Ethics Policy* is available at http://www.rgu.ac.uk/about/planning-and-policy/policies/policies

Research Student Name	Gillian Fowler
Principal Supervisor	Dr Neil Connon
School	CCB
Research Project Title	A critical analysis of the impact Coaching & Mentoring has on the consumer psychology of adults with walking spinal conditions in relation to physical activity

LAY SUMMARY
Please describe the project in plain English (i.e. non-scientific terms) – 300 words maximum.

The purpose of this research to examine consumer psychology of adults with walking spinal conditions in relation to non-elite sports participation.

Key objectives have been identified:

- To understand consumer psychology and behavioural changes in relation to motivations, attitudes and their engagement to sport and physical activities
- To understand the UK walking spinal community (WSC), contextualising with those with permanent Spinal Cord Injury (SCI) conditions involving paralysis
- To explore the impact Coaching and Mentoring support has on the WSC wellbeing and motivation to participate in physical activity
- To explore abled spinal consumers' physical and mental barriers to physical activities participation
- To review the sporting sector's inclusion of and reaction to disabled people, in particular with adults having a developed spinal disability
- To present recommendations for the sporting and physical activity bodies on engagement and participation of walking spinal consumers

PART 1: DESCRIPTIVE QUESTIONS			
1.	Does the research involve, or does information in the research relate to: *[see Guidance Note 1]*	**Yes**	**No**
	(a) individual human subjects	x	
	(b) groups (e.g. families, communities, crowds)		

(c) organisations		
(d) animals?		
(e) genetically-modified organisms http://www.rgu.ac.uk/about/planning-and-policy/policies/policies		

Please provide further details:

Individuals who have suffered spinal injury due to a form of accident, and are still able to walk. The target audience will be those who have had the said accident and injury at least 12 months prior to up to 10 years.

		Yes	No
2.	Will the research deal with information which is private or confidential? *[see Guidance Note 2]*	x	

Please provide further details:

The nature of the accident, injuries and emotional wellbeing will be discussed as part of this research, for instance was the SCI as a result of a car accident, horse-riding incident, fall and so on, and what were the occurring injuries.

Other personal details such as location, age and recovery will also be discussed.

All information will remain private and confidential from all sources.

PART 2: THE IMPACT OF THE RESEARCH

		Yes	No
3.	In the process of doing the research, is there any potential for harm to be done to, or costs to be imposed on: *[see Guidance Note 3(i)]*		
	(a) research participants?	x	
	(b) research subjects? *[see Guidance Note 3(ii)]*		x
	(c) you, as the researcher?		x
	(d) third parties? *[see Guidance Note 3(iii)]*		x

Please state what you believe are the implications of the research:

There is no potential harm involved in this study, instead it investigates a community that may be deemed invisible, bringing awareness and positive consequences in terms of health, support and understanding. However, I am very aware and mindful that discussing life changes may trigger memories and emotions / feelings, though a thorough pre-interview discussion will be undertaken to ensure that the participant is not in early adaptive stages, agrees to have processed and looking forward, and any talking medical interventions / support has been completed prior to this interview. I will be looking for any 'red flags' that make me believe it is best not to proceed, as my first thought will always be to the wellbeing of the participant. I am a trained mentor and coach, and will use my skills in these assessments. That said, any signs of psychological distress will be carefully monitored, and signposting to talking support will be given to each participant.

		Yes	No
4.	When the research is complete, could negative consequences follow:		
	(a) for research subjects		x
	(b) or elsewhere? *[see Guidance Note 4]*		x

Please state what you believe are the consequences of the research:

As discussed above, there is no potential harm involved in this study, instead it investigates a community that may be deemed invisible, bringing awareness and positive consequences in terms of health, support and understanding. However, great care will be taken to be mindful of emotions and feelings as the subject matter is discussed, and participants will already have gone through a pre-interview assessment. No negative consequences will follow after the research is complete, and this is ensured by also there being a 3-month checkin with myself for a further discussion on changes. Bearing in mind, those I am interviewing are being assisted by coaching and mentoring programmes, this helps them to move forward and not dwell on the past. If anything, there is a positive outcome from this research participation.

Participants can request transcripts of the data collected, and can request amendments to correct data should that be required. This will also ensure the participant feels they have control on what information has been provided, it's correct and have peace of mind as to how the data has been collected and transcribed.

PART 3: ETHICAL PROCEDURES

5.	Does the research require informed consent or approval from: *[see Guidance Note 5(i)]*	**Yes**	**No**
	(a) research participants?	x	
	(b) research subjects? *[see Guidance Note 5(ii)]*		x
	(c) external bodies? *[see Guidance Note 5(iii)]*		x

If you answered yes to any of the above, please explain your answer:

Research participants will need to give consent to participation and use of their data. They will be answering for themselves, not representing others. This is their personal views, experiences.

Before the data collection can begin, each participant will be verbally briefed on what will occur during this project including the research aims, methods, and implications of this project so that each individual participant is fully aware and have obtained all the relevant information before giving their consent to be a part of this research.

They will also be asked to read a participant information sheet which will reinforce all the details of this research project and to allow participants to ask any questions they may have about the research in general or their participation. This form will also state what is involved during this research project and also what is expected of the participants during data collection.

Once this has occurred, every participant will be required to fill out a participant consent form. The participants have to read this form and sign it in order to give their permission to be including in this study. This will prove that participants will fully understand what the research will involve and what is expected of them during this project. Data collection can then commence.

Participants can remove themselves from the study at any time should they wish to do so.

6.	Are there reasons why research subjects may need safeguards or protection? *[see Guidance Note 6]*	**Yes**	**No**
		x	

If you answered yes to the above, please state the reasons and indicate the measures to be taken to address them:

As per question 4 and 11, research subjects need safeguards in place due to the personal, emotive nature. The nature of the accident, injuries and emotional wellbeing will be discussed as part of this research, for instance was the SCI as a result of a car accident, horse-riding incident, fall and so on, and what were the occurring injuries. Other personal details such as location, age and recovery will also be discussed.

A mindful approach is required, especially should the conversation move with permission to asking on generalised level about injuries and the impact on mobility, activities and quality of life. It is important to share access to support, should the participant require, ensuring wellbeing of participants remains at the forefront. However, prior to any engagement in this interview, a pre-discussion will take place to make sure the interviewee is at a stage where they are comfortable talking, this is not a raw area and no 'red flags' occur. It will be made clear I am not providing a counselling service, and offer signposting to such servicing. This signposting will also be available after the interview out of courtesy and care.

Should there be any signs of upset or the unlikely event of distress during the interviews, the participant will be asked if they wish to stop the interview, or bring it to a close, with the option to re-schedule, or even complete a questionnaire instead.

All information will remain private and confidential from all sources.

Confidentiality is central to the research design and each participant will be given a coded name to protect their anonymity. Data will also be highly secured and protected at all times during the research project. This will include all participants' personal data and their data which they give during the data collection phase. Every piece of data will be kept on a password protected laptop, and uploaded to R drive of RGU's server, which is encrypted and backed up. Only the researcher will have access to said data.

7.	Has PVG membership status been considered? *[see Guidance Note 7]*	**Yes**	**No**

	(a) PVG membership is not required.		
	(b) PVG membership is required for working with children.		
	(c) PVG membership is required for working with protected adults.	x	
	(d) PVG membership is required for working with both children and protected adults.		
	If you answered yes to (b), (c) or (d) above, please give details:		

I already have a PVG membership in relationship to working with protected adults, and this is through my work with BackUp spinal charity. I had already spoken to the PVG team, and was advised that I did not require to have a new PVG for these purposes as the adults are not deemed as protected adults. Instead I am working with adults with view of looking ahead, wanting forward momentum to live a more fulfilling life and regain physical activity enjoyment once more. In relation to this research, I am not working with adults to relive the incident that brought about their spinal condition, work through the emotions and life changes, and I have been very careful in choosing participants who are at a stage to look forward, not back. The criteria pool safeguards this, as does the initial discussion to ensure there are no 'red flags' that require to be addressed.

It is my responsibility to ensure that conversations to not move into territory that can cause unwanted emotional impact for the participant, remaining focused and mindful on the purpose of this research, and the coaching that is offered.

Coaching in itself explores areas that any coachee wishes and directs, that is the nature of transformation coaching. However, the qual questions for the research will remain on point and not veer off.

8.	Are specified procedures or safeguards required for recording, management, or storage of data? *[see Guidance Note 8]*	**Yes**	**No**
		x	
	If you answered yes to the above, please give details:		

Safe storage of data will be used, and information destroyed within a timeframe that will be conveyed as part of the 1st person research stage.

Participants will be asked if they are happy for the interview stage to be recorded or if they prefer for me to write/type notes, quote, summarise and then ask for approval for all the information captured. All note taking will be deleted, with only the typed approved notes remaining. Transcribed documents will be kept on the Cloud, OneDrive, Robert Gordon University's R drive which is password protected. The transcribed documents will use a number for the participant, not their personal details. Instead, the record of who has responded and assigned number will be kept separately from this main document area as reference should further clarifications be required (see Q6). This will also ensure that bias is not given to the transcribed documents that will then be used as analysis. All records will be kept on the Cloud, password protected. Deletion will occur after full analysis and write-ups have been complete.

PART 4: THE RESEARCH RELATIONSHIP

9.	Does the research require the researcher to give or make undertakings to research participants or subjects about the use of data? *[see Guidance Note 9]*	**Yes**	**No**
			x
	If you answered yes to the above, please outline the likely undertakings:		
10.	Is the research likely to be affected by the relationship with a sponsor, funder or employer? *[see Guidance Note 10]*	**Yes**	**No**
			x
	If you answered yes to the above, please identify how the research may be affected:		

PART 5: OTHER ISSUES

11.	Are there any other ethical issues not covered by this form which you believe you should raise?	**Yes** x	**No**

The subject area can be an emotive and subjective one, and thus a mindful approach is required. Although the focus is on moving towards a more active future, the participant may recall memories or highlight points about injuries and the impact on mobility, activities and quality of life. It is important to share access to support, should the participant require, ensuring wellbeing of participants remains at the forefront. A signposting sheet will be offered to each participant, highlighting help available (doctor, talking services such as Samaritans and Mind over Matter, BackUp, BackStrong, counselling).

