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**Psychological Wellbeing Following Miscarriage**  
**From a Salutogenic Perspective**

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A thesis submitted in partial fulfilment of the requirements of the Robert Gordon University for  
the degree of Doctor of Philosophy July 2016

**Dedicated in memory of Mike Rennie**

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## **Abstract**

Anne Marie Rennie

### **Psychological Wellbeing Following Miscarriage from a Salutogenic Perspective: A thesis presented for the degree of Doctor of Philosophy.**

Previous research into the psychological impact of miscarriage has taken a pathogenic approach, with limited research examining the factors that relate to enhanced psychological wellbeing. As a result it is difficult to understand what predicts lower anxiety, depression and higher wellbeing. In order to address such gaps this study employed mixed methods, using a salutogenic perspective to investigate the effects of miscarriage on women's psychological wellbeing and to identify factors related to enhanced psychological wellbeing over time. Results from a comparative study indicated that women without miscarriage had statistically significantly higher wellbeing, lower anxiety and depression, and were more likely to be non-cases for anxiety and depression. A prospective longitudinal study with miscarriage women further revealed that depression and wellbeing improved significantly over time but anxiety levels remained heightened, even at 13 months post-miscarriage. Protective factors related to lower anxiety, lower depression or higher wellbeing included; less major life events, high satisfaction with experience of healthcare provision, internal health locus of control, higher perceived social support, coping style and resilience. Lower self-blame was the strongest predictor of anxiety and depression non-cases, whilst higher resilience was the strongest predictor of wellbeing. Interestingly, previous reproductive history and current reproductive status were not related to psychological wellbeing. These findings were reinforced in the in-depth semi-structured interviews with miscarriage women, whereby the ability to express emotions by talking to others about miscarriage, having a plan of action and not self-blaming positively influenced women's psychological wellbeing. Whilst women were generally satisfied with care received from healthcare professionals, there was a desire for more compassionate care and follow-up. These findings inform the development of interventions to enhance psychological wellbeing post-miscarriage. Further research should examine if a reduction in self-blame reduces anxiety, and whether resilience training increases wellbeing.

## **List of Abbreviations**

ANOVA	Analysis of Variance
BDI	Beck Depression Inventory
BMI	Body Mass Index
CD-RISC 10	Connor-Davidson Resilience Scale
CES-D	Centre for Epidemiological Studies Depression Scale
CG	Comparative Group
CHLOC	Chance/fate Health Locus of Control
CQ	Comparative Questionnaire
CSQ	Coping Style Questionnaire
EPAU/S	Early Pregnancy Assessment Unit/s
FAE	Freepost addressed envelope
FET	Fisher's Exact Test
GHQ-12	General Health Questionnaire
GP	General Practitioner
HADS	Hospital Anxiety and Depression Scale
HLOC	Health Locus of Control
IHLOC	Internal Health Locus of Control
IQR	Interquartile Range
ISD Scotland	Information Services Division Scotland
LOC	Locus of Control
MBRRACE-UK	Mothers and Babies: Reducing Risk through Audits and Confidential Enquiries across the United Kingdom
MD	Median Difference
MG	Miscarriage Group
MHLOCS	Multidimensional Health Locus of Control Scale
MLE	Major Life Events
MRC	Medical Research Council
MSPSS	Multidimensional Scale of Perceived Social Support
N	Number of Participants
NHS	National Health Service
NICE	National Institute for Health and Care Excellence
NMC	Nursing and Midwifery Council
NRES	National Research Ethics Service
PGBQ	Prospective Group Baseline Questionnaire
PG6MQ	Prospective Group 6 Month Questionnaire
PG13MQ	Prospective Group 13 Month Questionnaire
PGS	Perinatal Grief Scale
POHLOC	Powerful Others Health Locus of Control
RCOG	Royal College of Obstetricians and Gynaecologists
RCM	Royal College of Midwives
RCT	Randomised Controlled Trial
SD	Standard Deviation
SIGN	Scottish Intercollegiate Guidelines Network
SIMD	Scottish Index of Multiple Deprivation
SOC	Sense of Coherence
SPSS	Statistics Package for the Social Sciences
SRHC	Sexual and Reproductive Healthcare Centre
UK	United Kingdom
WEMWBS	Warwick-Edinburgh Mental Wellbeing Scale
WHO	World Health Organisation



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## **CHAPTER 1**

### **BACKGROUND TO MISCARRIAGE**

There is a wide range of published literature and research focusing on women's psychological distress following miscarriage. However, there has been a substantial lack of research examining how women enhance their wellbeing following miscarriage. Chapter 1 presents the background to miscarriage.

#### **1.1 Miscarriage**

In the United Kingdom (UK), the definition of miscarriage is the loss of the products of conception prior to the completion of the 24<sup>th</sup> week of gestation, with an early pregnancy loss defined as one that occurs before the 12<sup>th</sup> completed week of pregnancy (Royal College of Obstetricians and Gynaecologists, RCOG 2006); the definition of miscarriage, however, varies throughout the world. For example, the definition of miscarriage in Australia is if it occurs at or before 20 weeks gestation (Queensland Government 2011), whilst the World Health Organisation (WHO) define it as up to 23 weeks of pregnancy and weighing up to 500g (WHO 2001). Even within Mothers and Babies: Reducing Risk through Audits and Confidential Enquiries across the UK (MBRRACE-UK; National Perinatal Epidemiology Unit 2012) now include women who experience late miscarriage between 22 to 23 weeks and 6 days or earlier if the birth weight is 500 grams or above, which suggests that babies at this gestation are being considered as viable. As a consequence there is no standard agreed definition of what is a miscarriage.

Miscarriage is a common experience. It is estimated that miscarriage affects 20% of all clinically recognised pregnancies (National Institute for Health and Care Excellence; NICE 2012) and 25% to 50% of women (Rai and Regan 2006) over their reproductive lifetime. Up to 85% of miscarriages occur in the first trimester (1-12 weeks), with approximately 1-2% of 2<sup>nd</sup> trimester (12-23+6 Weeks) pregnancies resulting in miscarriage (RCOG 2011).

In Scotland in 2011, 5649 women were admitted to a National Health Service (NHS) hospital with miscarriage, indicating a rate of 5.3 per 1000 women aged 15-44, and in Grampian, 995 were treated, indicating a rate of 8.7 per 1000 women aged 15-44, (Information Services Division (ISD) Scotland 2013). This is an underestimate of the actual rate of miscarriage, as some women do not require hospital admission for miscarriage (Everett 1997), whilst others are unaware that they have experienced a miscarriage and these losses are therefore unreported. In a study undertaken prospectively in couples who were actively trying for a pregnancy, results demonstrated that the rate of early pregnancy loss based on urinary Human

Chorionic Gonadotrophic Hormone levels was as common as 31%, with 22% of these ending before the pregnancy was clinically recognised (Wilcox et al. 1988).

### **1.1.1 Miscarriage diagnosis and care**

Recent research led to a change in the miscarriage care pathway with a move to expectant management, then a wait and re-scan after 7-14 days, to avoid inadvertent termination of wanted pregnancies, as a counterbalance for the risk in misdiagnosis (Abdallah et al. 2011). The support needs of women during this period between scans are largely unknown; however, NICE (2012) recommend that all women have access to an Early Pregnancy Assessment Unit (EPAU), which should provide 24 hour access to telephone advice.

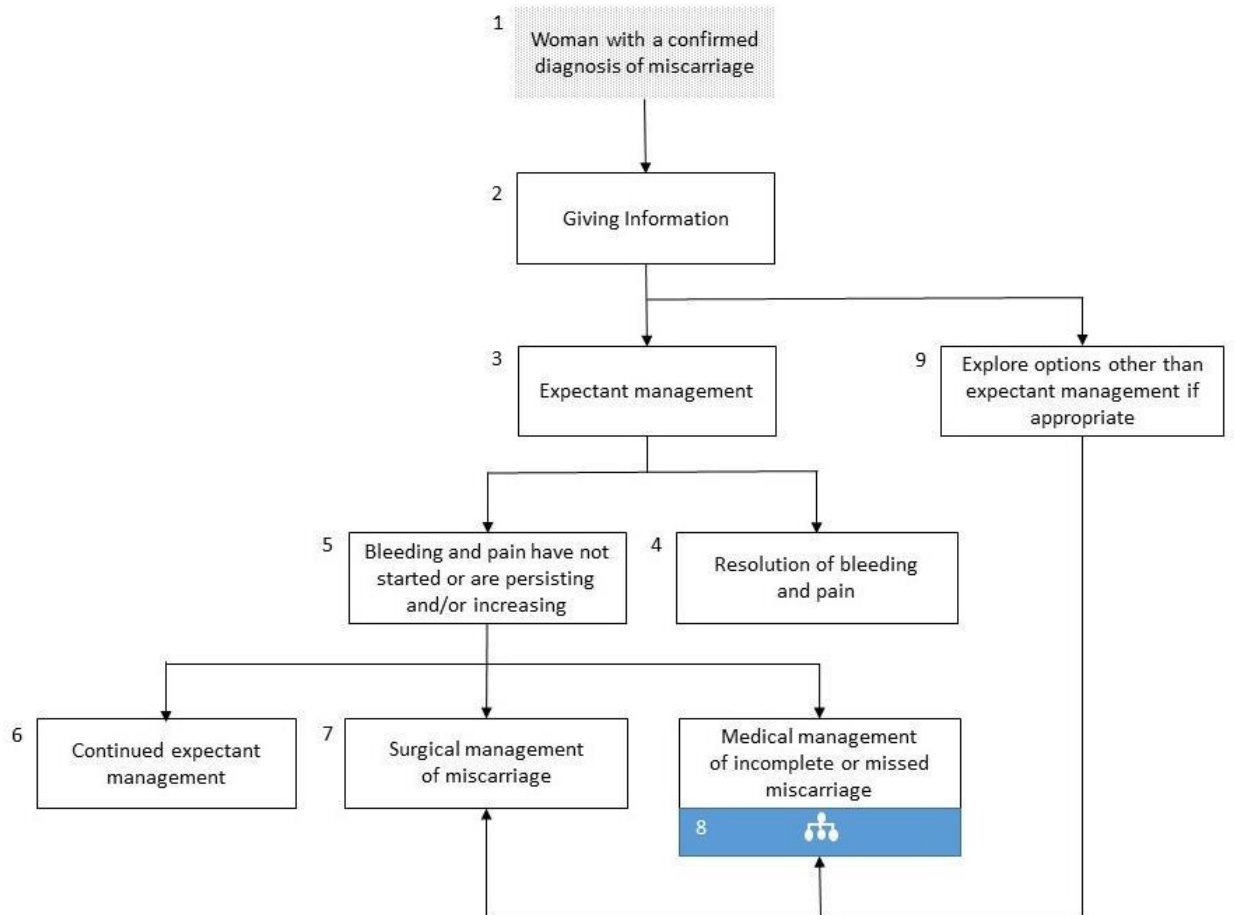
### **1.1.2 Management and treatment for miscarriage**

An improvement in the diagnosis and management of early pregnancy loss, in order to reduce the incidence of psychological morbidity, has been called for (NICE 2012). The first National Health Service (NHS) guideline on miscarriage care raises the importance of the need for sensitive and supportive care, placing considerable emphasis on the need for effective emotional support, quality information giving and the offer of follow-up support for women (NICE 2012). Regional EPAUs which are available 7 days a week for women with early pregnancy complications are recommended, with access to ultrasound scanning, specialist care (NICE 2012), and informational support (Twigg et al. 2003).

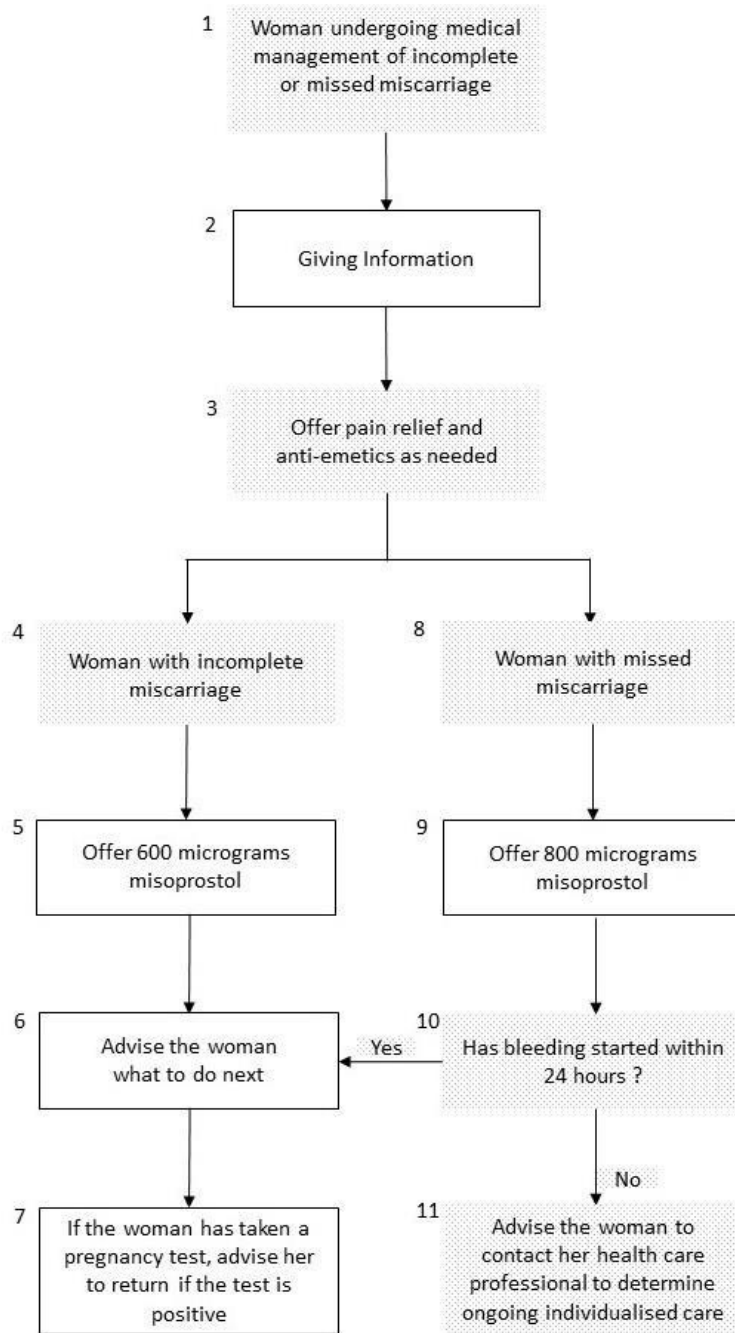
Attention to sensitive and woman-centred terminology has been recommended (Farquharson, Jauniaux and Exalto 2005), as the term abortion is associated with the deliberate ending of a pregnancy, recommending miscarriage in preference to spontaneous abortion. In order to meet national recommendations on terminology for early pregnancy loss, clinicians should not only say 'miscarriage' but also write it (Cameron and Penney 2005). Kolte et al. (2014) suggest pregnancy loss should be classified into non-visualized pregnancy loss, early miscarriage, fetal miscarriage, ectopic pregnancy or stillbirth, to enable meaningful comparison between scientific studies. Whilst these steps may provide evidence of significant developments, there is more needed to fully influence patient's experience of healthcare following miscarriage (Moscrop 2012).

The following diagrams have been reproduced with permission from NICE, and demonstrate the management and treatment for miscarriage. As shown in Figure 1.1 and Figure 1.2 the recommended management for women with a confirmed diagnosis of miscarriage and for those with incomplete or missed miscarriage (early fetal demise), include individualised care (NICE 2012) and the management and treatment of women's physical care; however the

holistic approach to include psychological care is not evident. There is currently no guidance on psychological care.



**Figure 1.1: Confirmed diagnosis of miscarriage care pathway (NICE 2012)**



**Figure 1.2: Medical management of incomplete and missed miscarriage care pathway (NICE 2012)**

### **1.1.3 Types of miscarriage**

Miscarriage has been classified into three main categories; complete miscarriage, threatened miscarriage and missed, silent or delayed miscarriage (early fetal demise).

#### **1.1.3.1 Complete miscarriage**

A complete miscarriage is where all of the products of an early pregnancy have been expelled and the uterine cavity is empty, and does not require any active management (Crafter and Brewster 2014).

#### **1.1.3.2 Threatened miscarriage**

Threatened miscarriage is manifested by vaginal bleeding, with or without abdominal pain, while the cervix is closed and the fetus is viable and inside the uterine cavity (Crafter and Brewster 2014). Treatment for threatened miscarriage includes progestogen, which has been shown to reduce the risk of spontaneous miscarriage, but the evidence is limited (Wahabi et al. 2011).

#### **1.1.3.3 Missed, silent or delayed miscarriage (early fetal demise)**

Missed, silent or delayed miscarriage (early fetal demise) is where bleeding occurs between the gestational sac and the uterine wall, resulting in miscarriage; however the presentation is different in that there is no bleeding. It is defined by the ultrasound appearances of an intrauterine pregnancy with evidence of absent fetal heart activity, and the failure of crown-rump length to increase over 1 week or the persisting presence of an empty sac at less than 12 weeks gestation (Farquharson, Jauniaux and Exalto 2005). Signs of pregnancy may gradually disappear, resulting in some women becoming aware that all is not well, however some will be unaware. The uterus ceases to increase in size and as the presence of the retained fetus inhibits menstruation, women often think that the pregnancy is continuing and diagnosis is made at the routine 12 week dating ultrasound scan.

#### **1.1.3.4 Ectopic**

Ectopic pregnancy occurs when a fertilized ovum implants outside the uterine cavity, often within the fallopian tube. However, implantation can also occur within the abdominal cavity, the ovary or in the cervical canal. The incidence is 11.1 per 1000 pregnancies (NICE 2012), with 6 deaths attributed to ectopic pregnancy in the 2006-2008 Saving Mother's Lives Report (Centre for Maternal and Child Enquiries; Healthcare Quality Improvement Partnership 2011).