The participant form, that must be read and signed /agreed to before commencing (see Q5) will also provide details of support services, as well as stating should there be any signs of upset or distress during the interviews, the participant will be asked if they wish to stop the interview, or bring it to a close, with the option to re-schedule, or even complete a questionnaire instead. The participant can also request the interview to stop or take a break should they feel uncomfortable.

Anonymity will be ensured by avoiding any identifying labels, such as location, age, sex of person. Instead as per Q8, the assigned code will be used where required.

All answers and participant details will remain confidential at all times. No information will be shared outwith the supervising team.

STATEMENT BY RESEARCH STUDENT			
I believe that the information I have given in this form is correct, and that I have addressed the ethical issues as fully as possible at this stage.			
Signed:	[redacted]	**Date:**	23/12/2021

Ethical issues should be reviewed periodically through completion of the project, in particular at the transfer application stage by completing a further RESSA form.

The *Research Ethics Policy* is available at http://www.rgu.ac.uk/about/planning-and-policy/policies/policies

PART 6: TO BE COMPLETED BY THE PRINCIPAL SUPERVISOR			
12.	Does the research have potentially negative implications for the University? *[see Guidance Note 11]*	**Yes**	**No**
	If you answered yes to the above, please explain your answer:		
13.	Are any potential conflicts of interest likely to arise in the course of the research? *[see Guidance Note 12]*	**Yes**	**No**
	If you answered yes to the above, please identify the potential conflicts:		
14.	Are you satisfied that the student has engaged adequately with the ethical implications of the work? *[see Guidance Note 13]*	**Yes**	**No**
	If you answered no to the above, please identify the potential issues:		
15.	Please select one of the following:		
	i. The research project should proceed in its present form – no further ethical approval is required and no further action is necessary.		
	ii. The research project requires ethical review by the School's Ethics Review Panel (SERP)		
	iii. The research project requires ethical review by the University's Research Ethics Sub-Committee (RESC)		
	iv. The research project requires ethical review by an external body. If this applies, please give these details:		

Title of External Body providing ethical review	
Address of External Body	
Anticipated date when External Body may consider project	

AFFIRMATION BY PRINCIPAL SUPERVISOR			
I have read the research student's responses and have discussed ethical issues arising with the research student. I can confirm that the information presented by the research student is correct and appropriate to allow an informed judgement on whether further ethical approval is required.			
Signed:	[redacted]	**Date:**	

Ethical issues should be reviewed periodically through completion of the project, in particular at the transfer application stage by completing a further RESSA form.

ⓘ Guidance Note 1

Ethical principles normally apply to information, data, and derivative substances in the same way as they apply to the subjects themselves. Consequently, work with individual financial data is governed by the principles of work with individual human subjects, and work with animal tissue is governed by the principles of work with animals. [return to Question 1]

ⓘ Guidance Note 2

The Australian National Health and Medical Research Council argues: "Individuals have a sphere of life from which they should be able to exclude any intrusion ... A major application of the concept of privacy is information privacy: the interest of a person in controlling access to and use of any information personal to that person." This principle applies to all information about a person, whether or not it is obtained directly from that person. The area that is private is conventional and culturally defined; in the UK it commonly includes income and family arrangements.

The information obtained in research is not, however, necessarily private. Some material is in the public sphere, which includes published and broadcast material, academic discourse, and the activities of government. Activities undertaken in a public place are public, rather than private, if they are openly displayed (e.g. artistic exhibition or attendance at a public event) or subject to public regulation (e.g. driving)."

[return to Question 2]

ⓘ Guidance Note 3

(i) "Harm" refers to negative consequences beyond those which would occur in the normal course of events. Costs may include putting subjects under stress, causing them anxiety, or even wasting their time. The question asks only about potential harm. Potential harm is not cancelled out by potential benefit. Broader consequences are considered in the following question. Reviews of information are also subject to ethical consideration. It should never be assumed that no harm can be done to people simply by writing about them.

(ii) "Research subjects" includes not just participants and informants but those about whom data is collected. The term covers any research subject, including humans, animals, and inanimate subject matter.

(iii) The University has a responsibility to avoid putting you at risk, and potentially dangerous situations should always be drawn to the University's attention.

(iv) "Third parties" include any person, group or organisation who may be affected by the process of the research. [return to Question 3]

ⓘ Guidance Note 4

"Elsewhere" is an open category, intended to include consequences for third parties, sections of the community (e.g. "the voluntary sector"), the economy ("the catering industry") or the environment. ("the national park"), globally, and generalities which are harder to identify (e.g. "animal welfare"). Student researchers should never assume that their work is harmless only because they don't believe others will read it.

[return to Question 4]

ⓘ Guidance Note 5

(i) Research in the public sphere (question 2) may not require the consent or approval of research subjects. The advice of the Canadian Tri-Boards is that "REBs (research ethics boards) should recognize that certain types of research - particularly biographies, artistic criticism or public policy research - may legitimately have a negative effect on organizations or on public figures in, for example, politics, the arts or business. Such research does not require the consent of the subject ... Consent is not required from organizations such as corporations or governments for research about their institutions".

There is a general presumption that consent should be obtained from subjects whenever the information is private. The requirement to seek consent can, however, be waived in certain exceptional cases, for example where there is necessary deception, or where the consent of a subject may jeopardise the welfare of an informant. All such cases require explicit ethical review and an extended justification.

(ii) The consent of research *subjects* cannot be presumed because the consent of *informants* has been obtained. For example, one member of a family cannot necessarily be taken to speak for others, and an employer cannot always give consent on behalf of employees.

(iii) The consent of *external bodies* is required for several types of research, including e.g.

- research relating to the NHS
- research for work with dangerous substances, and
- research involving experimentation with animals.

The existence of external consent does not ethically exclude the project from consideration by the University, or vice-versa. Please provide a brief description of the project as submitted to the external body for ethical review.

[return to Question 5]

ⓘ Guidance Note 6

This may apply, for example, to human subjects who are regarded as vulnerable (e.g. children or prisoners) and to animals. Consent should not be taken as sufficient protection.

[return to Question 6]

ⓘ Guidance Note 7

If your research will involve some form of work with children or protected adults or both, you may need to apply to join the Disclosure Scotland PVG Scheme. For further details and notes on applying please refer to www.rgu.ac.uk/about/governance/policies-and-legal/disclosure-scotland and www.disclosurescotland.co.uk/.

[return to Question 7]

ⓘ Guidance Note 8

Private data should be presumed to be under the control of the person or organisation to whom it relates. Anonymity is not a sufficient condition for confidentiality. Removing names from a report, or using aggregate data, may not be enough to ensure that respondents cannot be recognised or identified; and even where material is not identifiable except by the person who gave it, using it in ways that go beyond the terms on which it has been given may be a breach of trust.

[return to Question 8]

ⓘ Guidance Note 9

The integrity of the researcher, and the status of future research, requires that such undertakings should be respected. Promises should not be given in circumstances where they cannot be kept. For example, a researcher is not at liberty to conceal criminal activity and consequently cannot offer unconditional confidentiality in a study of such activity.

[return to Question 9]

ⓘ Guidance Note 10

Students who are undertaking research within the context of a work placement or employment should be aware that this is likely to have implications for the research and should identify what those implications are.

Sponsorship includes the grant of access to material by a responsible organisation.

[return to Question 10]

ⓘ Guidance Note 11

The University needs to know if the research may jeopardise its reputation through, for example, work for oppressive governments or other research relationships (e.g. work for tobacco firms) that might compromise or bias the research. Negative consequences in the form of criticism of the University or negative evaluations by students are legitimate potential outcomes.

[return to Question 12]

ⓘ Guidance Note 12

This includes, for example, conflicts between researchers, funders, stakeholders, employers and other research projects.

[return to Question 13]

ⓘ Guidance Note 13

In signifying agreement, principal supervisors are accepting part of the ethical responsibility for the project.

[return to Question 14]

Appendix 7

Robert Gordon University Research Ethics Policy

RESEARCH ETHICS POLICY

1. SCOPE AND PURPOSE

The aim of this university policy is to establish and promote good ethical practice in the conduct of academic research. The *Research Ethics Policy* is intended to:

(i) provide standards to protect individuals and groups with whom researchers interact, including the university and its staff;

(ii) engage staff, students and any interested parties, including the public, of issues that may arise from research activity;

(iii) provide a clear understanding of the mechanisms the university employs to internally review its practices and activities in relation to research.

This policy complements the university's *Ethics Policy* and must be viewed in the context of the university's *Research Governance and Integrity Policy*, *Data Protection Policy*, *Freedom of Information Policy* and financial guidelines, all of which are available at www.rgu.ac.uk/about/planning-and-policy/policies/policies.

The university wishes to promote a quality research culture, where excellence is promoted and key elements such as effective leadership, openness, accountability and honesty, are maintained and enhanced.

This *Policy* is of direct relevance to all those who host, conduct, participate and disseminate the results of research.

This *Policy* requires that researchers need to consider issues of ethics in the design, process and outcomes of research.

This *Policy* requires that researchers have a clear understanding of research ethics review mechanisms within the Robert Gordon University.

2. NEED FOR A POLICY

2.1 To encourage researchers to adhere to best practices relating to the ethical development, implementation and dissemination of research

Researchers should be aware that all research carried out should be to the highest ethical standards possible, that it complies with all relevant laws including, where appropriate, laws of other countries; appropriate due diligence is undertaken to minimise risk; and finally, that it adheres to all relevant policies or codes of good practice.

2.2 To protect the integrity and reputation of the university

The university wishes all research to be in the best interests of the university and its reputation, as well as its partners and spin-off companies.

The university has many close links with the community and it wishes these links to remain untarnished.

The university has a clear responsibility to develop a culture among staff, researchers and students in which attention to both governance and ethics in research becomes accepted practice. To achieve and maintain a working culture, the university has to have an agreed, consistent and unambiguous framework and the means to implement it.

The university has a duty of care toward members of its community and also toward members of the general community where the university's activities impact upon them.

2.3 To protect the rights of those engaged in or affected by research

The responsibility for ensuring ethical conduct in research extends not only to the investigators but to everyone engaged in the process. This includes the university.

The rights of those engaged in, or affected by, research are of two kinds. General rights are those which apply to all, like human rights or animal rights. The university is bound to observe general ethical principles of this kind. Particular rights are those which are determined by context, circumstances and specific undertakings made in research – for example, undertakings made in respect of confidentiality, the use of data and reporting. Agreements of this kind are made in the name of the university and consequently the university has a responsibility to ensure that they are complied with.

2.4 To protect the rights of fellow researchers

To encourage the internal sharing of ideas, methods and research results and to encourage collaboration between researchers, research groups, research disciplines and institutions.

Researchers need to have mutual respect for one another and duly acknowledge the input of each individual.

Researchers must also consider the confidentiality of projects/results with commercial sensitivity.

3. GENERAL PRINCIPLES

3.1 Ethical conduct

Ethical conduct depends on:

- consideration of the impact of the research, including
    - the potential implications of research for subjects and participants
    - the potential implications of research for non-participants, and
    - the uses to which research can be put.

- guidance covering the treatment of participants, including
  - informed consent
  - confidentiality and anonymity (see section 3.3 below), and
  - special consideration of vulnerable respondents
- academic considerations. Researchers are enjoined to
  - maintain research of high quality
  - display competence
  - act responsibly towards others in their field, and
  - advance their discipline
- guidance concerning research relationships. These include
  - the responsibilities of the researcher to the body commissioning the research,
  - responsibilities to the university,
  - commitments to fellow researchers, and
  - integrity in dealing with subjects, participants and stakeholders.

3.2 The impact of research

Researchers should ensure engagement in research does not cause unnecessary harm to participants, stakeholders, the environment, the economy and other living beings.

The principles of beneficence and non-maleficence are fundamental to all research activity. Beneficence is the requirement to promote the interests and wellbeing of others. It is the ethical principle of 'doing good' in the widest sense. Non-maleficence is the principle of 'not doing harm'. Both principles must be applied to all entities directly or indirectly affected by the research. In practice these principles frequently conflict, for example as in animal *versus* human welfare.

Researchers have a moral obligation to attempt to minimise the risk of physical and/or mental harm to themselves, human and animal participants, research subjects, stakeholders and the environment which may result from their research.

3.3 Ethical procedures

Ethical procedure depends in part on consideration of the impact of research, but more specifically on impacts for those who are directly affected by the process of research. Examples are procedures to obtain consent, to ensure anonymity, to protect confidentiality and to ensure the position of vulnerable subjects.

The application of these procedures depends on the nature of the research, and cannot be determined by simple rules without careful ethical consideration.

Research in the public sphere may not require the consent or approval of research subjects. The advice of the Canadian Tri-Boards is that "REBs (research ethics boards) should recognize that certain types of research - particularly biographies, artistic criticism or public policy research - may legitimately have a negative effect on organizations or on public figures in, for example, politics, the arts or business. Such research does not require the consent of the subject ... Consent is not required from organizations such as corporations or governments for research about their institutions"[1].

There is a general presumption that consent should be obtained from subjects whenever the information is private. The requirement to seek consent can, however, be waived in certain exceptional cases, for example where there is necessary deception, or where the consent of a subject may jeopardise the welfare of an informant. All such cases require explicit ethical review and an extended justification.

Private data should be presumed to be under the control of the person or organisation to whom it relates. Anonymity is not a sufficient condition for confidentiality. Removing names from a report, or using aggregate data, may not be enough to ensure that respondents cannot be recognised or identified; and even where material is not identifiable except by the person who gave it, using it in ways that go beyond the terms on which it has been given may be a breach of trust.

The protection of subjects who are vulnerable calls for particular consideration to be given by researchers. This may apply, for example, to human subjects who are regarded as vulnerable (e.g. children or vulnerable adults) and to animals. Consent and anonymity should not be taken as sufficient protection.

3.4 Academic quality

Researchers are enjoined to maintain research of high quality, display competence, act responsibly towards others in their field, and advance their discipline.

3.5 Research relationships

As an academic community, the Robert Gordon University has a responsibility to encourage the highest possible standards of care, consideration and integrity within all research. Research integrity extends to accountability for the ethical basis for all aspects of the research; for the safety of both the participants and the researchers; for the probity of the financial management of the project; for the reliability of results and for making every best effort to provide value for public or private funds invested in the project.

Consideration should be given to potential conflicts of interest that may arise given the source of research funding and the nature of the research project.

All funds shall be managed in accordance with the university's financial guidelines.

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[1] Canadian Institutes of Health Research, Natural Sciences and Engineering Research Council of Canada, Social Sciences and Humanities Research Council of Canada, *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans.* 1998 (with 2000, 2002 and 2005 amendments). Available at http://www.pre.ethics.gc.ca/eng/archives/tcps-eptc/Default/ [accessed 4 February 2016]

3.6 Dissemination of research findings

It is expected that the researcher disseminate and publish all research findings, unless major confidentiality issues arise and subject to contractual provisions.

When publishing research, all reasonable steps must be taken to ensure that published reports, statistics and public statements about research activities and performance are complete, accurate and unambiguous. The nature of financial or in kind support should normally be acknowledged in all reports of research outcomes, both to acknowledge the support and to enable readers to make their own judgement over any prejudicial influences this support may have had upon the direction of the research.

The university is committed to pushing the boundaries in all areas of research in order to advance human knowledge but, at the same time, to benefit humankind. Therefore researchers should be aware of the use, potential misuse and abuse of published research.

All researchers who have contributed to the development of results and dissemination will be appropriately acknowledged.

Where research findings have commercial potential, consideration should be given to appropriate forms of protection prior to dissemination.

4. UNIVERSITY RESPONSE TO NON-COMPLIANCE

Non-compliance and ethical misconduct are addressed in the *Research Governance Policy*.

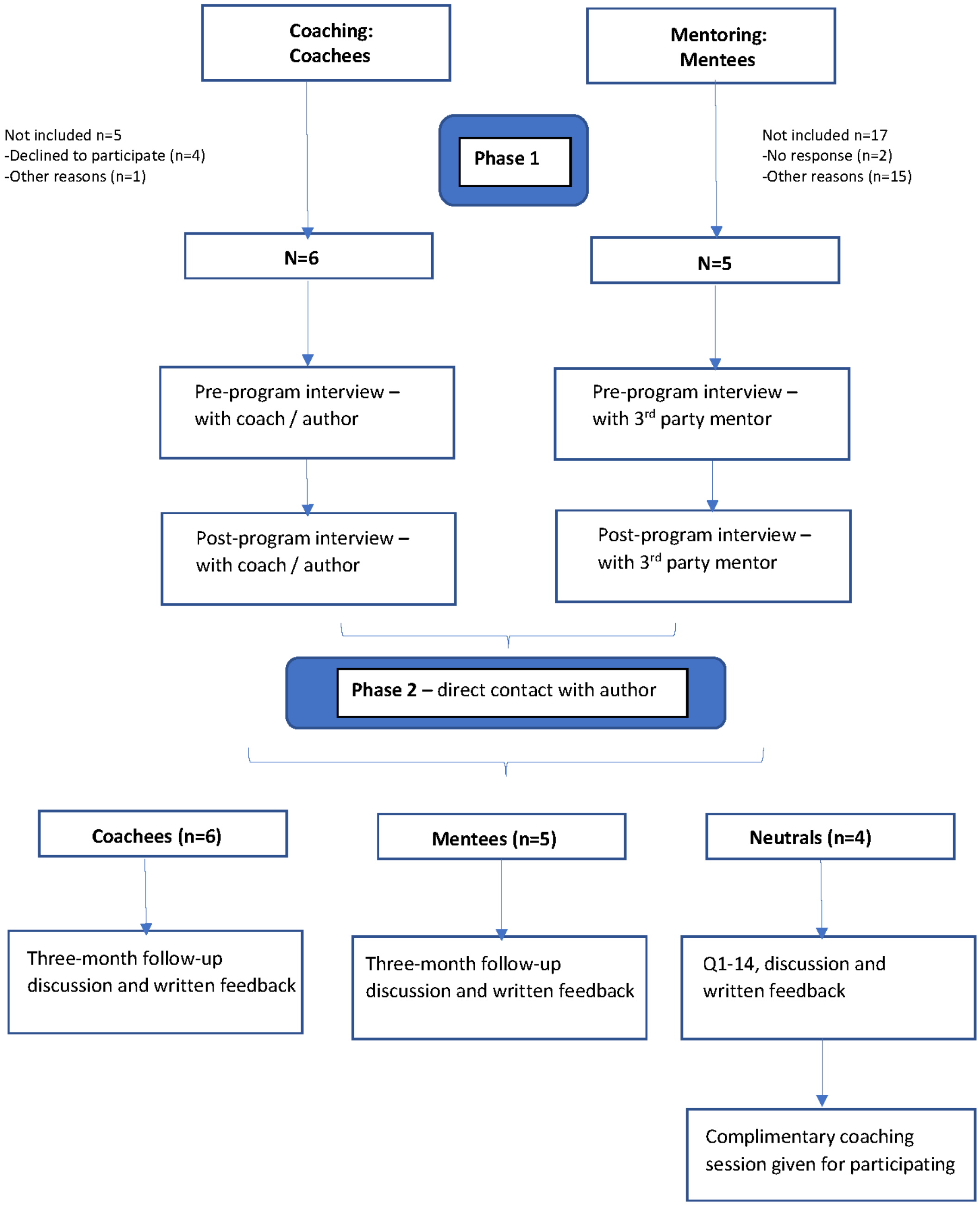
5. RESEARCH ETHICS POLICY REVIEW

The *Research Ethics Policy* will be regularly reviewed and updated, and amendments will require the approval of the university's Board of Governors.