### **1.1.3.5 Recurrent miscarriage**

In the UK, recurrent miscarriage, defined as three or more consecutive miscarriages, affects 1% of couples, resulting in referral for investigation in an attempt to find an underlying cause (RCOG 2011). However, this definition is being challenged (Bhattacharya et al. 2008) suggesting that recurrent miscarriage in the UK should be redefined as two or more consecutive miscarriages, as they found that the risk of subsequent adverse pregnancy outcomes does not differ in women with two versus three miscarriages.

## **1.2 Causes or Risk Factors for Miscarriage**

Most women who experience a miscarriage go on to deliver a baby in a subsequent pregnancy. When the cause of miscarriage remains unexplained, there is a 75% chance that a successful pregnancy can be achieved in the future (Clifford, Rai and Regan 1997). However, a previous history of two or more miscarriages (Bhattacharya et al. 2008) is associated with further miscarriage.

The cause of miscarriage is not identified in most cases; however, when investigated, 50% of cases are associated with chromosomal abnormality of the conceptus (Suzumori and Sugiura-Ogasawara 2010). Paternal factors such as poor sperm quality may be a factor, particularly with recurrent miscarriage (Gopalkrishnan et al. 2000).

Late miscarriage defined as loss at 14-23 completed weeks and preterm birth between 24 and 28 weeks gestation have the same pathogenic and socio-biologic risk factors, and are in essence clinical manifestations of the same disease process (Ugwumadu 2010). The main causes of late miscarriage include ascending infection from the lower genital tract, abnormal placentation, immunological interactions, thrombophilia, cervical insufficiency and upper genital tract anomalies (Ugwumadu 2010).

### **1.2.1 Pre-existing medical conditions**

Factors associated with miscarriage include chronic maternal infection such as genital herpes, rubella, pneumonia, toxoplasmosis, cytomegalovirus, listeriosis, syphilis, chlamydia, brucellosis and human immunodeficiency virus (Nigro et al. 2011). Appendicitis in pregnancy with perforated appendix (Ueberrueck et al. 2004), along with other medical disorders such as diabetes, renal disease and hypertensive disorders, have been associated with miscarriage, especially where control is poor e.g. poorly controlled diabetes mellitus (Khaskheli, Baloch and Baloch 2010). Endocrine abnormalities have been associated with miscarriage; these include poor development of the corpus luteum, inadequate secretory

endometrium and reduced production of progesterone by the corpus luteum (Arredondo and Noble 2006).

Thyroid disease, where higher levels of circulating thyroid peroxidase antibodies have been found to be associated with miscarriage (Thangaratnam et al. 2011; Stagnaro-Green and Glinow 2004; Poppe and Glinow 2003).

### **1.2.2 Anatomical abnormalities of the reproductive system**

Among the various congenital structural uterine anomalies, the septate uterus is the most common, increasing the risk of miscarriage due to impairment of implantation (Homer, Li and Cooke 2000). Other uterine anomalies include didelphys (double uterus) and bicornuate uterus (heart shaped uterus). The uterus can fail to develop to the full adult size, and pregnancy in these circumstances often ends in miscarriage (Branch, Gibson and Silver 2010). Some women have a weakness in the cervix due to cervical trauma caused by cone biopsy, forced dilatation, intrapartum cervical lacerations or congenital uterine anomalies (Li et al. 2002), and these can result in later miscarriage or preterm birth. Studies have shown that miscarriage rates are higher in women with uterine fibroids, almost doubling the likelihood in comparison to women without uterine fibroids (Benson et al. 2001).

### **1.2.3 Maternal age**

Factors that increase the risk of miscarriage include maternal age over 34 and paternal age over 40 years (De La Rochebrochard and Thonneau 2002). A large prospective epidemiological study from Denmark found that the risk of miscarriage is 15% or less up to the age of 34 years but increased to 25% at 35-39 years, 51% at 40-44 years, and rises to 50-90% for women aged 45 or more (Nybo Andersen et al. 2000).

### **1.2.4 Body mass index**

Extremes in body mass index (BMI) have been associated with recurrent miscarriage (Lashen, Fear and Sturdee 2004) and miscarriage for women with a high BMI (Boots and Stephenson 2011), and for those with a pre-pregnancy low BMI where fertility is not affected (Maconochie et al. 2007). Poorolajal et al. (2014), however, found no significant association between miscarriage and BMI, concluding that risk factors may vary among different communities.

### **1.2.5 Foods**

A healthy pregnancy may depend as much on pre-pregnancy diet and related body composition as it does on nutrients consumed during the pregnancy (RCOG 2011). The World



Health Organisation recommends not exceeding 3000 micrograms of vitamin A during pregnancy, as it is teratogenic (WHO 1998), consequently foods which contain high levels of vitamin A such as liver, liver pate and fish liver oils should be avoided in early pregnancy, to reduce likelihood of miscarriage. Women are also advised to avoid unpasteurised soft cheeses with a mould rind (such as Brie and Camembert), blue-veined cheeses and pate, as they may contain bacterium listeria, which causes listeriosis and miscarriage (Tommy's 2012). Raw or undercooked meat or cured meats such as parma ham, increase the risk of toxoplasmosis, which may cause miscarriage (Tommy's 2012). Tuna should be limited to no more than two steaks or four cans (of drained weight of 140g) per week, as they may contain levels of mercury which could damage the development of the baby's nervous system, increasing the risk of miscarriage. Shark, swordfish and marlin should also be avoided for the same reason.

### **1.2.6 Caffeine**

A number of studies suggest that caffeine consumption increases the risk of miscarriage (Li et al. 2015, Maconochie et al. 2007; Giannelli et al. 2003). A recent meta-analysis found an association between pregnancy loss and caffeine consumption during pregnancy, suggesting the risk of miscarriage rose by 19% for every increase in caffeine intake of 150mg/day (Li et al. 2015). In the UK, it is recommended that caffeine should be limited to no more than 200mg a day, which equates to two mugs of instant coffee or tea or five cans of cola (National Health Service NHS Choices 2011). Such studies, however, are complicated by the challenge of separating cause and effect (Peck, Leviton and Cowan 2010); controlling for nausea severity and the potential effects of recall bias.

### **1.2.7 Consanguinity**

In cases of consanguineous or cousin marriage, there is conflicting evidence in terms of miscarriage rates. Studies in highly consanguineous world populations show no significant association between fetal loss and consanguinity (Saha et al. 1990), however, other studies have observed higher rates of prenatal losses amongst consanguineous couples (Mokhtar and Abdel-Fattah 2001).

### **1.2.8 Environmental factors**

Environmental factors include over or lasting exposure to some chemicals and metals such as radiation and lead, which cause harm to the pregnancy and can result in miscarriage (Triche and Hossain 2007). Miscarriage has also been associated with flight attendant work during sleep hours, high physical job demands and cosmic radiation exposure (Grajewski et al. 2015). There is some evidence of an association between shift work and early pregnancy loss;

however this is currently insufficient for clinicians to advise restricting shift work in women of reproductive age (Stocker et al. 2014).

### **1.2.9 Drugs and alcohol**

Ingested teratogenic substances, such as drugs (especially cocaine) and alcohol have been associated with miscarriage (Andersen et al. 2012), as a result of the development of aneuploidy or major structural malformations of the fetus (RCOG 2006). In view of this, women planning a pregnancy are advised to avoid drinking alcohol in the first 3 months of pregnancy, due to the increased risk of miscarriage (NICE 2008). However, there is the issue that some women may be drinking alcohol or using drugs while not realising they are pregnant.

### **1.2.10 Smoking**

Studies indicate that exposure to tobacco smoke during pregnancy increases the chances of miscarriage in addition to perinatal mortality, low birth weight and preterm births (Royal College of Physicians 2010), however, research findings remain inconclusive as some research has failed to reveal an association between miscarriage and smoking (Wisborg et al. 2003). In a study of women age 21 years, it was found that those with a history of miscarriage were at increased risk of tobacco dependence and illicit drug use compared to women who had never been pregnant (Dingle et al. 2008).

A two stage postal survey by Maconochie et al. (2007), where women were randomly selected from the UK electoral register, which included women whose most recent pregnancy had ended in a first trimester miscarriage defined as less than 13 weeks of gestation (n=603 cases), and women whose most recent pregnancy had progressed beyond 12 weeks (n=6116 controls), was carried out to identify factors associated with miscarriage. Women were questioned about their socio-demographic details, behaviours and other factors in their most recent pregnancy, with a first trimester miscarriage as the main outcome measure. After adjustment for confounding variables, the factors that were independently associated with an increased risk of miscarriage were high maternal age, previous miscarriage, termination and infertility, assisted conception, low pre-pregnancy body mass index, regular or high alcohol consumption, feeling stressed (including trend with number of stressful or traumatic events), high paternal age and changing partner. Women who reported feeling 'stressed', 'anxious', 'depressed', 'out of control' or 'overwhelmed' in the first 12 weeks of pregnancy had significantly higher rates of miscarriage than those who described themselves as happy, relaxed or in control. Other emotions, which demonstrated increased risk of miscarriage, were guilt and fear (Maconochie et al. 2007).

### **1.2.11 Major life events**

Hamilton Boyles et al. (2000) found that miscarriage at 11 weeks or greater was associated with more life event stress. Whilst Neugebauer et al. (1996) found that 70% women with chromosomally normal losses reported having had one or more negative life event in the months preceding miscarriage, compared with 52% of the women with chromosomally abnormal losses. This suggests that major life events resulting in greater psychosocial stress may be an important factor in the aetiology of miscarriage, or there may be common predisposing factors for both stress and miscarriage e.g. unhealthy lifestyle choices. Hamilton Boyles et al. (2000) for example, found an association between tobacco use and an increased risk of miscarriage.

### **1.3 Preconception Care**

As evidenced above, there is a greater awareness of the multiple factors that can adversely affect early pregnancy. Adverse pregnancy outcomes are often established early in pregnancy, during organogenesis, a period when women are often unaware of their pregnancy (Moos 2003). Visits to healthcare providers such as the General Practitioner (GP), provide an excellent opportunity for evaluation regarding reproductive life choices, health issues and behaviours that could have a significant impact on the outcome of a pregnancy. Indeed, opportunities to increase the health of prospective parents, to ensure that they are at the peak of health potential just prior to and during organogenesis, may enhance the health of the developing fetus (Burden and Jones 2004). Elsinga et al. (2008) found that the rate of adverse pregnancy outcomes (including miscarriage) reduced from 20% of pregnancies in a group of women receiving standard care to 16% in those that received preconception care in the form of counselling. Whilst Feodor Nilsson et al. (2014) found that a reduction in risk factors (including alcohol consumption, lifting of weights above 20kg daily, and night work) before and during pregnancy could lead to 25.2% of miscarriages being prevented.

### **1.4 Summary of Background to Miscarriage**

Miscarriage is common, complex and a unique experience for each individual woman. Despite the relative frequency of miscarriage, it is often unexpected and unseen (Oakley, McPherson and Roberts 1990). Discrepancies in definitions impact on the accuracy of prevalence data worldwide. Indeed, miscarriage is rarely a topic for discussion in Western cultures (Rowlands and Lee 2010a), with evidence that few women share their experiences of loss with younger family members (Cecil 1996). Whilst some women will adjust without distress, and indeed some may feel relief (Maker and Ogden 2003); others will experience the loss with great sadness and grief (Klier, Geller and Ritscher 2002). Whilst follow up is recommended in current

guidelines (NICE 2012), what should be included in the follow up to enhance psychological wellbeing is unclear. This may be due to the limited research that explores how women enhance their psychological wellbeing, as previous studies have taken a pathogenic approach, focusing on the negative impact of miscarriage on women's psychological wellbeing. The pathogenic perspective alone, results in a gap in knowledge. To address this gap, using a salutogenic perspective, this thesis identifies and explores protective factors associated with enhanced psychological wellbeing.

### **1.5 Phase 1 – Determining the Impact of Miscarriage on Psychological Wellbeing**

Phase 1, the quantitative study, aims to determine the impact of miscarriage on psychological wellbeing, and to identify the protective factors associated with enhanced psychological wellbeing. It includes Stage 1 - the comparative study, and Stage 2 - the prospective study.

#### **1.5.1 Stage 1 - Comparative Study: Comparing psychological wellbeing and its moderators amongst women with and without miscarriage**

The overall aim of the comparative study is to increase the understanding of the effect of miscarriage on women's psychological wellbeing, in comparison to women without miscarriage.

Phase 1 Stage 1, aims to examine levels of anxiety, depression and wellbeing in women who have experienced miscarriage, compared to a comparative group of women, who are similar in age and socio-economic status, but without experience of miscarriage. This study also compares health locus of control, perceived social support, coping style and resilience between the groups. The research objectives for the comparative study are as follows:

##### ***1.5.1.1 Comparative study: research objectives:***

1. To identify and compare anxiety, depression and wellbeing levels in women who have experienced miscarriage with a comparative group of women without experience of miscarriage.
2. To identify and compare health locus of control type, perceived social support, coping style and resilience in women who have experienced miscarriage with a comparative group of women without experience of miscarriage.
3. To identify factors associated with lower anxiety and depression and higher wellbeing, to include health locus of control, perceived social support, coping style and resilience in both groups.

### **1.5.2 Stage 2 - Prospective Study: Determining the influence of time and moderating factors on psychological wellbeing amongst women following miscarriage**

The aims of Stage 2, the prospective study, are to determine the effects of miscarriage on women's psychological wellbeing and to identify the best predictors of lower anxiety and depression and higher wellbeing at baseline, 6 months and 13 months. It aims to examine the relationship between health locus of control types, levels of perceived social support, coping style, resilience and satisfaction with experience of healthcare provision; and anxiety, depression and wellbeing levels. By taking a salutogenic perspective, the study examines how these individual attributes change over time, especially the substantive predictors of lower anxiety and depression and higher wellbeing levels, thus enabling the identification of women who cope well and those who may require additional support. The research objectives for the prospective study are as follows:

#### ***1.5.2.1 Prospective study: research objectives:***

1. To identify factors associated with lower anxiety and depression and higher wellbeing following miscarriage at baseline, 6 months and 13 months, to include satisfaction with and experience of healthcare provision, health locus of control, perceived social support, coping style and resilience.
2. To identify additional factors associated with lower anxiety and depression and higher wellbeing following miscarriage at baseline, 6 months and 13 months to include demographics such as age, socioeconomic status, reproductive history and reproductive status.
3. To determine the effects of time on levels of anxiety, depression and wellbeing

### **1.6 Phase 2 – Exploring the Predictors of Enhanced Wellbeing after Miscarriage**

Whilst Phase 1 aims to determine the prevalence, predictors and levels of psychological wellbeing amongst participants, Phase 2, the qualitative study, aims to further expand our understanding of the nature and focus of such wellbeing whilst exploring the predictors of enhanced wellbeing, as identified in Phase 1.

The study aims and research objectives of phase 2 are to explore the phase 1 findings in greater depth through the use of semi-structured interviews;

- (I) To determine the protective factors (health locus of control, coping style, social support, resilience and experience of healthcare provision) that are most salient in predicting lower anxiety, depression and higher wellbeing,

- (II) To understand how women enhance psychological wellbeing following miscarriage.

The next chapter of the thesis discusses the literature that focuses on the impact of miscarriage on women's psychological wellbeing, identifying potential moderators.



## CHAPTER 2

### LITERATURE REVIEW

This chapter examines the impact of miscarriage on women's psychological wellbeing and the potential predictors of enhanced psychological wellbeing. This establishes a context for explaining the rationale behind the current study and its aims and research objectives.

#### **2.1 Aims and Objectives of the Literature Review**

To identify relevant sources of information, and to formulate the research questions addressed in the PhD, a literature review was undertaken using the following search strategy. All synonyms for miscarriage were searched, alongside thesaurus terms on databases to improve the sensitivity of the search strategy. Core resources included searching the Cochrane Library, MEDLINE, PubMed, EMBASE, AMED, CINAHL, INTERMID, Psych INFO, Guideline Sites e.g. NHS Evidence, NICE, SIGN, in addition to ZeTOC, ETHOS, hand searching of references of identified papers, midwifery texts and websites of RCM, RCOG and The Miscarriage Association. The initial search took place in October 2013, with monthly automated search updates via NICE evidence and Zetoc Alerts. Search terms were formulated using the PICO (Richardson 1995) and SPIDER (Cooke, Smith & Booth 2012) frameworks to identify relevant studies. Table 2.1 details the keywords used in the search strategy.

**Table 2.1: Keywords/terms and alternatives**

<b>Keywords/terms</b>	<b>Alternatives</b>
Miscarriage	Early pregnancy loss, early fetal demise, spontaneous abortion.
Psychological impact	Wellbeing, anxiety, depression, grief, stress, distress, bereavement.
Health locus of control	Locus of control, (internal, external, powerful others, fate or chance health locus of control).
Support	Social support (significant other, partner, family, friends, healthcare professionals).
Coping	Coping styles (self-blame, avoidant, emotion focused, task focused).
Resilience	Strength, asset, ability to bounce back, adversity.
Experience of healthcare provision	Miscarriage care. Healthcare. Follow up care.



### ***Types of intervention(s)/phenomena of interest***

Types of studies included quantitative studies evaluating the effectiveness of professionally led interventions designed to support women following miscarriage.

The review considered studies that examined the effectiveness of the intervention measuring the impact on psychological wellbeing.

**Population/Sample** - target women who have experienced miscarriage as defined by the RCOG (2006).

**Exposure/Phenomenon of Interest** - included potential factors influencing the psychological impact of miscarriage, including: health locus of control, social support, coping style, resilience, women's views and experience of healthcare provision following miscarriage over time.

**Control/Design** - included prospective, longitudinal, comparative and qualitative.

**Outcome/Evaluation** - psychological impact on wellbeing, anxiety, depression, grief, distress.

**Research type** - effects relating to an intervention including randomised controlled trials, non-randomised and mixed method.

The inclusion and exclusion criteria were set to optimise the number of relevant studies chosen for inclusion. Qualitative, quantitative and mixed-method studies that assessed women's experience of miscarriage were included. International literature were included, however studies not available in the English language were excluded. As international definitions of miscarriage vary and many papers researched a combination of fetal loss types, it was difficult to set a gestational age for study exclusion without losing a large amount of relevant data, therefore only studies exclusively addressing stillbirth, termination of pregnancy for fetal abnormality, planned termination of pregnancy, ectopic pregnancy or neonatal death were excluded. No publication date limitations were set.