Version 1: Approved Board of Governors, 23 June 2003
Version 2: Approved Board of Governors, 25 March 2004
Version 3: Approved Board of Governors, 18 December 2008; updated 29 July 2011
Version 4: Updated 02 September 2014
Version 5: *draft*

Appendix 8

Live study's qualitative research stages



Appendix 9

BackUp's mentoring service FAQs

transforming lives after spinal cord injury

Frequently asked questions about the Back Up mentoring service

We understand that there can be many questions when you're looking for support so we've written some common FAQs about our mentoring service for individuals with spinal cord injury (SCI) and family members. We cover questions for both potential mentees and mentors.

What is mentoring?

It is a mostly telephone-based support service where we match mentees with a suitable mentor with relevant experience to enable them to feel supported, connected and to achieve their goals within ten phone calls or less.

Questions for mentees

I'd like to have mentoring, what do I do?

Please sign up to Mentorloop and one of the team will be in touch with you within the next two weeks.

How many calls are allowed?

We recommend up to 4 calls up to an hour each. Relationships can go up to 10 calls and occasionally it is possible to have one or two more if there is a specific reason but it is decided on a case-by-case basis.

How will you choose a mentor for me?

We will match you on the basis of your answers to questions about your or your relative's spinal cord injury, how it affects you/them in terms of mobility, bladder, bowels, pain and we will make a suitable match based on this as well as personal interests. We will ask you what goals you'd like to achieve through mentoring and your mentor will be chosen to help you reach this.

I don't feel like I need ten full calls, can I still speak to a mentor?

Absolutely, sometimes people get what they need and reach their goals in one or two calls.

Can we have a video call?

Yes, you can request this through the system.

I've been injured for many years – can I still have mentoring?

Absolutely, mentoring is available at any stage, provided you can choose a goal that you'd like to achieve.

I can only speak at weekends or in evenings, is this okay?

Yes, mentors can often be flexible to work around your availability. Please let us or your mentor know your availability.

I've got mental health issues, can I still have mentoring?

Yes, It's important to note that mentoring is not a mental health service nor can it replace counselling or psychological support. However if you do have a mental health condition, mentoring can run alongside any other support. Please let us know how your mental health issues affect you and what support you may be receiving.

I've had mentoring before, would it be okay to have it again?

Yes. Usually, one mentoring relationship is sufficient for mentees to reach their goals, but it is possible for mentees to have another relationship, again, if they can identify some new goals to be achieved through mentoring.

Is everything I say kept private between my mentor and I?

Mentors will report back a general summary of your conversations to the mentoring team. Conversations are confidential within Back Up (you, your mentor and staff at Back Up), except where there is a safeguarding concern about serious harm to you or someone else. In this case we may need to involve other services, such as your GP.

Is everybody accepted to receive mentoring?

The mentoring team will undertake a rigorous assessment process where they will decide if we have a suitable volunteer mentor who would be able to support you. Occasionally, the team will make a decision that mentoring is not the most appropriate support. We will do our upmost to signpost you to an appropriate service whether it be at Back Up or externally.

Can my mentor and I meet in person?

Mentoring primarily takes place over the phone so that we can ensure we can make the most suitable match. It may be possible to meet in person during the relationship in a public place provided both parties agree and we are made aware.

Can I have my mentor's telephone number or befriend them on social media?

No. We ask all mentors not to give out their personal contact details to mentees or to accept requests during the mentoring relationship. If you would like to get in contact with your mentor, please call the mentoring team in the office on **020 8875 1805**. They will get in touch with your mentor and pass on any message or schedule a call for you both.

What happens at the end of the sessions with my mentor?

At the end of a mentoring relationship you'll be asked to score yourself on the questions you were asked in the beginning and whether you've achieved what you set out to. There may be mixed feelings when you've completed all your sessions with your mentor. You and your mentor might feel sad that the relationship is ending, which is quite normal. It may be that there are still problems or difficulties that you're facing. We hope the sessions that you have with your mentor will allow you to feel more confident about dealing with those situations when the mentor is not there but we hope that the end of mentoring will not be the end of your relationship with Back Up. There are other opportunities to get involved which can offer you further support to help you meet your aspirations and reach your goals such as courses or volunteering.

How do my mentor and I arrange calls?

We suggest arranging a call at the end of your last phone call, or keeping to the same time every week/fortnight, but if you need to reschedule, you can use the system to do this.

Questions for mentors

Who can be a mentor?
People of all ages (including under 18s) with any level of spinal cord injury can be a mentor, as can a partner, parent, sibling, child or other immediate relative of someone with SCI.

What do I need to become a mentor?
Excellent listening skills, a desire to support others and lots of experience of living with, or having a family member with a spinal cord injury are key attributes to our mentors. The most important skills you need are to be able to listen without judging, empathise, and share your own experience of SCI.

How much time do I need to become a mentor?

We require mentors to attend a training weekend and then if you are successful, you can mentor as much or as little as you want, as required. Mentoring relationships can be up to 10 calls of up to an hour each, with some time to record notes of the call and to send them to the office.

I haven't been asked to mentor in a while – why is this?

We make mentoring matches based on the need of mentees who are referred to us, whether that be age, level of injury, mobility. Don't take it personally, the likelihood is that we haven't had a referral that would be a suitable match for you.

How often do you train mentors?

Currently we run two family mentor trainings and two spinal cord injury mentor trainings per financial year.

Can mentors have more than one mentee at a time?

This can happen if the mentor is willing and able to take on more than one mentee at a time. If there is the demand.

Appendix 10a

Agreement between Author and BackUp

February 2021

Dear Gillian,

PhD research collaboration

A warm welcome to the team!

A heartfelt thank you for supporting our work as you continue to volunteer your time as a mentor and now as part of your PhD research.

Back Up was founded by volunteers, and volunteering remains at the heart of everything we do. We believe volunteers have a unique and essential contribution to all aspects of our work.

Our mission relies on the commitment, hard work and enthusiasm of our supporters.

We aim to deliver services that build confidence, independence and inspire people affected by spinal cord injury to transform their lives

We use our values to guide everything we do, including our partnership with you and would like you to use them to guide your work and behaviour when working with Back Up:

We embrace challenge, We have fun, We build inclusive communities,
We are ambitious for each other

We hope this letter helps to clarify mutual hopes and expectations regarding the discussed research, so that we can make your volunteering a positive experience all round. The following page clarifies what's been agreed in terms of expectations, support, data access & usage, as well as other considerations.

Firstly, and very importantly, we believe that **all of our volunteers and staff** will thrive in a culture of continuous learning; involving **listening, respect and openness** to new ideas and developments; and willingness to **give and receive constructive feedback**.

You can expect that:

- Your gift of time, skills and experience will be used well so you will know that you are making a difference to the lives of people affected by spinal cord injury.
- You will be provided with all the information and guidance you need to carry out your project
- Your volunteering will be recognised and appreciated.
- You will be volunteering in an organisation which is non-discriminatory and values diversity.
- We will help you resolve any problems you may have with the organisation or your volunteering.

It has been discussed and agreed that you have 2 main areas to your data collection, where the first will see the collaboration with Back Up, the second being your own, separate research. As such, there is agreement and full understanding you will::

A. Have access and input into Back Up's mentoring questionnaire for data collection and analysis as part of your research

B. Undertake your own qualitative research as part of your PhD, and Back Up will assist in promoting this opportunity by reaching out to our community, advising them participation is being invited.

To support your research, this agreement is for you to:

- Provide input into Back Up's approach to inputting and measuring the impact of our mentoring service, (advisory only)
- Propose the addition of additional questions to be asked as of 1st April 2021 (point A)
- To have access to the mentoring data drawn from completed questionnaires. No published information will use any identifying factors. (point A)
- Maintain the right to analyse the data set and generate findings for use within the research (point A and B)
- To retain the right to publish data for academic purposes without vetting as part of the PhD research (point A and B)
- Identify key quality of life indicators and barriers to mentoring, advising Back Up where applicable (advisory only)
- Support the development of quality check procedures, as well as opportunities to make greater impact going forward (advisory only)
- To produce an invitation to participate in the project which will be distributed to Back Up's mentoring community (mentors and users) by Back Up. (point B)

Data usage & Intellectual Property Rights

- Back Up maintains the IPR with regards to their questions in the questionnaire, but agrees to share all questionnaire data for the purpose of this research (point A)
- Back Up, maintain the IPR on the additional questions to be added to the mentoring questionnaire but agrees to share all questionnaire data for the purpose of this research (. Both parties are welcome to use the data for own purposes (point A)
- You agree to share the data with Back Up to use the data for its own purposes. Selling of data is not permitted. (point A)
- You (and Robert Gordon University, Aberdeen) maintain the IPR of the qualitative interview data. (Point B) Any referencing of this qualitative data must be referenced / cited as it remains the property of Gillian Fowler and Robert Gordon University.
- The IPR of the PhD research as whole remains with yourself and Robert Gordon University (point A and B)
- Back Up will send you completed mentoring questionnaires as and when created, from 1st April until April 2023 (24-month period).

Confidentiality

Before you start work, please read our data protection policy to understand your responsibilities in relation to confidentiality. Especially as your work will involve talking to staff and volunteers, service users and accessing Back Up's files, it is very important that you understand what information you can access or share and for what purposes.

You have agreed to ensure the **anonymity of Back Up service users** by assigning coding to identifiable factors (including location, gender, age group & personal details) and by encrypting and storing data in a secure location.