### **2.2 Impact of Miscarriage on Psychological Wellbeing**

Miscarriage is a common complication of pregnancy that may cause the woman significant psychological distress (Robinson 2011; Gaudet et al. 2010; Brier 2008; Bryant 2008; Callander et al 2007; Cumming et al. 2007; Adolfsson, Bertero and Larsson 2006; Geller, Kerns and Klier 2004; Magee et al. 2003; Craig, Tata and Regan 2002; Klier, Geller and Ritscher 2002; Athey and Spielvogel 2000; Jannsen et al. 1997; Neugebauer 2003, 1997; Thapar and Thapar 1992). It can be followed by a grief reaction resembling the one occurring after the death of a loved one (Kersting and Wagner 2012; Adolfsson and Larsson 2010). Miscarriage for some women

will represent the loss of a future child, of motherhood (Lee and Slade 1996) and may reduce their confidence in the ability to procreate (Moulder 1994; Neugebauer et al. 1992; Freidman and Gath 1989).

It has been suggested that the lack of an appropriate outlet for women to channel their feelings, leads to prolonged accumulation of feelings of anxiety, depression and greater distress (Sejourne, Callahan and Chabrol 2010).

### **2.2.1 Anxiety**

Anxiety is a feeling of apprehension or fear, often triggered by the anticipation of a threatening event or situation, and can be excessive. It can be accompanied by various psychological symptoms that may include hyperalertness, tension, a sense of unease, restlessness, insomnia, fear, irritability, concentration problems and forgetfulness (Raynor 2014). Anxiety is relatively common, with 31% of women developing some type of anxiety disorder during their lifetime (Kessler et al. 1994). Breeman et al. (2014) reported the UK norm for anxiety caseness using the HADS (Zigmond and Snaith 1983) as 19%.

Rates, however, are significantly higher amongst those experiencing miscarriage. Cumming et al. (2007) found that that 28.3% of women following miscarriage were at or above the HADS (Zigmond and Snaith 1983) clinical threshold of 11 for anxiety 'caseness'. Whilst Callander et al. (2007) and Magee et al. (2003) found that approximately 50% of women experiencing recurrent miscarriage were in the range for clinical anxiety.

The suddenness and unexpected nature of miscarriage can often be anxiety provoking, and centred on pregnancy-related issues, such as the ability to have a baby, often characterised by the presence of a relatively high level of somatic complaints (Brier, 2004).

### **2.2.2 Depression**

Depression refers to a wide range of mental health problems characterised by the absence of a positive affect (i.e. a loss of interest and enjoyment in ordinary things and experiences), persistent low mood and a range of associated emotional, cognitive, physical and behavioural symptoms (NICE 2009). Symptoms of depression include overwhelming feelings of sadness and grief, feelings of worthlessness or guilt, poor sleep patterns, changes in appetite, severe fatigue and difficulty in concentrating (Dennis and Dowswell 2013). Depression is a leading cause of disability worldwide (Marcus et al. 2012) and has a prevalence rate of 3.8% in women of reproductive age (Olsen, Mortensen and Bech 2004).

Rates, however, are significantly higher amongst those experiencing miscarriage. A meta-analysis of 21 studies suggests that the mean prevalence rate of depression in the first trimester of pregnancy is 7.4% (Bennet 2004). Cumming et al. (2007) however, found 10% of women post miscarriage had depression 'caseness' at or above the HADS clinical threshold of 11; whilst Defrain, Millspaugh & Xie (1996) found that 11.45% of women felt so depressed they had considered suicide, and 1.8% had made an attempt to take their own life following miscarriage.

Heightened levels of depression are also evident amongst those who experience recurrent miscarriage. Callander et al. (2007) found that 6.5% of women were in the range for clinical depression, whilst Magee et al. (2003) reported 10% of women were in the range for clinical depression. Craig, Tata and Regan (2002) found that 33% of women were classified as depressed, 9.9% were moderately depressed and 7.4% were severely depressed.

### **2.2.3 Wellbeing**

The concept of wellbeing is evolving; however, the variation in definitions makes the measurement and interpretation of outcomes complex (Carlisle and Hanlon 2007). The World Health Organisation (WHO) defined mental health as "a state of wellbeing in which the individual realises his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community" (2001 p.1). The concept of wellbeing appears in the definition in terms of positive mental health; with the inclusion of filling one's potential to create a general sense of positive emotions and happiness. Psychological wellbeing represents satisfaction with life and a lack of psychological distress; however it can also refer to further aspects of human development and existential life challenges (Keyes 2002).

It has been suggested that there are two types of wellbeing, firstly there is eudaimonic (from the Greek word eu meaning good), the wellbeing of feelings associated with the perception of living up to one's potential indicating positive psychological functioning, good relationships with others and self-realisation. Secondly, there is hedonic (from the Greek word hedone meaning pleasure), wellbeing demonstrated by feelings of happiness and life satisfaction. The eudaimonic perspective includes the capacity for self-development, positive relations with others, self-acceptance, autonomy and competence (Ryan and Deci 2001). Keyes and Magyar-Moe (2003) suggest that emotional wellbeing, is positive functioning combined with social wellbeing from the definition of general wellbeing, and is also known as complete mental health.

Positive psychology research has shown links between higher wellbeing and lower levels of adverse mental health and mental illness. A population study found an association between higher levels of wellbeing with being in paid work, having a higher income, finding it easy to manage financially, having someone to turn to in the event of being ill in bed or in financial difficulty, feeling in control of factors affecting mental health, having good or very good (self-assessed) general health and having no experience of a mental health problem (Scottish Government Social Research 2009). Although the Scottish Government (2013) found higher wellbeing scores as measured by the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS; Tennant et al. 2007) for men (mean=51.3 95% CI: 50.6 - 51.9) compared to women (mean=50.3 95% CI: 49.7 - 50.8), the difference in mean scores was not statistically significant.

Establishing enhanced health and wellbeing after major life events is compatible with the concept of post traumatic growth (Tedeschi, Calhoun and Cann 2007). Antonovsky (1993) postulated that people who see their worlds as comprehensible, manageable and meaningful, are more likely to see their life as coherent, and thus are more able to cope with adversity in a positive way.

Sense making is integral to mental health (Park 2010) and has been found in qualitative studies, where women describe searching for meaning after miscarriage with varying effects on psychological wellbeing (Lee and Rowlands 2015; Simmons et al. 2006). Women, who have the ability to find positive aspects in the experience of miscarriage, may enhance their ability to cope (Maker and Ogden 2003).

Very little research, however, has been carried out to determine the impact of miscarriage on wellbeing or the link between wellbeing and coping post-miscarriage.

#### **2.2.4 Grief**

Grief and loss evolved from Freud's 1917 model of bereavement, proposing that people need to invest intense emotion in, and then sever, the bonds between the bereaved and the deceased, in order to achieve the ultimate goal of freeing oneself from the pre-existing emotional attachment (Rothaupt and Becker 2007). The grieving process, as described by Kubler-Ross's (1969) theory of grief occurs in five-stages:

*Denial - How could this be happening?*

Initially the person expresses disbelief that death has occurred. They may feel that the world is a meaningless place and be overwhelmed by events. They are likely to present in a state of shock, but as they begin to accept what has occurred they enter the next stage

### *Anger-Why me?*

They may feel confused and begin to find blame in everyone around. They may be angry with those around them as to who let this happen, or themselves and maybe also with God.

### *Bargaining-If I promise to change, then the circumstances will change*

They may bargain with self and others and hope that by fulfilling their side of the bargain they will wake up from this nightmare to find it was all a dream. They enter the stage of 'if only' or 'what if' and want to turn back the clock to do things differently in hope of a better outcome.

### *Despair-Loss of hope that things will change*

They may enter a period of time where they recognise how empty their lives are without the individual, feeling deeply depressed as they try to come to terms with what has happened.

### *Acceptance-This has really happened.*

Eventually the pain of their loss should diminish as they recognised that life must continue. A new pattern of normal life emerges, and whilst memories remain, these become an accepted part of the new reality.

However, "this prescriptiveness in itself can arouse unnecessary and counterproductive anxiety" (Mander 2006 p. 7), and it is now acknowledged that grief experiences can differ in intensity, timing and duration depending on the individual and their culture (Zisook and Shear 2009). Disenfranchised grief occurs when individuals feel their grief is not important and the grieving process is unrecognised (Doka 1989). Silence contributes to disenfranchised grief, when the loss, the relationship, or the person who is the cause of grief is not socially recognised (Doka 1989), as may be the case in miscarriage. Indeed Cecil (1996 p.1) found that "there may not, quite literally, be the words to discuss and describe the event (i.e. miscarriage)", within some cultures. The social support that is essential to healthy grieving may be unavailable to women who miscarry, as the pregnancy was not known to others within her social network (Lovell 1997). Indeed Lovell (1997) also suggests that losses arising from miscarriage, "are largely unrecognised and undervalued", with early miscarriage, being placed at the bottom of the bereavement hierarchy.

Neugebauer and Ritsher (2005) found approximately 20% of women were grief-stricken at 6-8 weeks and again at 6 months after miscarriage. Swanson et al. (2007) found that the number of women actively grieving over the course of a year post-miscarriage decreased, however 60% of women who reported feeling 'overwhelmed' at 1 week were still actively grieving one year after miscarriage. Lasker and Toedter (1991) found that a difficulty in coping and feelings

of despair post-miscarriage indicated a need for follow up support, with differing dimensions of grief.

Purandare et al. (2012), found no difference in severity of grief amongst women who had experienced a miscarriage, an ectopic pregnancy or a gestational trophoblastic disease pregnancy; the intensity of the grief however, increased significantly with the number of miscarriages for women with a child, and for women without children who experienced ectopic pregnancy, suggesting individualised support is needed for these women. It has been suggested that the grief response would be more intense if the loss occurred later in the pregnancy, however some studies have demonstrated that this is not the case (Kersting and Wagner 2012; Peppers and Knapp 1980). Franche (2001) found that later gestational age at time of loss was a predictor of increased grief during a pregnancy after a miscarriage or perinatal death, whilst others have failed to replicate this finding (Slade 1994; Thapar and Thapar 1992). Peppers and Knapp (1980) found those women who had miscarried scored as high on an assessment of grief as women who had experienced stillbirth. This suggests that levels of grief cannot be predicted by the length of gestation, but by the attachment, investment and meaning of the woman's anticipated pregnancy (Robinson 2011).

### **2.3 Impact of Miscarriage on Psychological Wellbeing – Controlled Studies**

Although the studies above indicate that levels of anxiety and depression are heightened in women post-miscarriage, failure to include a comparative group means that it is impossible to state with any certainty, that changes in anxiety, depression and wellbeing are due to miscarriage, as opposed to other factors common in women of reproductive age.

#### **2.3.1 Anxiety**

Thapar and Thapar (1992), using the HADS (Zigmond and Snaith, 1983) and the General Health Questionnaire (Goldberg and Hillier, 1979) found that the miscarriage group were significantly more anxious compared to a comparative group (CG) of pregnant women, at both an initial assessment and six weeks later. A study by Janssen et al. (1996) involving both a MG and a CG of pregnant women showed that the MG had more symptoms of anxiety than the CG at both 2.5 months and 6 months follow-up. Twenty two percent of the MG scored what Janssen et al. (1996) categorized as "high" or "very high" on the anxiety subscale at 2.5 months. However, the difference in anxiety scores between the MG and CG was no longer statistically significant at 12 and 18 months. Fertl et al. (2009) found in a longitudinal study that included pregnant women with a history of miscarriage had higher levels of pregnancy related fear and state anxiety during their first trimester compared to a pregnant cohort of women without miscarriage.

These comparative studies suggest that the majority of women are able to recover from pregnancy loss, but that some women remain anxious, suggesting follow-up is needed to reduce anxiety.

One limitation of the studies above is the use of pregnant opposed to non-pregnant women as the control group (Geller, Kerns and Klier 2004). Since pregnant women experience elevated levels of anxiety and depression due to pregnancy (Heron et al. 2004), the impact of miscarriage on mental wellbeing may be masked, as the control groups psychological wellbeing is likely to be affected by this life event (Janssen et al. 1996). A further problem in relation to monitoring the impact of miscarriage over time lies in the timing of the measurements, data collected at more sensitive time points such as the anniversary (i.e. 12 months) of the date of miscarriage or expected date of delivery may result in elevated and thus unrepresentative levels of anxiety and depression (Rosenfeld, 1991). The inclusion of a control group, which includes women who are not pregnant, is, therefore, beneficial.

Lee and Slade (1996) examined anxiety using the HADS (Zigmond and Snaith, 1983), in a MG and CG of women without experience of miscarriage at one week and four months after the loss. At the one week assessment, 35.9% of the MG showed increased anxiety, compared to 7.6% of CG. At four months, anxiety levels remained significantly elevated in the MG, with 28.2% still reaching anxiety caseness.

Geller, Klier and Neugebauer (2001) found that 15.7% of MG experienced one of the three anxiety disorders (obsessive compulsive disorder, panic disorder and phobic disorder) compared with 10.9% in the CG, with a substantial risk for an initial or recurrent episode of obsessive compulsive disorder in the 6 months following loss.

These studies cumulatively indicate that anxiety is significantly elevated following miscarriage.

### **2.3.2 Depression**

Neugebauer et al. (1992), however, found the difference in symptoms of depression to be higher when compared to a community sample; with women in the early weeks after miscarriage 3.4 times more symptomatic of depression (as measured by the Centre for Epidemiological Studies Depression Scale (CES-D; Radloff 1977) than a CG of pregnant women, and 4.3 times that of a CG of community women.

Kolte et al. (2015), using the Major Depression Index, found that 8.6% of women in the recurrent pregnancy loss group had moderate/severe depression compared to 2.2% of women in a Comparative Group (CG) who were of reproductive age.

Evidence clearly indicates that women experience elevated levels of depression following miscarriage. Neugebauer (2003) found significantly elevated depression levels amongst the MG compared with a CG unexposed to pregnancy loss; whilst Klier et al 2000 found 5.2% experienced an episode of minor depression compared with 1.0% in the CG. Neugebauer et al. (1997) found that the overall relative risk for an episode of major depressive disorder was 2.5 times more likely and was substantially higher for childless women than for women with children. Interestingly, among the MG with a previous history of major depressive disorder, 54% experienced a recurrence. This suggests that potential moderators in relation to psychological adjustment include previous history of a major depressive disorder and women without children.

Thapar and Thapar (1992), using the HADS (Zigmond and Snaith, 1983) and the General Health Questionnaire (Goldberg and Hillier, 1979) found that the miscarriage group scored higher on the subscale for severe depression compared to a comparative group (CG) of pregnant women, at both an initial assessment and six weeks later. Although evidence indicates elevated levels of depression following miscarriage, the effects on anxiety appear to be more intense and more prolonged (Geller, Kerns and Klier 2004).

Many of the studies above have limitations due to small sample sizes and mixed samples i.e. studies that include women with miscarriage and other types of perinatal loss e.g. stillbirth and neonatal death, whose psychological wellbeing may be affected in a different way by these events (Geller, Kerns and Klier 2004).

The use of varying definitions of miscarriage, different standardized psychometric questionnaires, varying times of data collection and different types of comparative groups also make comparing findings problematic. Finally, they focus on illness rather than wellbeing and therefore fail to increase our understanding of how to enhance women's psychological wellbeing post-miscarriage.

### **2.3.3 Gender comparison of psychological reaction to miscarriage**

Evidence suggests that the impact of miscarriage on psychological wellbeing affects not only women but also their partner (Huffman, Schwartz and Swanson 2015; Kong, et al. 2010; Cumming et al. 2007; Johnson and Baker 2004; Conway and Russell 2000; Puddifoot and Johnson 1997; Cummings 1984). The experience of miscarriage for lesbian couples must be viewed from the perspective of the difficulties surrounding conception as well as the actual pregnancy loss (Wojnar 2007). It has been suggested that men could be affected by their female partners' depression and grief (Beutel et al. 1996), with evidence of positive correlations between a couple's psychological reactions (Kong et al. 2010).



Longitudinal studies have investigated the differences between men's psychological reaction to miscarriage in comparison to their female partner. Historically, it was assumed that the woman's partner was not affected by pregnancy loss, assuming that bonding did not occur between a male partner and his unborn child (Peppers and Knapp 1980). Stinson et al. (1992) found that woman's partners reported less grief, guilt, loneliness, fear and depression 2 months after loss than did the women themselves. In contrast, Conway and Russell (2000), found that male partners scored significantly higher than women on the Perinatal Bereavement Grief Scale (Toedter, Lasker and Alhadeff 1988), on all three subscales as well as grief overall. The experience of miscarriage was found to be a significant event and the majority of women and their partners still experienced feelings of loss up to 4 months afterwards, describing their reactions as sad or very sad. Women tended to receive and welcome social support more than their partners, however support received from health professionals was not always optimal, particularly for partners (Conway and Russell 2000).

Kong et al. (2010) in a prospective 1 year longitudinal observational study in Hong Kong, found that 43.4% of men scored high on the General Health Questionnaire (GHQ-12; Goldberg 1978) and 16.9% scored high on the Beck Depression Inventory (BDI; Beck 1961) immediately after miscarriage, in comparison to women where 51.8% scored high in GHQ-12 and 25.3% scored high on BDI. The study demonstrated psychological distress and probable depressive disorders after miscarriage for both men and women, affecting the woman's relationship with their partner (Kong et al. 2010), and recommended post miscarriage counselling therapy. The psychometric scores did however decrease significantly over the following year, suggesting recovery (Kong et al. 2010). Such findings may be limited by the cultural differences and different healthcare provision between countries.

Similarly, Cumming et al. (2007) found that miscarriage was a significant emotional burden for women and to some degree for men. Using the HADS (Zigmond and Snaith 1983) the study found that 28.3% of women and 12.4 % of men had anxiety 'caseness'; whilst 10% of women and 4% of men had depression 'caseness' in the weeks after miscarriage. Women reported higher levels of anxiety across all three time points, but with a continued improvement over the 13 months, whereas there was no significant change in anxiety over time observed for men. Similar trajectories were found for women and men in relation to depression, except that for men, the level of depression rose slightly by the 13 month assessment, having initially decreased at 6 months after miscarriage (Cumming et al. 2007). The Cumming et al. study (2007) identified the need for a greater awareness of the detrimental effects of miscarriage amongst healthcare professionals, and for these professionals to be able to identify those in need of intervention, to avoid enduring problems.