It is essential that information concerning people affected by spinal cord injury is treated sensitively and confidentially, whereby only yourself and your supervisory team may discuss, but no identifying factors should be disclosed. Only information pertinent to the PhD research may be used, all other disclosed information remains confidential between the participant, yourself and Back Up, in relation to the mentoring questionnaires. In relation to the qualitative interviews, confidential information will remain between yourself and the participant.

If you believe that there is a breach of confidentiality, you are asked to let the Mentoring Manager know as soon as possible.

If one of our service users discloses information which is of concern to the person you are speaking to or to yourself it is important you contact Back Up so we can support you and fulfill our duty of care to that person. Nothing is confidential between them and you as an individual, as you are volunteering on behalf of Back Up.

Equal opportunities

Please read our equal opportunities policy, be guided by them and ask if you have any questions.

Once again, a very warm welcome to the team. Please do not hesitate to ask if you have any questions at all. We very much look forward to working with you.

☑ **I have read and understood the contents of this letter**

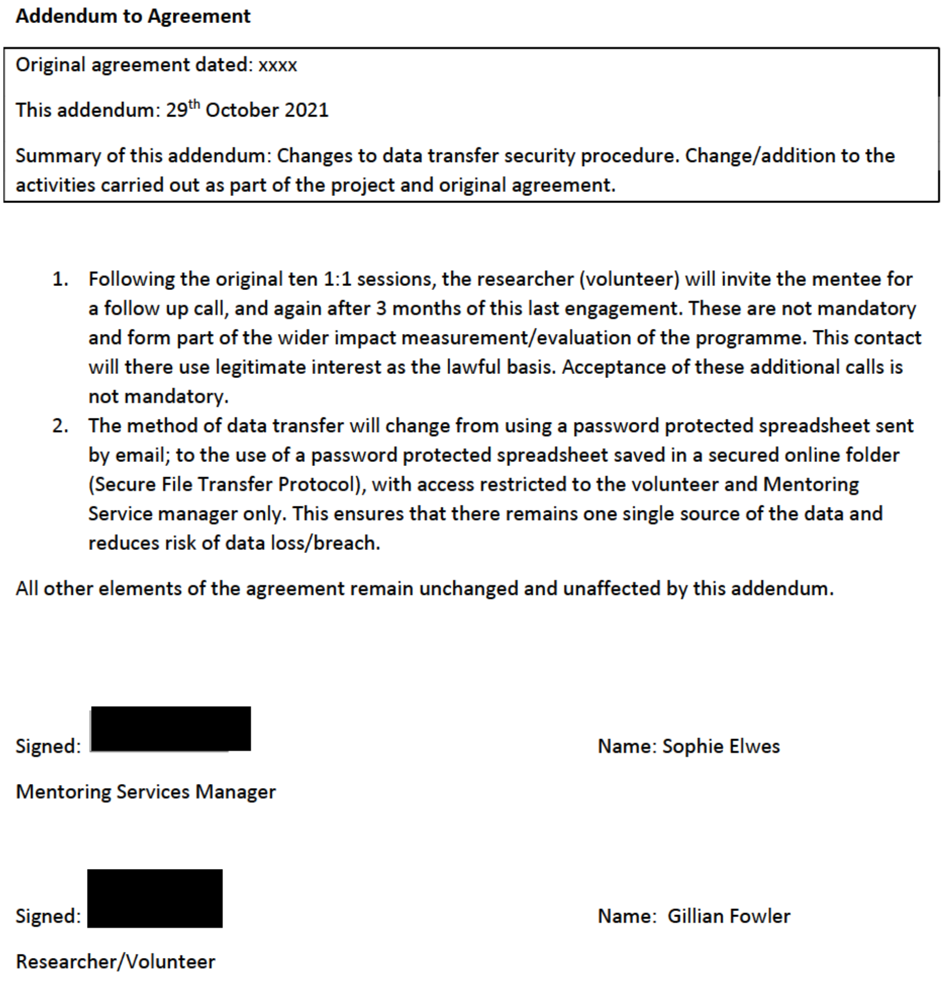
☑ **I have read and understood the confidentiality and data protection and equal opportunities policies**

Signed: [redacted] (Volunteer)
Name: Gillian Fowler
Date: 12/03/2021

Signed: [redacted] (Manager)
Name: Abigail Lock
Date: 12/03/21

Appendix 10b

Addendum to BackUp agreement



Addendum to Agreement

Original agreement dated: xxxx This addendum: 29th October 2021 Summary of this addendum: Changes to data transfer security procedure. Change/addition to the activities carried out as part of the project and original agreement.

1. Following the original ten 1:1 sessions, the researcher (volunteer) will invite the mentee for a follow up call, and again after 3 months of this last engagement. These are not mandatory and form part of the wider impact measurement/evaluation of the programme. This contact will there use legitimate interest as the lawful basis. Acceptance of these additional calls is not mandatory.
2. The method of data transfer will change from using a password protected spreadsheet sent by email; to the use of a password protected spreadsheet saved in a secured online folder (Secure File Transfer Protocol), with access restricted to the volunteer and Mentoring Service manager only. This ensures that there remains one single source of the data and reduces risk of data loss/breach.

All other elements of the agreement remain unchanged and unaffected by this addendum.

Signed: [redacted] Name: Sophie Elwes

Mentoring Services Manager

Signed: [redacted] Name: Gillian Fowler

Researcher/Volunteer

Appendix 11

Signposting to further support

Signposting to further support

Thank you for participating in my research project, to which as promised, I now share a list of organsations where you can access further support:

Spinal support

Aspire - https://www.aspire.org.uk/

BackStrong - https://backstrong.org.uk/

BackUp - https://www.backuptrust.org.uk/

British Association of Spinal Surgeons (for relevant studies) - https://spinesurgeons.ac.uk/

Scoliosis Association - https://sauk.org.uk/

Spine Health - https://www.spine-health.com/

Spinal Injuries Association - https://www.spinal.co.uk/

Spinal Injuries Scotland - https://www.spinalinjuriesscotland.org.uk/

Pain Concern - https://painconcern.org.uk/

Mental health

Heads Together - https://www.headstogether.org.uk/

Mind - https://www.mind.org.uk/

Samaritans - https://www.samaritans.org/ / or free call: 116 123

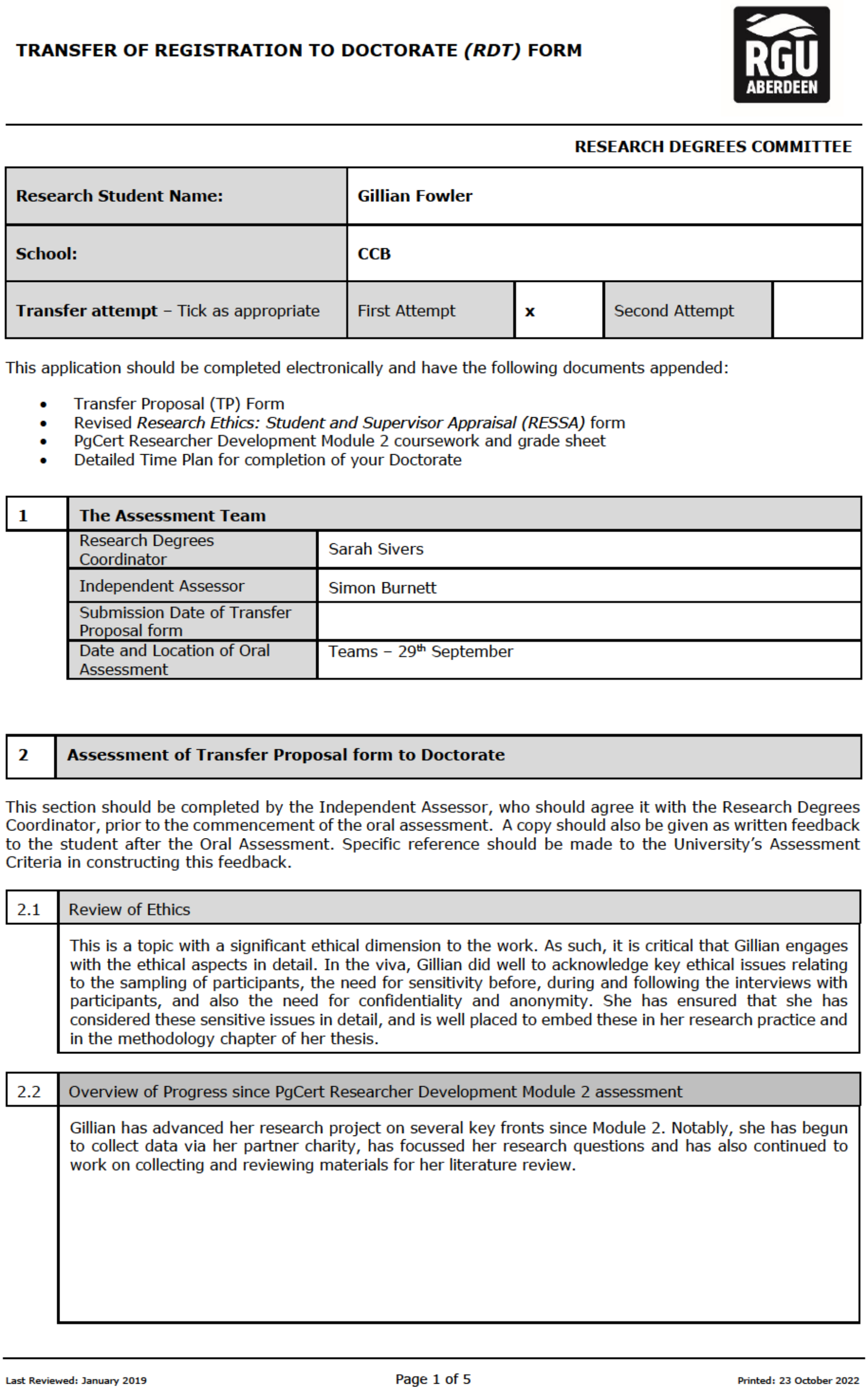
SamH (Scottish Association of Mental Health) - https://www.samh.org.uk/

Best wishes,

Gillian Fowler

Appendix 12

Robert Gordon University RDT form



TRANSFER OF REGISTRATION TO DOCTORATE *(RDT)* FORM

RESEARCH DEGREES COMMITTEE

Research Student Name:	**Gillian Fowler**			
School:	**CCB**			
Transfer attempt – Tick as appropriate	First Attempt	**x**	Second Attempt	

This application should be completed electronically and have the following documents appended:

- Transfer Proposal (TP) Form
- Revised *Research Ethics: Student and Supervisor Appraisal (RESSA)* form
- PgCert Researcher Development Module 2 coursework and grade sheet
- Detailed Time Plan for completion of your Doctorate

1	**The Assessment Team**	
	Research Degrees Coordinator	Sarah Sivers
	Independent Assessor	Simon Burnett
	Submission Date of Transfer Proposal form	
	Date and Location of Oral Assessment	Teams – 29th September

2	**Assessment of Transfer Proposal form to Doctorate**

This section should be completed by the Independent Assessor, who should agree it with the Research Degrees Coordinator, prior to the commencement of the oral assessment. A copy should also be given as written feedback to the student after the Oral Assessment. Specific reference should be made to the University's Assessment Criteria in constructing this feedback.