Existing literature has attempted to understand what factors contribute to lessening or heightening distress following miscarriage. Abboud and Liamputtong (2005) examined how women and their partners cope with miscarriage and identified the importance of the partner taking on an encouraging role in the woman's recovery. Studies examining couples' perceptions of miscarriage found that coping with pregnancy loss depends on individual women and their partners, as each couple has different ways of dealing with it. However, a good support network and positive contacts with healthcare professionals impact on how they are able to cope (Abboud and Liamputtong 2005), recognising the need for sensitive healthcare.

Johnson and Puddifoot (1996) revealed that many men do experience a deeply felt loss following their partner's miscarriage, but felt inhibited in the expression of their feelings. The partner's role is often seen to be almost exclusively one of support for their partner; however they may be unable or unwilling to seek support for themselves at a time when they most need it.

Collectively, these studies demonstrate the uniqueness of women and men in their psychological adjustment following miscarriage.

## **2.4 Moderators of Impact on Psychological Wellbeing**

Clearly miscarriage is an experience which evokes an individualised response; and such a response may depend on the resources available to a woman to help her cope. In a Finnish, nationwide register linkage study by Gissler, Hemminki and Lonnqvist (1996), found women who committed suicide between 1987 and 1994, showed that the mean annual suicide rate among women who had had a miscarriage in the last year of life was significantly higher (18.1 per 100,000) than among women who had given birth (3.9 per 100,000) and among women who were of reproductive age (11.3 per 100,000).

The way women respond to miscarriage, however, may potentially alter based on a number of factors including demographic characteristics, provision of, and satisfaction with healthcare, the effect of time, health locus of control, social support, coping style and resilience.

### **2.4.1 Demographic characteristics**

For the most part, maternal age has not been significantly associated with depression or grief following miscarriage (Beutel et al. 1996; Prettyman, Cordle and Cook 1993; Thapar and Thapar 1992). However, age does appear to have an effect on how women cope with miscarriage. Higher levels of physical, emotional, social and cognitive grief and depressive symptoms were found in adolescents (13 to 19 years of age) with pregnancy loss (Wheeler

and Austin 2001) compared to those without pregnancy loss. A study found that depressive symptoms were significantly inversely associated with age, where increasing age acted as a protector against grief following pregnancy loss (Mann et al. 2008). Lee and Rowlands (2015) using data from the Australian Longitudinal Study on Women's Health, found that the main differences between a miscarriage group and a comparative group relate to social disadvantage and to a lifestyle that makes pregnancy more likely, once these factors are accounted for, there were no differences in the impact upon mental health.

#### **2.4.2 Reproductive history**

Maker and Ogden (2003) examined how reproductive factors impact upon the miscarriage experience, and was conceptualised into three stages, turmoil, adjustment and resolution. Whether the pregnancy was wanted, whether the miscarriage was their first and the existence of other children influenced women's ability to incorporate their experiences into their lives. In the study by Craig, Tata and Regan (2002) neither age, previous live birth, number of miscarriages, gestational age at miscarriage nor length of time since last miscarriage were found to affect the degree of psychological morbidity.

A prospective cohort study carried out by Cheung, Chan and Ng (2013) found that women conceiving after assisted reproduction for example in-vitro fertilisation, had higher stress, anxiety and depression levels, and experienced more traumatic impact from the event, than those who had a natural conception. The study used the 12-item General Health Questionnaire and the 22-item Revised Impact of Events Scale, and highlights the importance of timely support to improve psychological wellbeing for these women. In contrast, Friedman and Gath (1989), found no impact of infertility on emotional adaptation at one month post miscarriage using the Present State Examination; they did however, find the rate of depressive disorder to be four times higher than the general population, with significant associations with a history of previous miscarriage and less so with childlessness (Friedman and Gath 1989).

Studies have found that women with a history of perinatal loss, including miscarriage, experience significantly greater state anxiety, pregnancy-specific anxiety, worry, depression, and less attachment to the subsequent pregnancy than a comparative group of women without loss (Tsartsara and Johnson 2006; Cote-Arsenault 2003;). Whilst many of the studies have no comparative group (CG), those that do, often include groups whose own mood is likely to be affected by life changes, such as pregnant women (Woods-Giscombe, Lobel and Crandell 2010; Janssen et al. 1996). State anxiety and pregnancy specific distress continues across all trimesters, compared to a CG, with the miscarriage women experiencing greater state anxiety in the second and third trimester (Woods-Giscombe, Lobel and Crandell 2010).

The Avon Longitudinal Study of Parents and Children (Blackmore et al. 2011) found the number of previous pregnancy losses significantly predicted symptoms of depression in a subsequent pregnancy, independent of key psychosocial and obstetric factors. This association remained constant across the antenatal and postnatal period, indicating that the impact of a previous perinatal loss did not diminish significantly following the birth of a healthy child. The study included both miscarriage and stillbirth together, but highlights the need for early intervention to enhance wellbeing, by reducing anxiety in the early stages of the next pregnancy for women who have previous experience of pregnancy loss.

In a small study by Tsartsara and Johnson (2006), found that women with miscarriage history reported significantly higher pregnancy-specific anxiety in the first trimester, in comparison to women with no miscarriage history. By the 3<sup>rd</sup> trimester, however, pregnancy-specific anxiety was similar across the two groups. These findings suggest that a miscarriage history may not have a long-lasting adverse effect on a woman's psychological adaption during the course of a subsequent pregnancy (Tsartsara and Johnson 2006). The study was limited, however, by a small sample size, with only 10 women at 1<sup>st</sup> trimester with miscarriage, and only 5 (out of the ten) women with a miscarriage history assessed in the 3<sup>rd</sup> trimester. It is possible that attrition was due to increased pregnancy anxieties and distress at the second time point, as it was later in the pregnancy.

Although women may be more anxious in subsequent pregnancies, being pregnant again or giving birth has been associated with diminished grief at 1-2 years post pregnancy loss (Cuisinier et al. 1996; Lin and Lasker 1996). However women, who have high anxiety in the next pregnancy, may be at greater risk of experiencing another miscarriage (Cumming et al. 2007).

#### **2.4.3 Recurrent miscarriage**

Recurrent miscarriage has been associated with high levels of stress and anxiety (Mevorach-Zussman et al. 2012), indeed Craig, Tata and Regan (2002) found that 21% of women had anxiety levels which were equal to or higher than a typical psychiatric outpatient; whilst Kolte et al. (2015) found that 41.2% of women in a recurrent pregnancy loss group had high stress levels compared to 23.2% of women in a CG who are of reproductive age.

A pilot study by Donnely, Friedmanellie and Lathi (2011), found that 19% of a recurrent pregnancy loss group had moderate to severe depression, 47% considered themselves as "having failed more than I should have" and 19% had experienced thoughts of suicide. The authors of the pilot study recommend screening women for depression and the importance of

collaboration with mental health providers using a multidisciplinary approach for women who experience recurrent miscarriage (Donnely, Friedmanellie and Lathi 2011).

It has been suggested that as recurrent miscarriage has in most cases a favourable prognosis, with a live birth rate over 90% after two or three attempts, and is therefore not a real medical problem, that psychological support should replace medical interventions (Vlaanderen 2014). In contrast, Christiansen (2014) argues that a significant subset of recurrent miscarriage patients exhibit a poor spontaneous prognosis, with the need for relevant investigations and close surveillance during pregnancy and treatment, preferably as part of randomised controlled trials. The different viewpoints depend on whether recurrent miscarriage is viewed as a physiological event where spontaneous prognosis is favourable or whether one's view of recurrent miscarriage is one that requires specific treatments aimed at improving pregnancy outcome. The current medical model of recurrent miscarriage favours the latter, as despite the impact of miscarriage on women's psychological wellbeing, only a small percentage of women seek or receive psychological treatment (Kersting et al. 2011).

Similarly, Bergner et al. (2008) found that women with a history of miscarriage suffer from more pregnancy-specific anxieties in the first trimester of a new pregnancy than pregnant women with no history of miscarriages. In addition, they found that "depressive coping" and "anxious grieving" after the losses were predictive of more marked anxiety and depression symptoms. These results add to the literature that women who have had an early miscarriage are particularly at risk of disturbances in their psychological adaptation in a new pregnancy.

There are conflicting findings in the literature around the evidence of a causal link between anxiety and miscarriage. However, there are indications that a high degree of anxiety leads to shifts in the immunological and neuro-endocrine balance and that a miscarriage can be triggered by means of this mechanism (Arck et al. 2001), which could potentially be linked to recurrent miscarriage. Whilst it has been identified that the mother's psychological wellbeing should be considered in the early stages of a pregnancy (Glover 2014; Talge, Neal and Glover 2007) following a miscarriage, this has not always been as much of a priority as the physical care (NICE 2012).

#### **2.4.4 Satisfaction with, and provision of healthcare**

Those working within NHS Scotland share a vision for high quality healthcare service provision (Scottish Government 2011), and patient satisfaction is a commonly-reported outcome measure of healthcare quality, with implications for organisations and provision of services.

Miscarrying women have reported that negative aspects of medical care include involuntary placement on maternity wards (Lasker and Toedter 1994); lack of sympathy while waiting in gynaecology wards for treatment after miscarriage (Tsartsara and Johnson 2002); failure by professionals to listen with compassion (Hutti, Armstrong and Myers 2011; Montero et al. 2011) and inadequate and insensitive medical information regarding miscarriage and its implications for future pregnancies (Abboud and Liamputtong 2005; Wong et al. 2003; Cecil 1994; Friedman 1989).

In a narrative analysis of 172 accounts of miscarriage in the UK, Simmons et al. (2006) report that women often complained about the level of care they received by healthcare workers highlighting, in particular, the importance of emotional support. A major theme that emerged was the 'disconnect' between women and their providers over the magnitude of the loss as reflected in ward assignment, delivery of news that a loss was occurring, and explanations for the loss. These experiences left women feeling that care providers handled their loss as a matter of 'routine' care, though it was not at all routine for the women experiencing the loss.

A small qualitative study also found that women's choice of treatment was often determined by unspoken emotional considerations, including fear of seeing the fetus or fear of anaesthesia (Linnet Olesen, Graungaard and Husted 2015). The study used coping theory and decision making during stressful situations and found that women need more understanding of the treatments to make a more fully informed choice, as women's needs and unspoken thoughts were unexplored by healthcare professionals.

In addition, it has been suggested that the medicalisation of miscarriage oversimplifies the complexity and "contributes to a sense that miscarriage is being trivialised and its seriousness for the woman denied" (Frost et al. 2007 p1005). Friedman and Gath (1989) found that women felt that miscarriage was perceived by medical staff as unimportant. Perceptions of medical staff on what is considered a viable fetus found that miscarriage was viewed as less of a loss than that of a stillbirth (Stratton and Lloyd 2008).

Despite these negative experiences, research indicates that women are more likely to be satisfied with their care when it is provided in an accessible, caring (Paton et al. 1999; Wiebe and Janssen 1999), empathic and supportive manner (Fleuren et al. 1998).

In a study to explore women's preferences around care for women with unexplained recurrent miscarriage, Musters et al. (2011) identified 20 different supportive care options; 16 of which were related to care preferred for the next pregnancy. Some examples of the preferred options included early and frequently repeated ultrasound scans, emotional support, advice on life-style and diet, a clear policy for the upcoming 12 weeks and medication (Musters et al. 2011).

Although there is little evidence to suggest that these will help and are mainly focused on the next pregnancy, they may help in improving the provision of high-quality, individualised, woman-centred care.

Despite the findings that some women are dissatisfied with medical care when experiencing miscarriage; such findings have not been adequately addressed in the UK (Geller, Psaros and Kornfield 2010; Simmons et al. 2006). Indeed, the internet based charity mumsnet.com (2011) felt compelled to launch a campaign entitled 'Miscarriage Code of Care', after extensive consultation with 'mumsnetters' to help lessen the trauma of early pregnancy loss for parents. 'The Code' includes recommendations for supportive staff, who receive training in the psychological effects of miscarriage including training in how to deliver sensitive communication with good listening skills. It further recommends that women should have access to ultrasound scanning, and appropriate places for treatment, good information and effective treatment, in addition to improved seamless care (mumsnet.com. 2011).

#### **2.4.4.1 Follow up support**

Despite guidelines from the Royal College of Obstetricians and Gynaecologists (RCOG; 2006) suggesting all women should be offered follow-up, and recent NICE guidelines (2012) that suggest the follow-up should be with a healthcare professional of the woman's choice, there is acknowledgement that this does not always happen (RCOG 2006). Nikcevic (2003) found that there is no routine follow-up care for women. This may be because there is a lack of evidence regarding the optimal type, timing and provider of such follow-up. Klier et al. (2000) conclude that miscarrying women should be assessed for depression at their follow-up medical visits, suggesting that women receive follow-up medical visits, which in the UK, is not always the case. Neugebauer et al. (1997) also conclude that women who experience miscarriage should be assessed in the first weeks after reproductive loss, particularly women who are childless, or who have a previous history of major depressive disorder.

Understanding and responding to women's perceptions of perinatal loss and the significance for women, may be one way to support them in subsequent pregnancies (Cote-Arsenault and Dombeck 2001). Healthcare providers should address the woman's need for support which may help her in dealing with concerns that are likely to arise in a subsequent pregnancy (Swanson 2000). Wong et al. (2003) found that women desire formal follow-up care in order to receive informational support, and help them deal with guilt and false assumptions.

A study that offered a follow-up support session following miscarriage, (Nikcevic et al. 2000), saw a significant decrease in levels of anxiety and an improvement in positive mood at the

time of the session and at 4 months post miscarriage, regardless of informational coping style and whether a specific cause of miscarriage was found.

Regarding explanations for miscarriage, Rowsell et al. (2001) found no evidence to support the proposal that those given a medical explanation following miscarriage would show a greater reduction in levels of psychological distress than those not given such an explanation. These results suggest that information about the cause of miscarriage alone does not enhance psychological wellbeing in women. Nikevic (2003), in a controlled evaluation of follow up care, suggests that a combination of psychological counselling, medical investigations of the cause of miscarriage and a consultation, was superior in bringing about reduction in women's distress.

Adolfsson, Bertero and Larsson (2006) suggests that structured follow-up visits are not imperative for all women with early miscarriage, identifying the need for targeted support, especially amongst those at greater need such as those who have experienced a missed miscarriage, as they were identified as having more extensive grief than other women with miscarriage. Adolfsson, Bertero and Larsson (2006) examined whether a follow-up visit from a midwife (group 1) reduces grief, measured using the Perinatal Grief Scale (PGS), compared to a standard follow up visit to a midwife (group 2). The midwife's attitude in group 1 came from Swanson's caring theory, whereas group 2 received the ordinary type of consultation at a regular visit. The midwife in group 1 used five therapeutic caring categories identified by Swanson (1990) namely: 'knowing', i.e. the caregiver should have medical knowledge, in addition to understanding the personal meaning of the loss in their lives; 'being with' i.e. being emotionally present for the other person, including listening attentively, giving reflective answers and time; 'doing for' i.e. includes physical doing and psychosocial caring such as comforting and protecting to preserve her dignity; 'enabling' helping the woman work through the new and unfamiliar experience; and finally 'maintaining belief' i.e. sustaining faith in the woman's capacity to get through the event and raising esteem, maintaining a hopeful attitude, to give a meaning to the life event as part of one's life experience. There was a reduction in grief in group 1 compared to group 2, however this was not significant. The biggest differences were in the subscales for active grief and difficulty coping. Women in the missed miscarriage category had significantly higher PGS scores at both visits, regardless of the type of follow-up visit, suggesting these women may have more difficulty in adjusting.

#### **2.4.5 Effect of time**

The lack of research into interventions may be because studies have found that symptoms of anxiety and depression, commonly persist for up to 6 months but from then, symptoms



disappear or at least significantly lessen (Brier, 2008). Few studies (Kong et al. 2010; Cumming et al. 2007; Blohm, Friden and Milsom 2008; Broen et al. 2006) however, have assessed the longer-term impact of miscarriage.

Cecil and Leslie (1993) using the State and Trait Anxiety Inventory, found a significant decrease in state anxiety over the 6 month period after the loss, however high attrition of participants (54.17% attrition), questions the validity of these findings.

Using the HADS, Prettyman, Cordle and Cook (1993) found that anxiety caseness significantly decreased from 41% at initial assessment to 32% at 12 weeks post miscarriage in comparison to 22% and 6% for depression caseness respectively. Walker and Davidson (2001) found that psychological distress decreased significantly over time when measured at 3 weeks and 3 months post miscarriage, with the exception of anxiety which remained high. Cordle and Prettyman (1994) revealed no statistically significant difference in anxiety and depression caseness at 12 weeks and 2 years but found an association between lack of support from partner and anxiety, however comparison between the initial and 12 week time period are not reported making it difficult to assess if there were changes across time. The study identified that 68% of women continued to feel upset by thoughts of their miscarriage, influencing their decision to become pregnant, with 16% deciding to avoid pregnancy (Cordle and Prettyman 1994).

Dingle et al. (2008) found anxiety and depression symptoms can persist up to 21 years after miscarriage, whilst Schwerdfeger and Shreffler (2009) found high levels of depression after 7 years. Whilst studies have shown that the effects of miscarriage are enduring, few studies have investigated the possible factors that moderate this impact.

Swanson (2000) found that getting pregnant during the first year after loss, and getting past the gestational age of the prior loss, reduces passive coping styles and depression. Women who are least depressed after miscarriage are those who are pregnant again or who have given birth (Garel et al. 1993). Rowlands and Lee (2010b) found a positive trend in mental health over time (as measured by Mental Health subscale of the SF-36; Ware, Kosinski and Keller 1994), with higher education and satisfaction with primary care physician associated with higher mental health scores. Stress and negative life events were negatively associated with mental health. Having a history of a medically diagnosed depression or anxiety was a significant predictor of downward trajectories in mental health over time (Rowlands and Lee 2010b). Broen et al. (2006) using the HADS, found that predictors of anxiety and depression at 6 months and 5 years were recent life events and previous psychiatric health issue.