2.1	Review of Ethics
	This is a topic with a significant ethical dimension to the work. As such, it is critical that Gillian engages with the ethical aspects in detail. In the viva, Gillian did well to acknowledge key ethical issues relating to the sampling of participants, the need for sensitivity before, during and following the interviews with participants, and also the need for confidentiality and anonymity. She has ensured that she has considered these sensitive issues in detail, and is well placed to embed these in her research practice and in the methodology chapter of her thesis.

2.2	Overview of Progress since PgCert Researcher Development Module 2 assessment
	Gillian has advanced her research project on several key fronts since Module 2. Notably, she has begun to collect data via her partner charity, has focussed her research questions and has also continued to work on collecting and reviewing materials for her literature review.

Last Reviewed: January 2019

Page 1 of 5

Printed: 23 October 2022

2.3 Statement of Originality and Impact

This is an original and potentially highly impactful topic for research, for which Gillian has shown a high degree of commitment and passion. It is anticipated that the results of Gillian's work could make a significant impact to those affected by spinal conditions, enhancing their quality of life and highlighting areas for changes in practice. The results will potentially have implications for global practices relating to both the mental and physical wellbeing of those affected by spinal injury.

2.4 Feasibility

(a) Time Plan

Gillian's timescale is logical and feasible. She may find it useful to breakdown some of the activities into more detail, for example, by including sampling and time for data analysis.

(b) Feasibility of Research Methods

Gillian's methods are highly appropriate to the phenomenological nature of the study. She has done well to negotiate and secure access to participant data via her partner charity.

(c) Evaluation of Risks

Gillian has identified a variety of low and medium level risks. These are in keeping with any qualitative project and primarily relate to participation. She has shown a good understanding as to how these risks may be mitigated, and how these might be addressed should the need arise.

2.5	Please confirm that the Transfer Proposal was satisfactory	[✓ **Yes**]	**No**

3 Assessment of Student Oral Assessment for Transfer of Registration to PhD

This section should be completed by the Independent Assessor, who should agree it with the Research Degrees Coordinator. A copy should also be given as written feedback to the student after the Oral Assessment. Specific reference should be made to the University's Assessment Criteria in constructing this feedback.

3.1	Please provide written feedback on the student's oral assessment. Identify any areas of knowledge and skills that require further development or enhancement. Specific reference should be made to the University's Assessment Criteria in constructing this feedback.

Gillian did very well in her oral assessment. She was able to provide a clear, well-structured case for her research, and did so in a way which was comprehensible to an audience with varied understanding of the topic.

Gillian was able to handle a range of pertinent questions in a calm and considered manner, which will stand her in good stead for the viva.

Gillian will benefit from continuing to develop and enhance her presentation and related viva skills prior to her formal assessment. In addition, any published outputs produced in advance of the viva will further strengthen the work.

3.2	Please confirm that the Oral Assessment was satisfactory	[✓ **Yes**]	**No**

4 Outcome of Transfer Application and recommendation of the Independent Assessor

Having considered all aspects of the research student's transfer application, the Assessment Team recommends the following outcome to the Head of the Graduate School. Please tick as appropriate and sign below.

Fail	
Pass – Transfer to Doctorate be granted	X

Signature of Independent Assessor	[redacted]	Date	26th October 2021

Signature of Research Degrees Coordinator	[redacted]	Date	26/10/21

Note: Students may attempt the transfer process for a second time if they fail at first attempt

5	**Approved by the Head of the Graduate School**

On behalf of the Graduate School, I am satisfied that the evidence provided demonstrates an appropriate outcome for this transfer application.

Signature		Date	

Appendix 13

Reflexive notes to accompany transcripts – M3

Any identifiable notes removed to protect anonymity and confidentiality

Phase 2 interview:

M3 somewhat quieter, bit nervous at first but soon relaxed into session as discussion flowed, share of spinal history and empathy. Friendly and willing to discuss, M3 shared their experiences of mentoring, their reason for engaging in the program, highlighting the limitations of the match, yet were still appreciative of having someone to speak with. Their facial expressions sometimes did not quite match what was being said, as if trying to stay more upbeat yet the language used revealed some frustrations (for instance, age relevance to mentee), but also the positives, where they do feel there was as level of support that was needed and helped.

Their mentoring sessions have assisted in looking to the future, yet when discussing this aspect, they tended to look down and looking as if deflated. Yet when discussing the support around them, this brought smiles and a discussion of particular people, what was good, what were the limitations, yet always sounding positive, appreciative, and told of their thanks and the need of such support. Complete disconnect with others in similar situation brought sadness to the conversation, using words 'isolation', 'alone', 'misunderstood'.

There were tears and emotional pain when recalling the accident (details to remain confidential), which they wished to share. The details were graphic, with the injuries being life-changing and horrific on many levels. The tears were not about the injuries themselves but how they now look at themselves, their body image and what they think others may see, especially those closest, or potentially in the future. There is hurt and grief of the old life, though very clearly wants to move forward and talked of what the future could look like, including job, life, and opportunities. M3 has a lot to process, and the mentoring did help but gave focus to the emotions of the injuries and life that they thought they had processed with a psychologist, and in need of further support.

M3 is happy to have spoken to the mentor, but it was believed the match was not right and as such limited, and they felt disconnected, and have since sought further medical assistance to move forward. They have a desire to be more active, and this had reduced greatly during the mentoring time but they believe that was coincidental as they were also struggling with physicality. They are now making more effort to do more walking and swimming, to push aside any negative thoughts of how they look, instead focus on the benefits. M3 spoke about and tended to point or touch the areas on their body that they struggle with, and the impact it is making to how they see themselves. M3 did share the frustration yet acceptance that their body becomes very tired quickly as a result of exercise, but they are hopeful this will improve in time, and smile when they talk about increasing activity and also with friends.

It was interesting to see that initially looked a bit uncomfortable when talking about themselves, thoughts, and emotions, but with gentle questioning, they did open up, and shared out of choice very personal information, outwith the area of questioning. The level of share came from a place of trust, and this was highlighted when they sent numerous pages of personal reflection by email, highlighting the help interview discussion has given, as well as the complimentary session. Links to further support was sent to M3, with medical route highlighted for particular aspects. M3 shared gratitude, hope and relief for the help and the discussion that was had, which moved outwith the direct questions but still relevant to the injuries sustained.

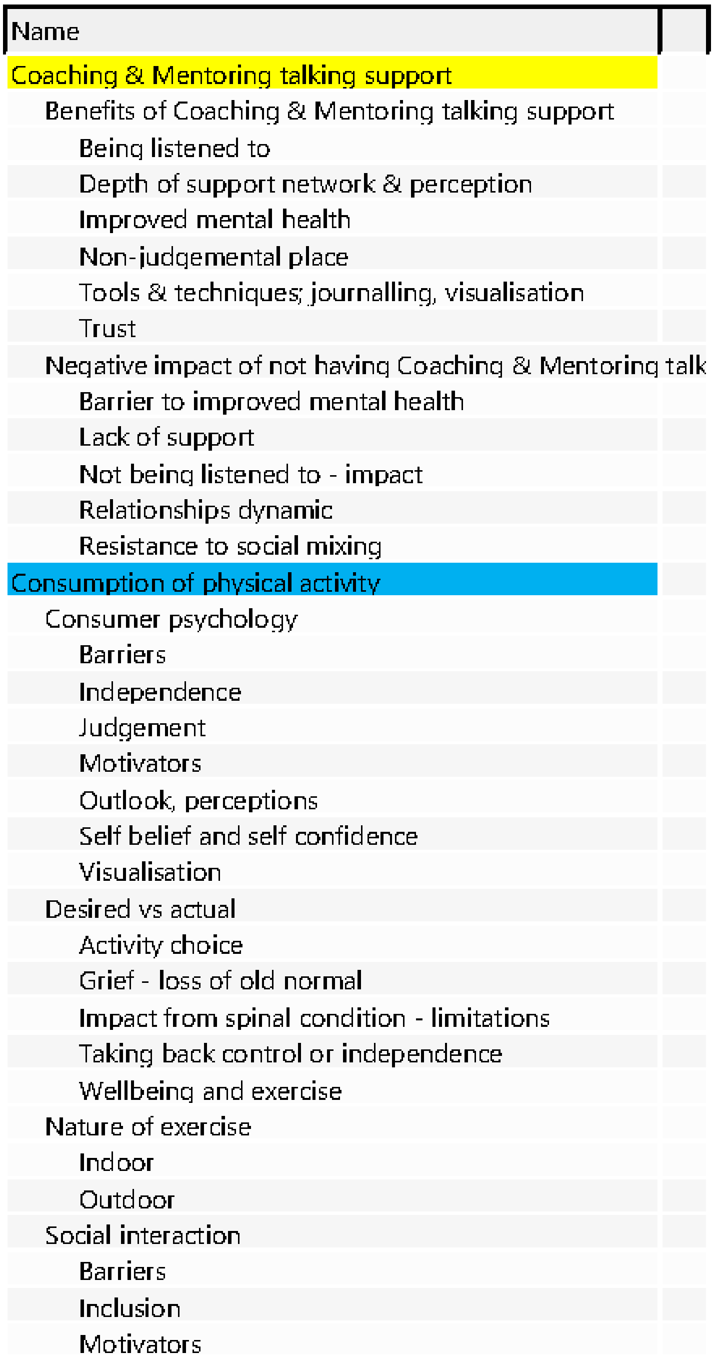
Overall, there were tears, sadness, grief, yet also hope and happiness depending on questions. It was a rollercoaster of emotions based on the questions asked and the subsequent discussions. M3 shared graphic details of injuries and impact to bodily function and life, yet showed strength, determination, as well as the want and desire to get back more active. M3 speaks with a strong, clear voice as they connect their mental health management to exercise, and say this is helping them manage their emotions and thoughts, whilst also being more social. Trust is also building with new people, and this means a lot to M3 as they are conflicted between injuries and being treated as themselves, yet smiles proudly when giving examples of the positive changes.