Nikcevic and Nicolaides (2014) in a longitudinal study found that a search for meaning was very common and it declined with time after miscarriage. By 7 weeks post miscarriage, more than half of the women reported that they understood why the miscarriage had happened. This suggests that adjustment to miscarriage overtime is influenced by one's ability to make sense of events, in order to restore the predictability of one's life (Gillies and Neimeyer 2006).

Defrain, Millspaugh & Xie (1996) explored the views of parents following miscarriage and identified that 94% felt they were grieving, 33% blamed someone else for the loss, 72% felt their memories fade over time, and 49% experienced flashbacks of the miscarriage. Swanson et al. (2007) found that women who were still grieving at the one year mark were likely to have experienced further negative events. The miscarriage experience resulted in women expecting difficulty during their next pregnancy, and response at 6 weeks was a good indicator of their feelings at one year. Lasker and Toedter (2003) found that some women still think about the baby they did not have, 16 years after miscarriage, suggesting that time is a potential moderator.

#### **2.4.6 Health locus of control**

One of the first formal conceptualisations of control was the Locus of Control Theory (Rotter 1966). Locus of control (LOC) is an important psychological dimension within health research and the issue of personal control in pregnancy and childbirth has been gaining increasing attention (Martin and Jomeen 2004). Rotter's (1966) view was that behaviour is largely guided by "reinforcements" (rewards and punishments) and that through these, individuals come to hold beliefs about what causes their actions. A LOC orientation is a belief about whether the outcomes of our actions are contingent on what we do (internal control orientation) or on events outside our personal control (external control orientation).

Health locus of control comprises three different dimensions: internal HLOC (IHLOC; belief that one's health is controlled by individual health choices), fate or chance HLOC (CHLOC; belief that one's health is down to fate or chance) and powerful others HLOC (POHLOC; belief that health is controlled by healthcare providers). Much of the research has found that the dimensions of HLOC are predictive of health behaviours and outcomes (Norman et al. 1998; O'Hea et al. 2005).

Research on HLOC and health anxiety specifically supports the idea that low IHLOC and high external HLOC (POHLOC and CHLOC) predict higher scores on measures of anxiety (Barlow et al. 2002). The cognitive-behavioural model states that a perceived loss of control increases levels of anxiety (Lazarus and Folkman 1984). Garcia-Campayo et al. (2010) suggests that an increase in IHLOC, might be a key ingredient in reducing anxiety. This may be because they

feel more able to change and cope with the stressor, whilst those with an external health locus of control are usually less able to adapt or cope (Bergner et al., 2008).

Despite the relevance of LOC on health, few studies have examined it amongst women experiencing miscarriage or its possible relationship with psychological wellbeing post miscarriage. Klock et al. (1997), however, did find that many women feel personally powerless over recurrent miscarriage, with repeated pregnancy failure undermining a woman's sense of control over her reproductive life. Franche and Mikail (1999) showed that pregnancy specific anxiety for women with previous loss was associated with higher levels of internal fetal health locus of control.

Furthermore, Bodecs et al. (2011) observed that an internal HLOC was associated with healthy behaviours, whilst an external HLOC was related to unhealthy behavioural tendencies during pregnancy.

#### **2.4.7 Social support**

Social support is often included in research studies within the stress and coping framework. The concept of social support began to receive major attention in the 1970's, principally through the work of Antonovsky (1979), which examined factors that could ameliorate the effects of negative life events. Perceived social support refers to the belief that when support is needed, others will be ready to provide it (Pierce et al. 1996).

Perceived social support is an indicator of the adequacy of social support (i.e., network and support received) in relation to the expectations and needs of an individual (Lakey and Cohen 2000) and has been found to relate significantly to health (Cohen and Syme 1985). What is perceived as available may or may not, however, correspond to what is actually provided.

The concept of social support has been defined in a variety of ways (Hupcey 1998). Vaux (1985) defined it as a process in which persons manage their social resources to meet social needs, which comprises three main constructs: support networks such as significant others, family and friends; supportive behaviour and appraisal of support. Social support can therefore be defined as a social network's provision of psychological and material resources, intended to benefit an individual's ability to help them cope with a stressful event.

Theorists have argued that social support reduces or buffers the adverse psychological impacts of exposure to negative life events (Kaplan, Cassel and Gore 1977; Cobb 1976). For example, higher levels of social support have been found to attenuate maternal antenatal stress (Ruckstuhl et al. 2010). Social support potentially provides the resources that are important in gaining control and coping with stressors. A lack of social support, on the other

hand, is associated with reduced psychological wellbeing (Lara, Leader and Klein 1997; Sarason, Sarason and Pierce 1990). Indeed a lack of social support is a strong risk factor for depression in pregnancy (Adewuya 2007; Ross et al. 2004) and during the postpartum period (Robertson et al. 2004; Beck 2001).

Social support has received increased attention as a possible moderating factor to the observed variances in psychological adjustment following miscarriage (James and Kristiansen 1995). Indeed, a lack of social support has been associated with increased psychological distress, both around the time of the miscarriage (Beutel et al. 1996), and 2 years after miscarriage (Cordle and Prettyman 1994).

However, there is a lack of consensus about what constitutes social support for women following miscarriage, resulting in a lack of consistency and comparability between studies. In a study to examine definitions of social support from the general literature, 30 definitions were identified (Williams, Barclay and Schmied 2004). The critical analysis done by Williams, Barclay and Schmied (2004) identified a number of categories in these definitions both shared and unique. These categories include notions of time (short and long term) and the timing (when); supportive features such as emotional, informational and instrumental; impact of support (positive or negative); perception of support; actual support; satisfaction with support; characteristics of recipient; and characteristics of the provider.

Miscarriage has lacked recognition as a bereavement in comparison to other types of loss, and consequently emotional and social support may be absent or diminished (Simmons et al. 2006). The lack of rites, rituals or acknowledgements may prevent access to social support and closure of the life event for some women. Indeed many women find that partners, family and friends are uncomfortable talking about miscarriage (Rajan and Oakley 1993). Cecil (1994) found that while support came mostly from the woman's partner or mother, family support may be inadequate, and was for many women frequently unavailable, inappropriate, or of limited duration. It has been shown that the availability of social support has significant implications for the mourning process, owing to its therapeutic effect on the emotional wellbeing of women, legitimising their needs and enhancing their capability to exercise autonomy (Rajan 1994). Lee and Slade (1996) found that study participants consistently reported "just having someone to talk to, someone who listened was helpful" (p. 56), thus highlighting the need for and benefits of a supportive network.

Social support, both from their significant other, family and friends is very important for women after miscarriage in terms of psychological wellbeing (Sejourne, Callahan and Chabrol 2010; Cecil 1994). Cordle and Prettyman (1994) found that lower levels of psychological wellbeing

in women following miscarriage were related to low levels of social support from the woman's significant other. Whilst Maker and Ogden (2003) noted that women who were able to compare their situations with others' had improved self-esteem, demonstrating the benefit of speaking to women who have personal experience of miscarriage.

A lack of community support and poor experiences of healthcare has been found to affect women's ability to cope following miscarriage (Abboud and Liamputtong 2005). Whilst supportive care from professionals can be helpful after miscarriage (Wojnar, Swanson and Adolfsson 2011); studies identified the need for more supportive care after miscarriage and during the next pregnancy (Sejourne, Callahan and Chabrol 2010). Despite the fact that support groups may be beneficial, there is little research on support services or bereavement groups, to assess how helpful they are for women and their partners.

Barrera (2000) suggest that supportive individuals provide emotional support, informational support, tangible support and belonging support. Emotional support includes expressions of comfort and caring, informational support includes the provision of advice and guidance, tangible support includes the provision of material assistance, and belonging support includes shared social activities providing a sense of belonging.

Much of the research in the general literature predicts that social support diminishes or buffers the deleterious effects of stress in a person's life, whilst others suggest that social support is beneficial irrespective of life stress (Cohen and Willis 1985). The limited and sometimes contradictory research looking at social support as a protective factor to enhance psychological wellbeing in miscarriage women, demonstrates a gap in the literature.

#### **2.4.8 Coping style**

Coping style typifies one's style of managing person-environment interactions (Compas et al. 2001). Research into health and wellbeing is increasingly incorporating health psychology to learn more about adaptive ways of coping, and to understand how participants diminish the burden of stress, in an attempt to limit the recurrence or improve the course of many illnesses (Lazarus 2000). There are two main assumptions inherent within this approach to coping, firstly coping is situation-specific as opposed to being a personality or style, and secondly, there is no one universally effective or ineffective coping style, rather it depends on the requirements for each individual situation.

As defined by Lazarus and Folkman (1984), coping style refers to specific efforts, both behavioural and psychological, that people use to master, tolerate, reduce or minimize stressful events. Coping style is one of the factors that has been shown to mitigate the

relationship between life stress and psychological functioning (Lazarus 1999). The concept of coping style is a complex, multidimensional process that can be sensitive to the demands of the individuals' internal state as well as their external environment (Carver and Connor-Smith 2010). Adaptive coping styles are thought to be largely task and emotion focused, to include planning, seeking support and advice from others, positive reinterpretation of events, humour and drawing on religious faith (Carver, Scheier and Weintraub 1989).

A task focused coping style may include problem solving, changing the situation, seeking support or changing something about the self in order to deal with the situation. Emotion focused coping involves expressing their feelings and emotions with others, to manage the emotions generated by the stressor. General research on coping has shown that neither task-focused nor emotion focused coping per se are superior when dealing with stress (Park, Folkman and Bostrom 2001). When direct action is possible, task focused coping has often been found to be superior, when direct action to remove stressors is hampered, emotion focused coping has often been found to be superior (Lazarus 1999). Population studies have shown a link between coping style and psychological wellbeing, with task and emotion focused coping styles shown to reduce stress (Taylor, Buunk and Aspinwall 1990; Gibbons and Gerrard 1989).

An avoidant coping style involves deliberate cognitive attempts to avoid acknowledging the existence of a stressor, denying that the situation exists, with a tendency to avoid thinking about it. Complete denial and suppression of emotions may lead to increased chances of poorer health outcomes (Pennebaker, Colder and Sharp 1990).

A self-blame coping style indicates that participants are more likely to blame themselves for the situation rather than something or someone else. In the general literature, a more pessimistic, attributional style i.e. attributing the cause of something to oneself has been the most widely replicated cognitive markers of depression (Hyde, Mezulis and Abramson 2008) however, other studies have shown that external attributions are more closely aligned to maladjustment (Field and Bonanno 2001). Following miscarriage, the uncertainty surrounding the reasons for the loss may result in feelings of guilt (Adolfsson et al. 2004; Barr 2004) and self-blame (Stirtzinger and Robinson 1989). Franche (2001) found that high levels of self-criticism were a predictor of increased grief during a pregnancy after a miscarriage or perinatal death. It has been suggested that when counselling is provided to women, guilt experienced about miscarriage should be addressed first (Griebel et al. 2005; Broquet 1999). Callander et al. (2007) explored the influence of counterfactual thinking, relating to "what if" and self-blaming thoughts such as "if only I hadn't .....then the miscarriage wouldn't have happened", and these types of thoughts were significantly related to higher levels of anxiety and depression.

Nikcevic et al. (1998) found a relationship between self-blame for miscarriage and symptoms of anxiety and depression, with higher feelings of personal responsibility related to higher levels of anxiety and depression, suggesting that reducing women's self-blame may reduce the negative emotional impact of miscarriage.

Callander et al. (2007) found that whilst future plans were not related to lower distress in miscarriage women, there was evidence that a search for meaning was inversely related to distress. Much of the literature on miscarriage and coping style tends to report those styles associated with maladaptation rather than adaptive outcomes (Bergner et al. 2008). Women, who report a difficulty in coping following miscarriage, may have more difficulty in adjusting (Adolfsson, Bertero and Larsson 2006).

Swanson (2000) found passive coping (wishful thinking, self-blaming or ignoring the situation) was predictive of an increase in depressive symptoms at 1 year after miscarriage. Sejourne, Callahan and Chabrol (2010) found the most frequently used strategy for coping with miscarriage was seeking information, however it was not reported whether or not this was helpful in terms of enhancing psychological wellbeing. Little informational support is provided to women about miscarriage, in particular the psychological effect of losing a potential baby (Moohan, Ashe and Cecil 1994). A study of 37 women with recurrent miscarriage found very high levels of anxiety were related to intrusive and avoidant style coping (Rowsell et al. 2001).

Marquardt (2011) highlights the need for healthcare professionals to help women understand that they are usually not accountable for the miscarriage, which may help in reducing their sense of guilt and self-blame.

Research that examines different coping styles and their adaptive potential for protecting and promoting psychological wellbeing following miscarriage may help to understand the variability in women's responses. But the evidence is limited, with few studies examining coping styles following miscarriage, particularly coping styles that are potentially more protective, thus identifying a need for further research.

#### **2.4.9 Resilience**

Research in the area of resilience has previously been focused on positive outcomes of stress. Resilience is the capacity to adapt and overcome stressful life events whilst maintaining normal psychological and physical functioning (Russo et al. 2012). It relates to personal strength that may help people cope with adversity, and may be conceptualised as an aspect of health potential. For individuals who are more resilient, distress reactions following traumatic events are usually mild and transient and tend not to interfere with their ongoing ability to function (Bonanno 2004). However, even resilient individuals will experience some distress during or

in the immediate aftermath of a traumatic life event; therefore it is important to understand the resilient trajectory. O'Leary (1998) suggests that resilience implies moving beyond survival and recovery to address thriving in the face of adversity. Zautra, Hall and Murray (2010) see the concept of resilience as an outcome in itself, in that the individual who is able to weather a stressful situation in a more positive manner than others would be viewed as resilient. The resilient individual is one more likely to engage in problem-orientated coping, exhibit higher levels of perceived control with increased positive emotionality (Southwick, Vythilingham and Charney 2005). Resilience is dynamic and takes into account the past and the future, whereby a person can build resilience, which may help them to cope with problems such as miscarriage. It has been defined from three different perspectives - personal capacity, process and outcome (Woodgate 1999), therefore buffering the effects of stressful life events (such as miscarriage).

There are numerous definitions of resilience (Ahern et al. 2006). Luthar, Cicchetti and Becker (2000) define resilience as a dynamic process comprising positive adaption with significant adversity. Indeed, certain definitions see the concept more as an outcome itself, in that the individual who is able to weather a stressful situation in a more positive manner than others would be viewed as resilient (Zautra, Hall and Murray 2010). The Medical Research Council (MRC) and the Economic and Social Research Council in the UK, have identified resilience as an important factor for lifelong health and wellbeing (MRC 2010). The complexity of defining the construct of resilience has been widely recognised (Luthar, Cicchetti and Becker 2000), and there have been differing approaches to measuring resilience, leading to inconsistencies. Most literature on resilience has suggested that it is considered as a personality characteristic that moderates the negative effects of stress and promotes adaptation (Ahern et al. 2006).

Luthar and Brown (2007) have emphasised that the theory of resilience is about relationships, suggesting that when everyday relationships reflect abuse, rancour and insecurity, this profoundly threatens resilience while conversely relationships based on love, comfort and security foster resilience. Werner (1990) states that protective factors of individual resilience are categorised within three conditions: protective factors within the individual (self-help skills, positive self-concepts, strong motivation to achieve); protective factors within the social support network (supportive family including extended family, close bonds with healthcare professionals) and protective factors in the community (e.g. supportive close peer friends).

Very few studies, however, have investigated the link between resilience and psychological wellbeing following miscarriage. Engelhard, Van Den Hout and Vlaeyen (2003) found a stronger SOC (sense of coherence) in early pregnancy was associated with lower levels of post-traumatic stress disorder and depression after pregnancy loss, suggesting that SOC acts as a resilience factor for distress (Engelhard, Van Den Hout and Vlaeyen 2003). The lack of



research using the measurement of resilience in women following miscarriage provides a pressing need for further work in this area. Understanding the links between resilience and wellbeing may help to identify those who are more able to cope following miscarriage.

## **2.5 Interventions Following Miscarriage**

The benefits of interventions to enhance psychological wellbeing following miscarriage are inconsistent and inconclusive.

Three randomised controlled trials evaluated follow-up after miscarriage using the HADS (Sejourne, Callahan and Chabrol 2010; Lee and Slade 1996), comparing a single psychological counselling session with no psychological counselling and found that levels of anxiety and depression decreased over time and that psychological counselling resulted in lower levels of anxiety and depression, however, this was not the case in a study by Nikcevic, Kuczmierczyk and Nicolaides (2007) which saw an increase in anxiety and depression at 7 weeks.

In order to review previous research on intervention design, data were extracted into a tabular format which included study design; details of intervention and effect size based on mean difference between the intervention and control groups (see Table 2.2).