Complimentary coaching session followed this interview. No notes to be shared from this.

M3 shared personal reflection some weeks after the interview and coaching session had passed, providing rich data on further emotions, thoughts, perception and lived experiences.

Appendix 14a

Codes and themes, August 2022



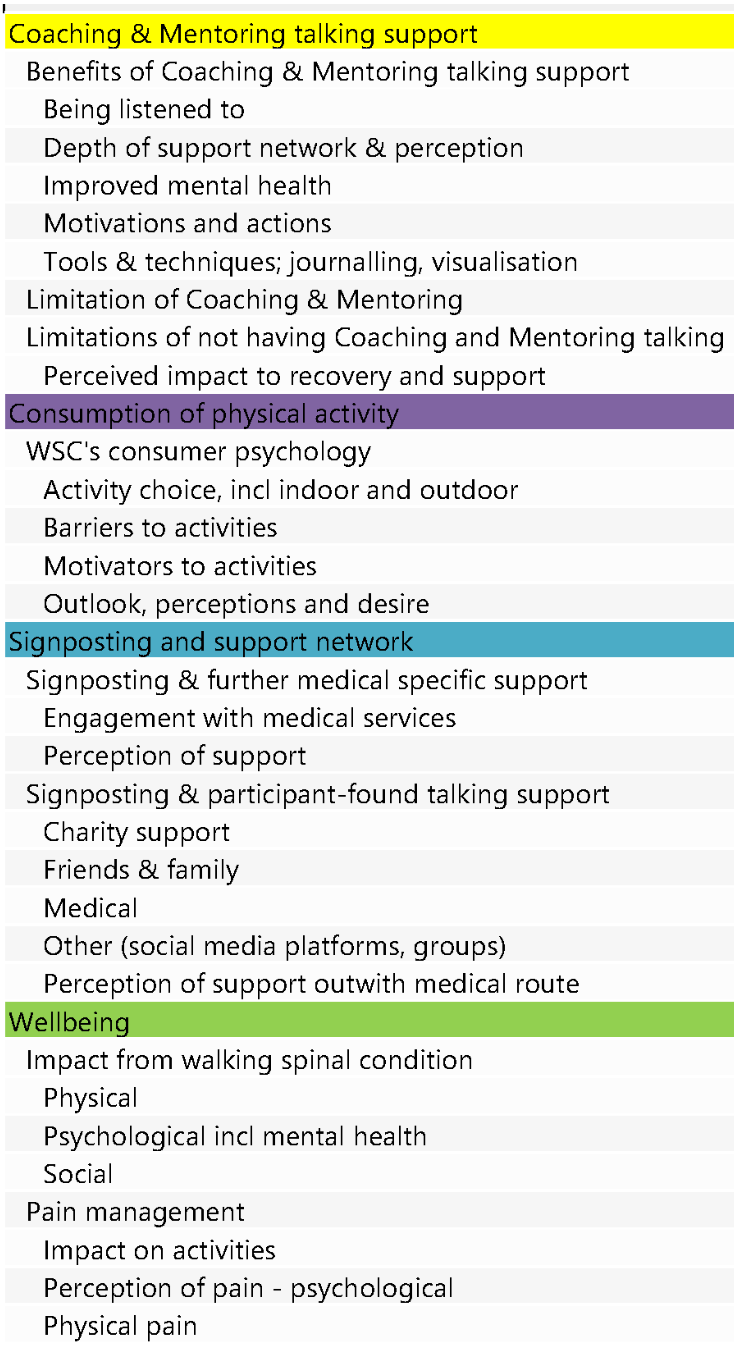
Name

- Coaching & Mentoring talking support
  - Benefits of Coaching & Mentoring talking support
    - Being listened to
    - Depth of support network & perception
    - Improved mental health
    - Non-judgemental place
    - Tools & techniques; journalling, visualisation
    - Trust
  - Negative impact of not having Coaching & Mentoring talk
    - Barrier to improved mental health
    - Lack of support
    - Not being listened to - impact
    - Relationships dynamic
    - Resistance to social mixing
- Consumption of physical activity
  - Consumer psychology
    - Barriers
    - Independence
    - Judgement
    - Motivators
    - Outlook, perceptions
    - Self belief and self confidence
    - Visualisation
  - Desired vs actual
    - Activity choice
    - Grief - loss of old normal
    - Impact from spinal condition - limitations
    - Taking back control or independence
    - Wellbeing and exercise
  - Nature of exercise
    - Indoor
    - Outdoor
  - Social interaction
    - Barriers
    - Inclusion
    - Motivators

- Pain management
  - Impact on daily life
    - Inclusion
    - Perception of pain
    - Physical pain
    - Psychological pain (mental health)
  - Impact on exercise
    - Inclusion
    - Perception of pain
    - Physical pain
    - Psychological pain (mental health)
  - Medical guiance and further support
    - Access to further info
    - Being listened to
    - Medicinal route
    - Physical rehab (Gap)
- Signposting and support network
  - Signposting & further medical specific support
    - Lack of education or knowledge of condition
    - Lack of in-place support
    - Not listened to
    - Perception of support
  - Signposting & participant-found talking support
    - Charity support
    - Friends & family
    - Medical
    - Other (social media platforms, groups)
    - Perception of support
- Wellbeing
  - Impact from walking spinal condition
    - Acceptance of physical changes
    - Feeling lost
    - Grieving, loss
    - Isolation, alone
    - Misunderstood
    - Relationships
    - Security
    - 'Still me', new normal
  - Learned tools and techniques
    - Motivation, determination
    - Short and long term relationships
    - Work, uni - professional commitments
  - Overall mental health impact
    - Group work
    - Leaflets
    - Online information
    - Self-guided courses

Appendix 14b

Codes and themes, October 2022



- Coaching & Mentoring talking support
  - Benefits of Coaching & Mentoring talking support
    - Being listened to
    - Depth of support network & perception
    - Improved mental health
    - Motivations and actions
    - Tools & techniques; journalling, visualisation
  - Limitation of Coaching & Mentoring
  - Limitations of not having Coaching and Mentoring talking
    - Perceived impact to recovery and support
- Consumption of physical activity
  - WSC's consumer psychology
    - Activity choice, incl indoor and outdoor
    - Barriers to activities
    - Motivators to activities
    - Outlook, perceptions and desire
- Signposting and support network
  - Signposting & further medical specific support
    - Engagement with medical services
    - Perception of support
  - Signposting & participant-found talking support
    - Charity support
    - Friends & family
    - Medical
    - Other (social media platforms, groups)
    - Perception of support outwith medical route
- Wellbeing
  - Impact from walking spinal condition
    - Physical
    - Psychological incl mental health
    - Social
  - Pain management
    - Impact on activities
    - Perception of pain - psychological
    - Physical pain

Appendix 15

Reflexive thematic analysis – personal log

Data from the qualitative interviews were analysed using reflexive thematic analysis (Braun & Clarke, 2018), whereby the captured experiences, thoughts, emotions, and perceptions of all participants enabled a rich, deep understanding of the subject matter (Alharahsheh & Prius, 2020). However, I am also very aware that the topic is one that is subjective, personal, and therefore represents an individual's own truth (Ryan, 2018), as opposed to giving a generalisation to the population as a whole. Yet, it is through this subjectivity that I was able to further explore further, with the semi-structured interviews allowing the flexibility to delve deeper on what was discussed, providing a safe platform for participants to share their own lived experiences (Sweet et al, 2021). As such, the six phases of reflexive thematic analysis by Braun & Clarke (2018) were applied:

Stage 1: familiarisation of dataset

Due to the extensive literature research, the development of interview questions, and the direct engagement with mentees, coachees and neutrals in Phase 2, there was already a high level of immersion in information surrounding this subject area. An emotive topic (Rutakumwa et al, 2020), one that involved sustaining a traumatic spinal injury, the dataset was given context by keeping additional reflexive journal on not just the words, emotions, and thoughts, but also how participants managed the interviews, giving context to answers rather than purely reading transcripts without a larger understanding given. Discussions and sharing of personal stories enriched the data gathered, and I believe would not have been possible without the qualitative approach used, as one-to-one interviews allowed a safe environment for participants to be open, honest and share their views fully (De La Croix, Barrett & Stenfors, 2018). As such, it was important that I took time to read over and reflect on all the transcripts and notes gathered for mentees, coachees and neutrals, and this allowed me to feel familiar with all the data before moving to analysis. My repetition to review, read every word, and compare to the reflexive journals / notes resulted in patterns being observed which may have been overlooked, and to which are brought into the discussions with the view of enhancing academic knowledge.