**Table 2.2: One psychological counselling session compared with no psychological counselling session using the HADS (Zigmond and Snaith 1983)**

Authors	Design	Details of intervention	One psychological counselling session Mean (SD)	No psychological counselling Mean (SD)	Effect Mean Difference
Sejourne, Callahan and Chabrol (2010)	RCT Intervention 4 days post miscarriage	Mean length of counselling session=37 minutes (SD=14.38), within 4 days after miscarriage.  Follow-up phone call two weeks after session	At 3 weeks n=50: Mean anxiety 7.21 (SD=3.02)	At 3 weeks n=52: Mean anxiety 9.06 (SD=3.95)	MD in anxiety 1.85 lower
			Mean depression 3.93 (SD=3.38)	Mean depression 5.08 (SD=3.6)	MD in depression 1.15 lower
			At 10 weeks n=45	At 10 weeks n=37	
			Mean anxiety 6.22 (SD=3.52)	Mean anxiety 7.16 (SD=4.25)	MD in anxiety 0.94 lower
			Mean depression 3.0 (SD=2.46)	Mean depression 3.48 (SD=3.2)	MD in depression 0.48 lower
			At 6 months n=33	At 6 months n=34	
			Mean anxiety 5.33 (SD=3.42)	Mean anxiety 6.5 (SD=3.49)	MD in anxiety 1.17 lower
			Mean depression 2.24 (SD=2.79)	Mean depression 2.44 (SD=2.5)	MD in depression 0.2 lower

**Table 2.2: One psychological counselling session compared with no psychological counselling session using the HADS (Zigmond and Snaith 1983) (continued)**

Authors	Design	Details of intervention	One psychological counselling session Mean (SD)	No psychological counselling Mean (SD)	Effect Mean Difference
Nikcevic, Kuczmierczyk & Nicolaides (2007)	RCT 5 weeks post miscarriage	50 min psychological counselling session with a psychologist at 5 weeks after miscarriage	At 7 weeks n=33: Mean anxiety 7.2 (SD=5.2)	At 7 weeks n=33: Mean anxiety 6.7 (SD=4.1)	MD in anxiety 0.05 higher
			Mean depression 4.1 (SD=4.2)	Mean depression 3.34 (SD=2.9)	MD in depression 0.7 higher
			At 4 months n=33	At 4 months n=33	
			Mean anxiety 5.6 (SD=4.5)	Mean anxiety 7 (SD=4.4)	MD in anxiety 1.4 lower
Lee and Slade (1996)	RCT 2 weeks post miscarriage in woman's home	60 min psychological debriefing session with female psychologist within two weeks of miscarriage, in woman's home	Mean depression 2.8 (SD=4.1)	Mean depression 3.7 (SD=3.7)	MD in depression 0.9 lower
			At 4 months n=21 Mean anxiety 7.4 (SD=5.9)	At 4 months n=18 Mean anxiety 8.1 (SD=6.2)	MD in anxiety 0.7 lower
			Mean depression 3.2 (SD=4.2)	Mean depression 4.8 (SD=7)	MD in depression 1.6 lower

The studies in Table 2.2 collectively demonstrate that levels of anxiety and depression decreased over time and that psychological counselling resulted in lower levels of anxiety and depression, apart from Nikcevic, Kuczmierczyk and Nicolaides (2007), where levels were higher at 7 weeks, but decreased at 4 months. Nikcevic, Kuczmierczyk and Nicolaides (2007) also found that anxiety did not decrease with time when there was no identifiable cause for the miscarriage. Sejourne, Callahan and Chabrol (2010) found that anxiety at 3 weeks was significantly lower in women who received psychological counselling within 4 days of miscarriage compared to women who did not receive psychological counselling. The remaining studies found no statistically significant difference in anxiety or depression levels between intervention groups versus control groups at the different time points (Sejourne, Callahan and Chabrol 2010; Lee and Slade 1996). However, these studies are limited by small numbers of participants and failure to focus on women in need of such intervention, i.e. those showing elevated levels of anxiety or depression.

Kong, Chung and Lok (2014), in a randomised controlled trial in Hong Kong, assessed the effectiveness of supportive counselling compared to routine care after miscarriage using the General Health Questionnaire (GHQ-12; Goldberg 1978) and Beck Depression Inventory (BDI; Beck 1961). There were no differences found in the psychometric scores between the supportive counselling group and the control group at any of the three time points, as demonstrated in Table 2.3. The results of the study did not justify routine counselling for all women following miscarriage; the limitations of the study were in relation to high rates of attrition (27%) and the inclusion of women with a range of psychological wellbeing scores. This may mean that those not so distressed are less likely to benefit from counselling, diluting the overall effect of the intervention. The study findings may not be applicable in the UK, as there may be cultural differences and differences in healthcare provision following miscarriage.

**Table 2.3: Two supportive counselling sessions compared with routine care using the GHQ-12 and BDI**

Authors	Design	Details of intervention	One psychological counselling session Mean (SD)	No psychological counselling Mean (SD)	Effect Mean Difference
Kong, Chung and Lok (2014) in Hong Kong recruited in 2004-2005	Randomised controlled trial Intervention Mean time from miscarriage to enrolment=7.88 days+ or -7.5	2 supportive counselling sessions at baseline (prior to discharge for 1 hour) and 2 weeks after study enrolment (over telephone for 30 minutes) from a nurse counsellor.	At 6 weeks n=132: Median GhQ-12 3 (IQR=0-6) Median BDI 4 (IQR=2-12)	At 6 weeks n=136: Median GhQ-12 3 (IQR=0-7) Median BDI 7 (IQR=2-13)	MD in depression 3 lower          MD in depression 1 lower
			At 3 months n=132 Median GhQ-12 1 (IQR=0-3) Median BDI	At 3 months n=136 Median GhQ-12 1 (IQR=0-4.75) Median BDI	
			3 (IQR=0-7) Median BDI	4 (IQR=1-10)	
			At 6 months n=132 Median GhQ-12 0 (IQR=0-3) Median BDI	At 6 months n=136 Median GhQ-12 1 (IQR=0-3) Median BDI	
			2 (IQR=0-7)	2 (IQR=0-8.75)	

When comparing three psychological counselling sessions with no psychological counselling session, Swanson (1999) found a reduction in anxiety and depression levels (as measured by the Profile of Mood States Scale) at all time points (6 weeks, 4 months and 12 months), and these improved with time in both groups (see Table 2.4).

**Table 2.4: Three psychological counselling sessions compared with no psychological counselling session using the Profile of Mood States Scale**

Authors	Design	Details of intervention	One psychological counselling session Mean (SD)	No psychological counselling Mean (SD)	Effect Mean Difference
Swanson (1999)	Randomised Trial Intervention Mean time from miscarriage to enrolment=7.88 days+ or -7.5	3 one hour counselling session at 1, 5 and 11 weeks after study enrolment.	At 6 weeks n=43: Mean anxiety 10 (SD=5.4) Mean depression 12.1 (SD=11) At 4 months n=43 Mean anxiety 10.9 (SD=6.8) Mean depression 9.8 (SD=8.7) At 12 months n=43 Mean anxiety 8.7 (SD=5.6) Mean depression 8.4 (SD=9.3)	At 6 weeks n=40: Mean anxiety 11.5 (SD=7.3) Mean depression 14.8 (SD=12.7) At 4 months n=40 Mean anxiety 11 (SD=7.3) Mean depression 12.6 (SD=13.7) At 12 months n=40 Mean anxiety 9.3 (SD=7.3) Mean depression 11.4 (SD=14.5)	MD in anxiety 1.5 lower MD in depression 2.7 lower MD in anxiety 0.1 lower MD in depression 2.8 lower MD in anxiety 0.6 lower MD in depression 3 lower

There were no statistically significant differences between the groups for anxiety or depression at the different time points (Swanson 1999), but again the sample size was small and included women with a range of psychological wellbeing scores.

Neugebauer et al. (2007) also found no statistically significant difference in depression as measured by the Hamilton Rating Scale for Depression 9 weeks post-miscarriage, in women who received up to a maximum of six sessions of psychological counselling compared with women who received treatment as usual.

Swanson et al. (2009) compared 'nurse care' (three 1 hour counselling sessions with a nurse counsellor) with 'self-care' (three 18 minute videos where couples are coached in self-care, plus a workbook for each partner), 'combined care' (one 1 hour counselling session with a nurse counsellor followed by the 'self-care' intervention) or 'control' (no follow up). The study reported a faster rate of recovery as measured using the Centre for Epidemiologic Studies-Depression Scale (CES-D; Radloff 1991) at three time points (3, 5 and 13 months post miscarriage) in all three groups compared with the women receiving no treatment however, only the 'nurse care' group reached statistical significance.

Lok (2006) in a RCT (randomised controlled trial) grouped women with miscarriage (defined as miscarriage up to 24 weeks gestation) into one of two groups; group 1 received a one hour counselling session by a nurse at baseline and a second 30 minute telephone counselling session two weeks later; whilst group 2 received no formal follow-up. Assessment using the General health Questionnaire (GHQ-12; Goldberg 1978) and Beck's Depression Inventory (BDI; Beck 1961) at baseline, 6 weeks, 3 and 6 months post miscarriage, found no statistically significant differences between the two groups.

A small study (Johnson and Langford 2015) using the Perinatal Grief Scale, where participants (n=40) were randomly assigned to a grief intervention treatment group or usual standard care, found the intervention group had significantly lower levels of despair. Despite the limitations of the study and the limited findings, they recommended that a bereavement intervention administered immediately after loss, promotes women's ability to cope with miscarriage.

Collectively, the studies demonstrate some reduction in psychological distress following post-miscarriage follow-up, but the effect is small and not significant. However, supportive counselling for selected women with high levels of psychological distress warrants further investigation (Kong, Chung and Lok, 2014). By including women with a range of distress it is difficult to identify the benefit to those in need of intervention. In addition, given the limited research aimed at identifying the predictors/moderators of wellbeing following miscarriage; such interventions are neither evidence-based nor grounded in theory. Interventions which are

grounded in theory may potentially have a greater effect. Seminal work (Thapar and Thapar 1992) identified that anxiety is a feature for some women following miscarriage. However, there is no evidence of any intervention studies aimed specifically at reducing anxiety for those with high anxiety, undertaken for women following miscarriage, in the UK.

A Cochrane Systematic Review on psychological wellbeing following miscarriage found that evidence was insufficient to demonstrate the superiority of either psychological support such as counselling or no intervention post-miscarriage (Murphy, Lipp and Powles 2012). The Systematic Review by Murphy, Lipp and Powles (2012) commented on difficulties related to the wide range of outcome measures used, recommending that future research use standardised measures with an economic evaluation included in the assessment of any intervention. The studies were limited by small numbers of participants and included all women, rather than a targeted intervention for women who had an increased need for psychological support. The data were collected retrospectively resulting in potential recall bias and there were differing time points between the studies as to when the assessments took place. The majority of studies included in the Review (Murphy, Lipp and Powles 2012) lacked power, and the two larger studies included such a complex combination of interventions and outcome measures that any potentially significant effects may have been diluted. In addition, a theoretical basis for the specific timing of initial and subsequent follow up assessments was not always provided.

Interventions that include women who have no problems with adjustment dilute any effect on outcome measures. Intervention studies that report mean scores for anxiety and or depression include women without caseness and with caseness. Future studies should target women who have caseness, so that follow up is tailored to treat women who require support, rather than dilute the study results by including women who do not require support. It is logical to understand more about what effective support is, so that care is more individualised and proactive, with the aim of creating a therapeutic, healing effect for those who need it.

The lack of understanding and empathy on the significance of the impact on psychological wellbeing by some practitioners' may lead to anxiety, helplessness and further frustration in women (Montero et al. 2011). Disagreement exists as to how improvement in the care given to women who miscarry, can be best achieved (Evans et al. 2002). Wong et al. (2003) examined healthcare professionals' and patients' attitudes towards the psychological impact of miscarriage, and found a higher proportion of patients compared with health professionals believed that routine follow up support to improve psychological wellbeing, should be provided after miscarriage.



Few patients agreed that the primary healthcare professionals were the most suitable to provide this care, although most healthcare professionals thought this to be appropriate. They concluded that healthcare professionals need to be more aware of the psychological impact of miscarriage and require greater sensitivity to what is currently an unmet need for psychological care (Wong et al. 2003). Support to improve knowledge, skills and ability to better manage bereavement care following miscarriage for women, their partner and healthcare professionals should be promoted (Montero et al. 2011).

## **2.6 Psychological Wellbeing in Subsequent Pregnancy**

There is evidence that women with miscarriage may experience reduced psychological wellbeing in a subsequent pregnancy (Blackmore et al. 2011; Woods-Giscombe, Lobel and Crandell 2010; Fertl et al. 2009; Cote-Arsenault 2007; Geller, Kerns and Klier 2004). Bhattacharya et al. (2008) found that not only are women more likely to experience further miscarriage, an initial miscarriage also places women at an increased risk of complications in a subsequent pregnancy. Women who have miscarried are more likely to experience preterm birth, induced labour and postpartum haemorrhage in their next pregnancy (Bhattacharya et al. 2008), as well as higher levels of anxiety and depression (Fontein-Kuipers et al. 2015, Cumming et al. 2007). Women with a history of miscarriage were found to be more vulnerable to depression one month postpartum than women without prior miscarriage (Kinsey et al. 2015).

Using the State-Trait Anxiety Scale and the Beck Depression Inventory, Franche and McKail (1999) found that women who had early pregnancy loss experienced mild depressive symptoms and elevated anxiety specific to pregnancy outcome relative to the CG, during the next pregnancy. Higher levels of anxiety in women with a previous loss compared to a CG, corroborates the finding that anxiety is a hallmark of a pregnancy following perinatal loss (Franche and McKail 1999). Studies have demonstrated that pregnancy after loss is characterised by hypervigilance (Phipps 1985) and the fear of losing a future pregnancy is the most prevalent concern according to 82% of these women (Sejourne, Callahan and Chabrol 2010).

There is evidence of higher levels of anxiety and depression in the pregnant population (Bauer, Knapp and Parsonage 2016), with the majority of women remaining undiagnosed and untreated (Andersson et al. 2003). The association of anxiety and depression in pregnancy with decreased infant birth weight (Wadwha 2005) and preterm birth (Field, Diego and Hernandez-Reif 2006) demonstrate the need for a more proactive approach for women following miscarriage. Women following miscarriage tend to utilise more healthcare resources

in subsequent pregnancies, due to increased maternal anxiety and depressive symptoms (Hutti, Armstrong and Myers 2011). Qualitative studies of pregnant women with a history of miscarriage have shown that they often distance themselves from the pregnancy and are cautious about experiencing joy associated with pregnancy (Adolfsson, Johansson and Nilsson 2012). Collectively, these findings demonstrate the need to identify the predictors/moderators of wellbeing post-miscarriage in order to inform psychological care/follow up to enhance wellbeing post-miscarriage and in subsequent pregnancies.

## **2.7 Rationale for Current Study**

Evidence from the literature clearly identifies that miscarriage is commonly associated with some degree of heightened anxiety and depression. The variance in prevalence of anxiety and depression across studies may be due to the different diagnostic measures being used, the different time points of assessment and the different populations of women and comparison groups studied (Geller, Kerns and Klier 2004). Regardless of this, there is consensus that the negative impact on psychological wellbeing is both substantial and lasting for some.

Comparative studies provide support for the claim that psychological wellbeing is significantly and negatively affected following miscarriage, in comparison to other cohorts of women. However, the majority of studies lack a comparative group of women who are similar in age, total number of years in education and SIMD score who have not been exposed to miscarriage. Inclusion of such a group will increase confidence that any alterations in anxiety, depression or wellbeing are in fact a consequence of miscarriage.

There is still a limited understanding of the psychological impact of and the factors that help women cope with miscarriage.

There are, however, large individual differences in the response to miscarriage suggesting response is individualised and complex. There are numerous factors which appear to moderate the relationship between miscarriage and psychological wellbeing, including pregnancy status at 1 year (Swanson et al. 2007), further negative events at 1 year (Swanson et al. 2007), previous psychiatric history (Walker and Davidson 2001), a search for meaning (Callander et al 2007), sense of coherence (Engelhard, Van Den Hout and Vlaeyen 2003), levels of personhood (Magee et al 2003; Cote-Arsenault and Dombek 2001), with the most influential including self-blame (Marquardt 2011; Nikcevic et al. 1998; Defrain, Millspaugh & Xie 1996) and a lack of social support (Abboud and Liamputtong 2005; Lasker and Toedter 2003; Beutel et al. 1996; Defrain, Millspaugh & Xie 1996; Cordle and Prettyman 1994). A limited amount of research, however, has been carried out in this area. Indeed, the majority of research has focused on the pathological approach rather than aiming to identify the salutary

factors, i.e. those that enhance women's psychological wellbeing over time. Using the salutogenic perspective developed by Antonovsky (1979), could add an important new facet to pathogenesis, which is complementary and not oppositional, building on the existing body of knowledge. In order to design effective interventions to enhance psychological wellbeing, there is a need to increase understanding of the salutary factors.

## **2.8 Salutogenic Perspective**

The term salutogenesis deriving from the Latin *salus* (health) and the Greek *genesis* (origin) originates from the work of Aaron Antonovsky, who developed the term from his studies on how people manage stress and stay well (1979, 1993 and 1996). Salutogenic research stems from the narratives of the survivors of the Holocaust, and resulted in a paradigm shift from the pathogenic to the salutogenic perspective on health (Antonovsky 1979). His studies highlighted that regardless of major stressful situations and severe hardships, some people stay healthy while others do not, thus suggesting that health is not a matter of chance (Antonovsky 1979). Eriksson and Lindström (2008) state that salutogenesis moves people in the direction of positive health and enhancement of wellbeing, on what Antonovsky referred to as a health-ease/disease continuum (Antonovsky 1996).

It is particularly useful to health promotion research because it (i) relates to the ways in which individuals understand the situations they find themselves in, (ii) suggests reasons to improve health and (iii) identifies the necessary power and resources to cope with the adversities inherent in life (Lindström and Eriksson, 2005). The strength based approach accentuates positive ability, capability and capacity to identify problems and active solutions, to promote and enhance the wellbeing of individuals, with the hope that it leads to increased self-care, which will result in less reliance on health services. Providing women with opportunities to experience and accumulate the positive effects of protective factors (health assets), the more likely they are to achieve and sustain health and wellbeing later in life (Morgan 2010).

Employing the salutogenic perspective, in relation to what enhances wellbeing following miscarriage, will allow researchers to understand how women experience miscarriage and stay well (Antonovsky 1987). This is in line with current health policy, which aims to improve the quality of care and support provided by NHS services, for women who require early psychological intervention (Scottish Government 2011). In addition, to promote and improve health and wellbeing (Scottish Government 2009), where activity is around identifying protective factors in relation to psychological wellbeing for women following miscarriage.