Stage 2: coding

As part of the analysis, all datasets were reviewed by me both manually and by using software NVivo, generating initial codes, each of which highlighting areas of interest or importance. The first round was a slow process and was undertaken manually, marking up the transcripts with colour coding and notes, pulling all the data together and generating relevant initial codes to assist in giving meaning to the data. Codes were then compiled into a Word document to give a separate reference document, without all the busyness of the full dataset, and instead to examine what was gathered and how this can be improved upon should there be overlap, or where phrases as opposed to short codes were used. This further manual process proved very helpful in simplifying what was becoming a long, complicated list, giving me fresh perspective on what I was looking at. Discussion with the supervisory team helped to give understanding of process, and to avoid being guided by bias and instead to let the data guide coding.

NVivo was then used, and assisted in giving a more visual element, helping in reviewing and analysing what was first being populated. It became apparent that when running reports for repetition of words there was a large pool of codes, with numerous words being used in phrases rather than being succinct. To assist in further analysis, further review cycles took place, twice manually and one further in NVivo to tighten the coding generated for this research. The codes were compiled into a Word document to give a separate reference document, without all the busyness of the full dataset, and instead to examine what was gathered and how this can be improved upon should there be overlap, or where phrases as opposed to short codes were used. This proved very useful to move forward. Furthermore, to ensure no bias, this stage and the following three stages, were also reviewed independently and jointly discussed with one of the supervisors within the research team.

Stage 3: generating initial themes

Following the initial coding now being complete, I look for larger patterns and examined these further. Initial themes were generated as part of examining the codes, thus organised in a way that brings sense (Braun & Clarke, 2018) to what participants shared of their relevant own experiences of living a life with a walking spinal condition. I further referred to my reflexive journal for additional information, making sure no data was overlooked, and to challenge my own thinking on the themes so that it was the data that was the driving force of the analysis, not my own perception. Challenging myself in such a way enabled to look beyond initial thoughts on themes and to see a larger picture, where the emotional responses could also be captured, not just the words themselves. To ensure any bias was addressed and removed, I discussed the findings with a member of the supervisory team, where I gave reasoning for the themes and sub themes proposed at this stage, and underpin the trustworthiness (Birt et al, 2016). This was presented as a mind map, or thematic map given the purpose, and was manually drawn out on a bit of paper to assist this process, and then another table created to populate how these themes could be mapped out for discussion. The supervisor was patient, and challenged the work presented, with themes and sub themes becoming more granular in detail.

Stage 4: developing and reviewing themes

The initial themes were now developed further, and aided by considering not only are the candidates' data applied to the themes, but also the dataset as a whole (Braun & Clarke, 2022, online). At this stage, the themes were further analysed and developed to ensure they were indeed relevant and addressed the research question. This also resulted in codes being analysed once more, as the patterns of groupings became more apparent. The focus of the thematic mapping became the table drawn in Word, with themes and sub themes clearly listed, showing relevance for each. With any interpretation, the data could have been described in several ways, with themes and sub themes inter-changeable, or being worded differently. As such, through the subsequent review cycles, themes were discarded, combined or split, and the supervisory team as a whole proved invaluable source of support and guidance in discussing the proposed thematic table.

Stage 5: refining, defining, and naming themes

Through the process of developing and reviewing themes, there were clear overlaps which required themes to be refined further, while mindful of the relevance around the research question. As part of this process, discussions were had with the supervisory team during in-person meeting, discussing the dataset, coding and themes generated to date, and how to bring further clarity to themes and sub themes. As such, through the subsequent review cycles, themes were discarded, combined or split, and the supervisory team as a whole proved invaluable source of support and guidance in discussing the proposed thematic table. Given my own personal experience of sustaining a traumatic spinal injury, it was essential themes remained unbias, and avoid pushing data in any direction that fitted with my outlook as opposed to data driven. Hence the discussion with my supervisory team was important to challenge, test and advance the output, with one member of the team in particular having depth of experience and ensured consistency and engagement of reflexive thematic analysis process.

Stage 6: writing the report

Each theme would become sub chapters of the Analysis chapter, and it was important to be able to guide the reader through the data, which is underpinned by the richness of quotations and information from the participants. It would have been very easy to go off on a tangent as there was so much data available, so having a clear plan on what to discuss, how to articulate and ensure alignment to aims and objectives aided the writing of the report. The report was given further support through the referencing of literature, and a rethink was required as to how best to discuss any measurements, instead ensuring the qualitative led the results section.

Appendix 16

Impact of spinal condition – examples of psychological topics and referencing

Isolation	C1: *'feeling of isolation, being misunderstood, and alone on this journey'* C2: *'I felt so sad and alone', 'I felt very isolated', 'my recovery was one that felt very lonely, lost and I felt very scared'* N2: *'struggled with feeling low, isolated'*
Frustration on communication / approach from others / misunderstanding condition	C1: *'used to people asking about my pain or injury and that just makes me think of it more… I don't want to focus on those areas.'* C2: *'it seems there was a disconnect or misunderstandings as to what this means to someone', 'I found it rather infuriating and very sad that just because I still had the ability to walk that there should be the perception that somehow I should not require any assistance, and to recover at home'* M1: *'I'm angry at perception of and from others, people making decisions for me', 'I don't want to be labelled or reminded about my injuries, I want to be treated as normal'* M3: *'lasting effects of perception of judgment, shame'* N1: *'The pressure put onto a person with an invisible illness is way beyond the grasp of someone that is able bodied'*
Mental health and health challenges	C1: *'the accident changed a lot, and the ongoing pain and what I thought were limitations were so hard to work through'* C2: *'I felt so sad and alone', 'I have struggled with having a foggy brain, my thoughts getting all muddled, and I also felt overwhelm after my accident', 'I did have a real mental battle. I feel my mental health has been poor for far longer than the physical recovery time. Healing takes time, I couldn't rush it. But it was annoying at times. Fun times seemed lost or at least a memory. I struggled with that'* C4: *'my mind was an obstacle, not necessarily pain or ability'*

	M1: *'I'm at sea emotionally. There's no guidance, head is a right mess', 'made me question my purpose'* M2: *'I was struggling with who I was' 'missing part of self', 'don't seem the same person as before', 'I was scared, afraid of what my future life might be, and remember thinking after my surgery this is not my life now, I didn't know who I was anymore'* M2: *'I hated not feeling in control of my body and my life' 'will it ever get better?', 'frustrated at unknowns', 'so many unknowns, I don't know the next steps', 'is this as good as it gets? Haven't got a resolution'* M3 – *'I was situationally miserable (not being able to leave the house independently, didn't have the energy to walk around the block or do anything creative, felt there was no future, didn't see friends for nearly a year), but the counsellor's way of phrasing it made me feel like I was then wrong for feeling unhappy and I think some validation of the difficulty of the situation would have helped', 'A big strain was the extra financial cost of transport and medication and private physio appointments, combined with the shame that I wasn't sure how I would ever earn money again'* M5: *'I'm not in a very good place at the moment. My living conditions has developed, I have deterioration on my mental health', 'at least if I'm dead then I won't be in any more pain and people wouldn't have to keep here me moaning', 'I'm living a real life nightmare'* N1: *'I had a nervous breakdown', 'I think my emotions have been on a rollercoaster ride from day one', 'Let down, after let down, drives a person to insanity. That downward spiral of inevitability of helplessness and hopelessness'* N2: *'I sometimes didn't know how to manage, it pulled me down', 'the first years were dark'*
Grief for old life	C2: *'At times I felt I was grieving for my old life', 'less exercise impacted wellbeing, it was better before accident'*
Medication for moods	C4: 'it took me years to come off all my meds, I felt they made me grumpy or not me. And then I was just pretty low' M5: *'prescribed a mood stabilising drug'* N2: *'doctor offered anti depressants, they made me feel sick'*

Healing and other talking support offered	C2: *'had counselling early days as I felt traumatised'* C4: *'I had counselling but I didn't know about this other support until friend said'* C5: *'I have healed physically, maybe mentally needs work but I am positive'* C6: *'only got offered counselling as I struggled with mental health for a while'* M1: *'I was offered psychologist appointments, programs, counsellors'* M2: *'health care professionals noticed I was struggling with what happened and I was put in touch with a charity'* M3: *'(saw) a counsellor… up to 8 sessions'* M4: *'In the spinal unit, I spoke to an Aspire (charity) person who was very helpful'* N1: *'speaking to the psychiatrist certainly helped with me processing the events'*
Hiding true feelings	C5: *'I do think of myself as a positive person but I think it was getting me down more than I was letting on as I now feel so good.'* M1: *'it's like I'm not allowed to have negative feelings or say how I feel'* M5: *'I try holding back the tears of pain so my family don't see me suffering'*
Outlook for future (quote from each participant)	C1: *'mentally, I'm in a better place, my mental health is stronger', 'I thought I was doing well before but now I see it'* C2: *'I am very much looking forward now, not back'* C3: *'I am totally on point to continue on the same track. I am proud, I feel I am building up momentum'* C4: *'(I was) down on myself and life before, I now am trying to do more'* C5: *'equipped me to make the changes I wanted and needed … But I am more willing to give things a try'* C6: *'I know how to move forward with what I want'*

	M1: *'I hope to feel better, and get ongoing help'* M2: *'figuring out how I am now and what's important', 'I am very grateful'* M3: *'it makes it feel more manageable'* M4*: 'getting active has helped me cope'* M5: *'I have no quality of life at all and I hate being here', 'I'm far worse now than what I was when I was discharged'* N1: *'this (coach session) came along funnily enough just at the right time for me… kickstarted my recovery', 'I believe this has helped me become more positive due to being able to think better'* N2: *'planning on joining more activities, to build up and meet others'* N3: *'life changed for some time, it was more limiting for years, but much better now'* N4: *'I'm still processing … but I feel I am finding the real (me) again', 'our (coaching) session has most definitely helped now and for my future'*