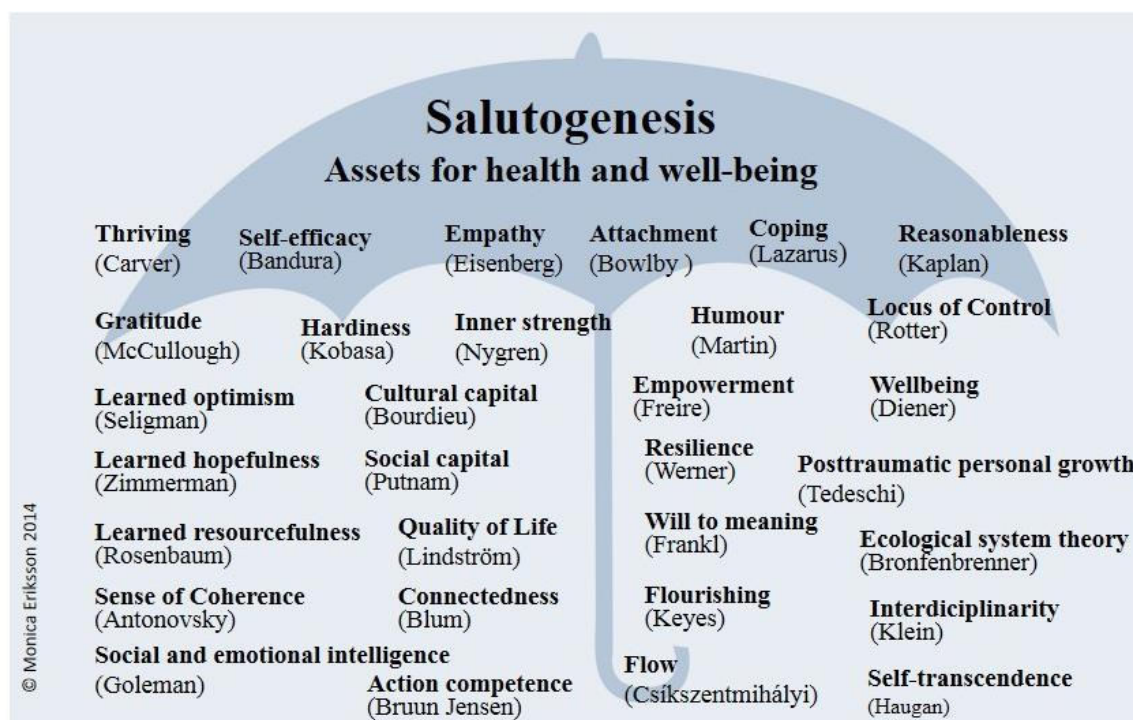
Epistemology is the study of the nature of knowledge, how we understand our world and relate this to the understanding of theories of what constitutes human knowledge, and is concerned

with questioning and understanding how we know what we know (Cluett and Bluff 2006). Antonovsky (1979) argued that it is only when we ask why people stay healthy that we begin to increase knowledge of the factors that can promote health, despite adverse life events such as miscarriage.

Salutogenesis supports the philosophical and practical intentions of the Ottawa Charter (WHO 1986), as it contributes to understanding the maintenance and development of health (Eriksson and Lindström 2008).

Antonovsky (1979) described “Generalized Resistance Resources” that can support wellbeing in the context of adverse life events like miscarriage. These include both internal resources (health locus of control, coping style and resilience) as well as external resources (such as social support and ease of access to healthcare provision). The capacity to use these resources to enhance psychological wellbeing is termed sense of coherence (SOC), i.e. the way an individual copes with stressors like miscarriage and maintain wellbeing. Women with a strong SOC tend to feel that life is manageable (one has sufficient resources at one’s disposal), meaningful (one is able to cope with life challenges such as miscarriage) and comprehensible (one believes that one understands the life challenge, in this case miscarriage). The ability to comprehend and deal constructively with miscarriage, which leads women to identify the protective factors as resources at their disposal, may strengthen their ability to cope. A low SOC is associated with heightened stress (Jorgensen, Frankowski and Carey 1999).

The Salutogenic Umbrella displayed in Figure 2.1 (Eriksson and Lindström 2014) includes concepts within the salutogenic framework, as they view health as a resource for life and direct actions to solutions.



**Figure 2.1: Salutogenesis: Assets for health and wellbeing (Reproduced with kind permission from Monica Eriksson 2014).**

Despite its potential impact in this area, the salutogenic perspective, has only been described once in the early pregnancy loss literature (Engelhard, Van Den Hout and Vlaeyen 2003), and has not been used at all with this population in the UK. Engelhard, Van Den Hout and Vlaeyen (2003) found that a stronger sense of coherence in early pregnancy renders women resilient to symptoms of post-traumatic stress after pregnancy loss. Clearly, there is limited research focusing on the moderators that predict enhanced psychological wellbeing, that enable women to flourish after miscarriage. Human flourishing is where individuals live within an optimal range of human functioning, one that connotes goodness, growth and resilience (Fredrickson and Kurtz 2011; Fredrickson and Losada 2005).

The salutogenic perspective has been identified as offering the potential to influence a shift away from risk aversion and medicalization, towards a wellbeing focus for maternity care service design in the future (Perez-Botella et al. 2015). There is increasing national and international interest in the concept of mental wellbeing within government policy documents, for example 'Towards a Mentally Flourishing Scotland: Discussion Paper on mental health improvement 2008-2011' (Scottish Government, 2009). However, the salutogenic perspective in the UK is still in its infancy as regards to practically implementing this approach (Brooks and Kendall 2013).

More robust research is needed to further explore such factors so that interventions for those in need of psychological support are based on evidence. Current support is deemed unsatisfactory by many women, both in terms of the behaviour and skills of healthcare professionals and the provision of follow up care post-miscarriage and in subsequent pregnancies. Despite the demand from women, there is limited research evidence for the benefit of intervention, such interventions however lack an evidence base and are not grounded in theory. In view of the above gaps in the literature, this study aims to determine the effects of miscarriage on women's psychological wellbeing and to identify the best predictors of lower anxiety, depression and higher wellbeing across time, and to further explore predictors that enhance psychological wellbeing. Further, to address the limited evidence base for potential moderators of psychological wellbeing, the study aims to employ a salutogenic perspective to explore the influence of health locus of control, perceived social support, coping style and resilience on psychological wellbeing.



## **CHAPTER 3**

### **METHODOLOGY AND METHOD**

This chapter explains the methodology and the method to address the study aims, research objectives and research hypotheses of the thesis. The methodology section includes a discussion about the epistemology and ontology underpinning the research, the rationale for using the mixed-methods sequential explanatory design, and the researcher's philosophical stance. The method section, including the research procedure for the two phases of the study, follows this. In relation to Phase 1, the quantitative study, which determined the impact of miscarriage on psychological wellbeing, there is a description of the research procedure for the two stages, Stage 1 The Comparative Study: Comparing psychological wellbeing and its moderators amongst women with and without miscarriage, and Stage 2, The Prospective Study: Determining the influence of time and moderating factors on psychological wellbeing amongst women following miscarriage, with a discussion and justification for the quantitative instruments used for data collection, and information about how data were analysed. In relation to Phase 2, the qualitative study, there is a description of the study including data collection, analysis and interpretation. Measures that were undertaken to ensure reliability and validity during the quantitative studies, in addition to trustworthiness within the qualitative paradigm (Guba and Lincoln 1989), to demonstrate the credibility, transferability and dependability (Koch 2006) of study findings during Phase 2, are also identified.

#### **3.1 Methodology**

##### **3.1.1 Epistemology and ontology**

Research has been described as being founded on a number of assumptions, which can be categorised on four levels of understanding (Neuman 2005). The first is ontology, that is: what is reality? The second level is epistemology, which is the study of the nature of knowledge, how we understand our world and relate this to the understanding of theories of what makes up human knowledge (Cluett and Bluff 2006). Methodology is the third level, which examines how we understand reality, and the fourth is the methods that enable the researcher to collect evidence about reality. A gap in knowledge led to the identification of suitable methods and an understanding of the epistemological stance, to address the research aims and research objectives of the study.

This research asked important questions about women's experience of miscarriage, reflecting the women's voices, to capture the nature of reality (ontology). Much of the knowledge generated through previous research on miscarriage has taken a pathogenic approach and



focused on the negative impact of miscarriage on women's psychological wellbeing. The factors that protect women from the negative psychological impact of miscarriage, however, are less well known with little research in this area. Given the identified gap in the literature, this study aims to focus on assets for enhanced psychological wellbeing, taking a salutogenic perspective (Antonovsky 1979). Salutogenesis (Antonovsky 1987) recognises that an individual's psycho-social environment can impact on health status, as opposed to the biomedical model which proposes that health is best achieved by identifying and preventing determinants of disease. The review of the literature as discussed in Chapter 2, indicates that health locus of control, social support, coping style, resilience, total number of major life events, satisfaction with experience of health care provision, demographic and reproductive factors may act as protective factors in enhancing wellbeing post miscarriage. Taking a salutogenic perspective, therefore, the quantitative study was designed to measure such factors in relation to enhanced psychological wellbeing (i.e. lower anxiety, lower depression, higher mental wellbeing) opposed to the pathogenic approach, which would focus on lowered psychological wellbeing (i.e. higher anxiety, higher depression, lower mental wellbeing). The justifications for choosing the specific validated measures are discussed in section 3.2.6.2.

The salutogenic perspective informed the analysis. Statistical analysis was carried out to determine the most significant predictors of enhanced psychological wellbeing in Phase 1, to determine improvements in psychological wellbeing over time and to track changes in such predictors over time. When comparing groups emphasis was placed on predictors for those with non-caseness.

The findings from the quantitative study provided a theoretical lens that shaped what was examined in the qualitative study, again using the salutogenic perspective to inform the development of the questions used to further explore the findings and gain increased depth of knowledge. The analysis of the qualitative data explored the salutary factors that were felt to be helpful following their miscarriage, potentially influencing psychological wellbeing. During Phase 2, the salutogenic perspective informed sample selection for interview, as participants were chosen based on their reproductive status, to ensure a broad range were included in the sample, as well as their HADS (Zigmond and Snaith 1983) and WEMWBS (Tennant et al. 2007) scores, to enable the identification of potential enhanced psychological wellbeing.

This study brings together psychology, social science and midwifery to increase understanding of the multiple dimensions of miscarriage, by studying more broadly and thus more inclusively. The purpose of this mixed methods sequential explanatory study was to identify factors contributing to enhanced psychological wellbeing following miscarriage, by obtaining quantitative results from Phase 1 and then following up with nine purposively selected

individuals to explore those results in more depth through a qualitative study using Framework Analysis, in order to uncover what is important to the enhancement of women's psychological wellbeing.

### **3.1.2 Phase 1: quantitative**

The quantitative paradigm is based on positivism, sometimes referred to as the scientific method, which "reflects a deterministic philosophy in which causes probably determine effects or outcomes" (Creswell et al. 2003 p. 7). Science is characterized by empirical research; to test a theory or describe an experience "through observation and measurement in order to predict and control forces that surround us" (O'Leary 2004 p. 5). The ontological position of the quantitative paradigm is that there is only one truth, an objective reality that exists independent of human perception (Sale, Lohfeld and Brazil 2002). Epistemologically, the investigator and investigated are independent things, whereby the investigator is capable of studying a phenomenon without influencing it or being influenced by it as; "inquiry takes place as through a one way mirror" (Guba and Lincoln 1994 p. 110).

The guiding approach for Phase 1, the quantitative study is based on positivism, as it produced numerical data and focused on measuring and analysing relationships between the study variables, within an unbiased framework (Denzin and Lincoln 2002). Knowledge developed from the quantitative approach is based on observation and measurement of the objective reality that exists in the world (Creswell 2014). The quantitative paradigm reflects the need to assess the impact of miscarriage on psychological wellbeing in comparison to women without miscarriage, and to identify the protective factors that enhance psychological wellbeing. In addition, the study included a longitudinal study, to measure the effects of time on psychological wellbeing, with data captured at baseline to examine the initial effect, compared to 6 and 13 months post-miscarriage.

### **3.1.3 Phase 2: qualitative**

Qualitative researchers are concerned with the changing nature of reality created through people's experiences – an evolving reality in which the researcher and researched are mutually interactive and inseparable (Phillips 1988). It is based on an interpretative, naturalistic paradigm as it supports the existence of not just one reality, but of multiple realities that are constructed and context dependent (Lincoln and Guba 1985). The guiding approach for Phase 2, the qualitative study, was to capture women's thoughts and feelings in their own words, of their miscarriage experience, and to further explore the factors identified in Phase 1 that predicted enhanced psychological wellbeing.

As human experience and reality are variable, there are multiple ways of knowing what is known, in order to uncover the knowledge that is embedded in human experience (Weaver and Olson 2006). Knowledge is a social reality, which only comes to light through individual interpretation. Women's experiences of miscarriage and how the researcher interpreted these, suggests an interpretive ontology. The woman's voice is important, because of its usefulness in grounding the research in the real world. Indeed, until a woman's views are heard, how they describe miscarriage and what they felt enhanced their psychological wellbeing, it becomes impossible to gain an in-depth understanding of their experiences. Semi-structured interviews were conducted using open-ended questions, to not limit the participant's choice of answers (Gubrium and Holstein 2002), in order that participants share their own views and experiences.

The qualitative paradigm is based on interpretivism (Altheide and Johnson 1994) and constructivism (Guba and Lincoln 1994). The process of qualitative research was largely inductive; whereby the researcher focused on experiences, thoughts, feelings and behaviour and acknowledges the use of subjectivity (Rees 2011). Qualitative research is concerned with the changing nature of reality created through people's experiences – an evolving reality whereby the researcher and research participant are mutually interactive and inseparable (Phillips 1988).

Reflexivity ensures the trustworthiness of the study findings (Etherington 2004). In the spirit of the researcher's transparency and trustworthiness, the researcher's own values and beliefs as a researcher who has worked for over three decades in the field of midwifery within the NHS are identified, to enable the reader to judge the impact these may have had during data analysis and interpretation. Following the Nursing and Midwifery Council (NMC), The Code (NMC 2015), the preferred ontological and epistemological stance might be one based on hand, brain and heart. This would suggest that equal value is given to a range of ways of knowing, and that knowledge gained will be of value to women who experience miscarriage. Reflexivity was integral to qualitative research, which involved the researcher acknowledging their personal biases and being self-aware (Steen and Roberts 2011), as both the participants and the investigator's interpretations impact on the phenomenon being studied. The personal story from the woman's perspective is explored and her experience is valued and taken seriously.

As a reflexive researcher, it became more apparent during the PhD process that the support midwives are asked to provide is based on limited evidence. In addition, the researcher had personal experience of miscarriage; therefore consideration needs to be given to the impact of this on the findings. What the researcher perceived and observed may have been affected

by personal experience of miscarriage, and the background knowledge as a midwife, which will affect the reality being explored.

Midwifery researchers, in developing an evidence base for excellence in care delivery, often use qualitative methods to address their research aims, as it helps to reflect the caring, woman-centred philosophy of midwifery practice (Cluett and Bluff 2006). According to Creswell (1998 p. 15) “qualitative research is an inquiry process of understanding based on distinct and methodological traditions of inquiry that explore a social or human problem. The researcher builds a complex, holistic picture, analyses words, reports detailed views of informants and conducts the study in a natural setting”. Qualitative research provides the necessary in-depth and exploratory tools, to help understand the how and or why of a given phenomenon (Green and Thorogood 2004). It involves the detailed examination of individuals’ experiences, allowing the participant to tell their story, in their own way and in their own words (Newell and Burnard 2010).

#### **3.1.4 Mixed methods**

There are two dominant research paradigms which have resulted in two research cultures; one professing the ‘superiority of deep, rich, observational data’, and the other ‘of hard, generalizable data’ (Sieber 1973 p. 1335). ‘Paradigm wars’ have developed between the quantitative and qualitative traditions of research methodology (Creswell 2014; Teddlie and Tashakkori 2009; Maxcy 2003; Teddlie Tashakkori 2003). This has resulted in the emergence of a mixed methods approach as an additional form of scientific inquiry; a third paradigm referred to as pragmatism, which combines both quantitative and qualitative methodologies (Creswell 2014; Teddlie and Tashakkori 2009).

The mixed-methods sequential explanatory design of the study meant that the quantitative findings could be used to inform the design of the qualitative aspect of the study. By taking a pragmatic approach and using a mixed methods design, it was anticipated that this would produce the most comprehensive results in relation to psychological wellbeing following miscarriage, recognising both research paradigms as important and useful. Howe (2012) argues that mixed methods allows the researcher to see a problem from different perspectives, and thus to produce a deeper understanding.

The rationale for mixing both kinds of data within one study is grounded in the fact that neither quantitative nor qualitative methods were sufficient, by themselves, to capture the details and trends being examined. The purpose of the study is to draw from the strengths and minimize the weaknesses in both approaches, to understand the research problem more completely

(Creswell 2014). Pragmatism helped to shed light on how the research approaches can be utilised most efficiently (Hoshmand 2003), in a way that offered the best opportunities to achieve the thesis aims and research objectives of the study.

The mixed methods sequential explanatory design involved collecting and analysing first quantitative and then qualitative data in the two consecutive phases within one study, as described in the literature (Creswell 2014; Teddlie and Tashakkori 2009; Creswell et al. 2003). Using this design with two distinct phases, the researcher first collected and analysed the quantitative (numeric) data. The findings that were significantly associated with enhanced psychological wellbeing were further explored during the qualitative (text) data, which were collected and analysed second in the sequence, to elaborate on the quantitative results obtained in the first phase. The qualitative phase built on the first, quantitative phase, and the two phases are connected in the intermediate stage in the study. The rationale for this approach was that the quantitative data and their subsequent analysis provide a general understanding of the research problem. The qualitative data and their analysis refine and explain those statistical results by exploring participants' views in more depth (Creswell 2003). Because the two paradigms do not study the same phenomena, and therefore cannot be combined for cross-validation, it should be acknowledged that they were used in combination for complementary purposes.

The quantitative method took priority, as the quantitative results from the statistical tests were then explored in-depth, influencing the questions explored during the qualitative phase. The decision making process regarding which method took priority was guided by the purpose of the study, and the research aims and research objectives.

The strengths of using this mixed methods design include the straightforwardness and opportunities for the exploration of the quantitative results in more detail, in the qualitative phase. The limitations of this design are the lengthy time it takes to collect the data and feasibility of resources to collect and analyse both types of data (Creswell 2003).

### **3.1.5 Phase1 - Determining the impact of miscarriage on psychological wellbeing**

The following section will discuss the different stages within Phase 1, the quantitative study that includes Stage 1 the comparative study, and Stage 2 the prospective study.

### ***3.1.5.1 Stage 1 - Comparative Study: Comparing psychological wellbeing and its moderators amongst women with and without miscarriage***

The overall aim of the comparative study is to increase the understanding of the effect of miscarriage on women's psychological wellbeing, in comparison to women without miscarriage. Comparative research is seen as something that enhances the solidity of research findings (Pole and Lampard 2002; Bechhofer and Paterson 2012) by increasing our understanding of the effect of one key variable, in this study, miscarriage. Bechhofer and Paterson (2012 p 2) suggest that comparative research lies at the heart of good research design, "Designing a piece of empirical research requires the researcher to decide on the best ways of collecting data in research locales which will permit meaningful and insightful comparisons".

This provides the rationale for the inclusion of a comparative group (CG) of women who are similar to the miscarriage group (MG) in respect of age, ethnic origin, number of years spent in education and area of residence, but without experience of miscarriage or pregnancy within the preceding year. As discussed earlier, much of the previous research around psychological wellbeing and miscarriage has failed to include a representative control group. Without a CG, it is impossible to state, with any certainty that changes in anxiety, depression and wellbeing are due to miscarriage, as opposed to other factors common in women of reproductive age.

Phase 1 Stage 1, aims to examine levels of anxiety, depression and wellbeing in women who have experienced miscarriage, compared to a comparative group of women, who are similar in age and socio-economic status, but without experience of miscarriage. This study also compares health locus of control, perceived social support, coping style and resilience between the groups. The research objectives and research hypotheses are as follows:

#### **Stage 1 - Comparative Study: Research Aims and Research Objectives**

1. To identify and compare anxiety, depression and wellbeing levels in women who have experienced miscarriage with a comparative group of women without experience of miscarriage.
2. To identify and compare health locus of control type, perceived social support, coping style and resilience in women who have experienced miscarriage with a comparative group of women without experience of miscarriage.
3. To identify factors associated with lower anxiety and depression and higher wellbeing, to include health locus of control, perceived social support, coping style and resilience in both groups.

## **Stage 1 - Comparative Study: Research Hypotheses**

The following hypotheses were tested in the Comparative Study:

*H<sub>1</sub>* The Comparative Group (CG) will have lower levels of anxiety, depression and higher wellbeing than the Miscarriage Group (MG).

*H<sub>2</sub>* The MG will differ from the CG in terms of health locus of control, perceived social support, coping style and resilience.

*H<sub>3</sub>* Levels of anxiety, depression and wellbeing will differ according to health locus of control in the MG and CG.

*H<sub>4</sub>* Women with higher levels of perceived social support will have lower levels of anxiety, depression and higher wellbeing in the MG and CG.

*H<sub>5</sub>* Coping style will be related to levels of anxiety, depression and wellbeing in the MG and CG.

*H<sub>6</sub>* Women with higher levels of resilience will have lower levels of anxiety, depression and higher wellbeing in the MG and CG.

### ***3.1.5.2 Stage 2 - Prospective Study: Determining the influence of time and moderating factors on psychological wellbeing amongst women following miscarriage***

The overall aim of the prospective study was to increase our understanding of the effect of miscarriage on women's psychological wellbeing over time, in this case at baseline, 6 and 13 months. Collecting longitudinal data enables the observation of subjects on a number of variables, where the researcher goes back to the same participants over time (Burns and Grove 2010). Prospective studies that capture longitudinal data are vulnerable to attrition and distortion through data loss, with the potential that responders may differ from those who are lost to attrition (Rosenthal and Rosnow 1991), therefore effort was made to reduce loss of participants.

Stage 2 involved a prospective study to examine the initial (baseline) and longer term impact (6 and 13 months) of miscarriage on women's psychological wellbeing. The central aims of the prospective longitudinal study were to examine levels of anxiety, depression and wellbeing following miscarriage at the three time points, and examined the moderating effects of health locus of control, perceived social support, coping style, resilience and experience of healthcare provision. The relationship between health locus of control types, levels of perceived social support, coping style, resilience and satisfaction with experience of healthcare provision; and

anxiety, depression and wellbeing levels were examined. By taking a salutogenic perspective, the study aimed to explore how these individual attributes change over time, especially the substantive predictors of lower anxiety and depression and higher wellbeing levels, thus enabling the identification of women who had enhanced psychological wellbeing (anxiety/depression non-caseness/higher wellbeing) and those who had psychological distress (anxiety/depression caseness/lower wellbeing).

## **Stage 2 - Prospective Study Aims**

The prospective study aimed to determine the effects of miscarriage on women's psychological wellbeing and identified the best predictors of lower anxiety and depression and higher wellbeing at baseline, 6 months and 13 months. The research objectives and research hypotheses were as follows:

### **Stage 2 - Prospective Study: Research Aims and Research Objectives**

1. To identify factors associated with lower anxiety and depression and higher wellbeing following miscarriage at baseline, 6 months and 13 months, to include satisfaction with and experience of healthcare provision, health locus of control, perceived social support, coping style and resilience.
2. To identify additional factors associated with lower anxiety and depression and higher wellbeing following miscarriage at baseline, 6 months and 13 months to include demographics such as age, socioeconomic status, reproductive history and reproductive status.
3. To determine the effects of time on levels of anxiety, depression and wellbeing.

### **Stage 2 - Prospective Study: Research Hypotheses**

The following hypotheses were tested to address the research objectives as stated above:

*H<sub>1</sub>* Levels of anxiety, depression and wellbeing will be related to demographic characteristics.

*H<sub>2</sub>* Levels of anxiety, depression and wellbeing will be related to reproductive history and reproductive status.

*H<sub>3</sub>* Levels of anxiety, depression and wellbeing will be related to satisfaction with, and provision of healthcare.

*H<sub>4</sub>* Time (baseline, 6 months and 13 months) will have an effect on levels of anxiety, depression and wellbeing.

*H<sub>5</sub>* Levels of anxiety, depression and wellbeing will be related to health locus of control.



*H<sub>6</sub>* Women with higher levels of perceived social support will have lower levels of anxiety and depression and increased wellbeing.

*H<sub>7</sub>* Levels of anxiety, depression and wellbeing will be related to coping style.

*H<sub>8</sub>* Women with higher resilience will have lower levels of anxiety and depression and increased wellbeing.

### **3.1.6 Phase 2 - Exploring the predictors of enhanced wellbeing after miscarriage**

Whilst Phase 1 aimed to determine the prevalence, predictors and levels of psychological wellbeing amongst participants, Phase 2, the qualitative study, aimed to further expand our understanding of the nature and focus of such wellbeing, by exploring the predictors of enhanced wellbeing, as identified in Phase 1.

The study aims and research objectives of Phase 2 were to explore the Phase 1 results in greater depth through the use of semi-structured interviews;

- (i) To determine the protective factors (health locus of control, coping style, social support, resilience and experience of healthcare provision) that are most salient in predicting lower anxiety, depression and higher wellbeing,
- (ii) To understand how women enhance psychological wellbeing following miscarriage.

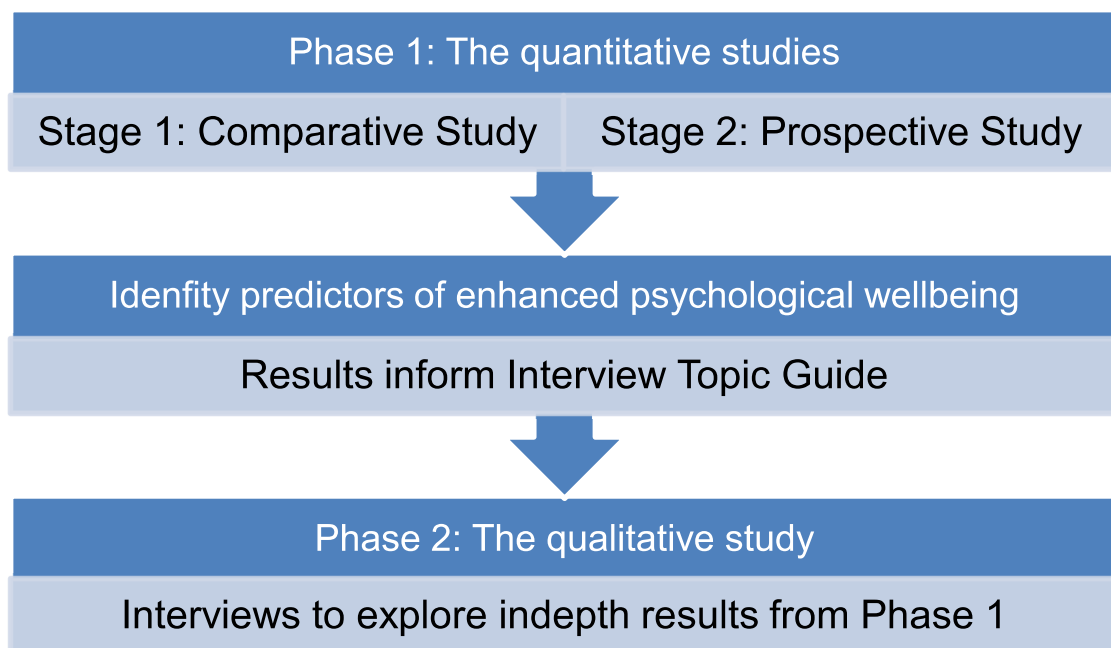
Berg (2001 p. 45) defined interviews as “a conversation with a purpose”. Green and Thorogood (2004) suggest that the interviewer uses the skills of social interaction, where they encourage participants to share their thoughts, feelings and perceptions on a particular topic. Interviews are a method of qualitative inquiry and consist of data gathering through direct interaction between the researcher and the participant, where answers to questions are gathered verbally, on a one-to-one basis. They have the ability to describe, explain and explore issues from the participant or ‘insider’ perspective (Rees 2011).

Based on Antonovsky’s Salutogenic Theory (1987), the qualitative approach was chosen for Phase 2, to allow for a more in-depth exploration of the processes that enhance psychological wellbeing following miscarriage. In order to address the above aims, the semi-structured interviews explored the following research objectives:

- Psychological Wellbeing - women’s feelings and emotional reactions following their miscarriage.

- Social Support - their feelings around the support they received from their significant other, family and friends at the time of miscarriage, after they went home and since the miscarriage.
- Coping Styles - how they felt they coped following miscarriage, including coping styles that helped or hindered their adjustment.
- Health Locus of Control - how they made sense of miscarriage, and health care practices which they felt influenced their wellbeing since the miscarriage.
- Resilience – what assets/strengths influenced their ability to bounce back.
- Experience of healthcare provision - their experiences of care and information including involvement at the time regarding decisions around choices for treatment (if required) and support. Respondent's impression of healthcare provision.

Phases of the mixed-methods sequential explanatory design are demonstrated here:



## **3.2 Method**

The method section comprises the ethical considerations and the procedural steps for data collection and data analysis (Brewer 2000), to achieve the study aims and research objectives of the thesis.

### **3.2.1 Ethical Considerations**

Ethics is defined as a code of behavior considered correct and, as Hauser (2006) describes it, as the study of right and wrong. Within the research context, it refers to the moral principles guiding research, from the beginning until completion, including dissemination and what happens to data following publication (Economic and Social Research Council 2010). The Department of Health (2005) Research Governance Framework is based on the dignity, rights, safety and wellbeing of participants and was the primary consideration in this research study, which included respect for individual autonomy and protection from harm. In addition to the Research Governance Framework (Department of Health 2005), ethical approval was required following the process outlined within the National Research Ethics Service (NRES). Research ethics committees provide independent advice on the extent to which research proposals comply with these ethical guidelines and standards, which promote ethical research that is of potential benefit to participants, science and society. This involved an online application through the Integrated Research Application System, which is the system for applying for approval of health and social care research in the UK.

The North of Scotland, National Research Ethics Service (NRES) and NHS Grampian Research and Development Department granted ethical approval for the study prior to the pilot and main study. In addition, the Robert Gordon University, School of Applied Social Studies, Ethics Review Panel approved the comparative study for women recruited through the University.

### ***Ethical Issues***

The following section identifies and addresses the ethical issues that were considered in the design and conduct of the research study.

### ***Anonymity***

Responses to the questionnaires were received in an anonymous format and were stored according to confidentiality and data protection guidelines. Each consenting participant received a Unique Participant Identification Number, which was used on the questionnaires. Completed questionnaires were stored in a locked room and the Unique Participant Identification Number linking them to their name and address was stored separately in a locked cupboard. Steps were also taken to protect the identity of an individual when presenting research findings, by not including identifying details that might reveal their identity. The recordings were stored in a locked cupboard until transcription was completed, and were then deleted. Transcriptions were stored within a password protected computer, known only to the researcher. Access to the raw data collected during the research was restricted to the research team only.

### ***Informed Consent***

The researcher ensured that participants received sufficient information to make an informed decision, by disclosing full details about the study and ensuring the health care professionals who recruited participants knew that participation was entirely voluntary, and that participants were not under any duress or coercion to participate. Respecting the individual's right to make decisions about whether to take part or not was a guiding principle, with the understanding that they had the right to refuse, or if they accepted, that they could withdraw from the study at any time without any adverse consequences for the care they receive. All participants received written and verbal information about the study and those who volunteered to take part, signed a written consent form. Signed consent forms were stored separately from questionnaires and in a locked cupboard within a restricted staff area in the University. In addition to informed consent for Phase 1, participants who took part in Phase 2 gave further written informed consent prior to the interview. This was to obtain permission to proceed with the audio-recorded interview, to inform participants about how findings would be reported in an anonymised format to maintain confidentiality, and to ensure they knew they could stop the interview and withdraw at any stage, if they wished.

### ***Safety and Wellbeing of Participants***

The HADS (Zigmond and Snaith 1983) used to assess psychological wellbeing in terms of anxiety and depression, has caseness cut off scores indicating clinical significance. As caseness suggests there is a potential clinical significance, and in order to protect participants who may have been clinically anxious or depressed (defined as  $\geq 11$  on the HADS anxiety or/and depression subscale; Zigmond and Snaith, 1983), all participants were asked to give

consent for their results to be shared with their GP. Only women, who consented to their GP being informed and agreed to provide information about their GP on the consent form, were included in the study. This enabled the researcher to notify the Consultant Gynaecologist/Obstetrician, who informed the woman's GP, if participants scored as highly anxious or depressed i.e. scoring 11 or above, during completion of the HADS (Zigmond and Snaith 1983).

The WEMWBS (Tennant et al. 2007) used to assess psychological wellbeing in terms of mental wellbeing, does not have cut off points to determine clinical significance.

### ***Ethical challenges***

Miscarriage is a taboo subject (Bansen and Stevens 1992; Rowlands and Lee 2010a) and a sensitive research topic (Liamputtong 2006), therefore those that experience miscarriage are considered as being potentially vulnerable. Care was taken to build a rapport with the participant by interviewing them in their own homes (where possible) and by making a conversation with the participant prior to the interview to build up trust (Rubin and Rubin 2011) to put them at ease. In consideration of participants' feelings, data was not collected on the anniversary of the date of their miscarriage.

The Study Protocol details the process for recruitment and inclusion in the different phases of the study (see Appendix 1), and the Participant Information Sheet provides information about the study including specific information for participants to access support, where required (see Appendix 2), such as The Miscarriage Association. The Debrief Sheet (see Appendix 3) was discussed and left with participants including contact details for sources of support on completion of the interview, if required.

In addition to referral to their GP for high scoring participants during completion of the HADS (Zigmond and Snaith 1983) as described above, the researcher as a healthcare practitioner was prepared to act in the best interests of participants at all times, and was willing to refer to an appropriate healthcare professional if there were concerns about the participants' wellbeing, including an emergency referral if this was required, following the care pathway detailed in The Code (NMC 2015).

In addition to informed consent and the consideration of safety and wellbeing of participants, there were measures put in place to protect the safety and wellbeing of the researcher. Prior to and on completion of each interview, the researcher notified the Supervisor, to ensure that they were aware of when and where the researcher was, following the University Lone Working and Out of Hours Access Policy (Robert Gordon University 2015).

### **3.2.2 Engagement with key stakeholders**

Following ethical approval but before commencement of recruitment, links were established and permission granted to carry out the research with Head of Department and relevant healthcare workers in the Sexual and Reproductive Healthcare Centre (SRHC), NHS Grampian for the Comparative Group (CG). This was also replicated with the Head of Midwifery and relevant healthcare workers in the two EPAUs within NHS Grampian for the Miscarriage Group (MG).

The following section will describe the method used for each of the two phases in the study.

### **3.2.3 Phase 1 – Determining the impact of miscarriage on psychological wellbeing**

#### ***3.2.3.1 Stage 1: The Comparative Study – Comparing psychological wellbeing and its moderators amongst women with and without miscarriage***

##### ***Participants - Comparative Group***

The choice of control group was influenced by the fact that other studies have shown that pregnancy can be associated with significant psychological morbidity (Bennett et al. 2004), and to control for this, a group of women who were similar to the MG in age and socio-economic group but had not experienced miscarriage and were not pregnant was chosen. A purposive, voluntary sampling strategy was used. The main disadvantage of using this sampling strategy is that women were self-selecting, and consequently, may not be representative of the total population; for example, women who did not respond may have reacted differently to miscarriage (Polit and Beck 2008).

The researcher spent time with nurses and doctors in the SRHC during the recruitment process, ensuring they understood the purpose of the research, and to answer any questions about the study. Posters about the study were placed on the walls within the recruitment sites, and information was included in the University Bulletin, a weekly newsletter, which is emailed to all staff and students within the University.

Eligibility to take part was established by staff at the SRHC or by the researcher if recruited through the University.

For the Comparative Group (CG), there was a seven month recruitment period from May 2012 to November 2012. Eligibility to take part in the Comparative Study was as follows.

Inclusion criteria:

1. Women who were 16 years of age or over and of reproductive age
2. Women who speak and were able to understand written English
3. Women who live in the UK

Exclusion criteria:

1. Women who were currently pregnant
2. Women who have experienced miscarriage in the past
3. Women who have been pregnant within the last year

### ***Participants - Miscarriage Group***

The researcher spent time with midwives and doctors in both EPAUs during the recruitment process, ensuring they understood the purpose of the research, and to answer any questions about the study. Given the sensitive nature of the study, the midwives discussed the study with prospective participants to gauge willingness to participate during the recruitment process. The potential disadvantage of midwives recruiting women related to their gatekeeper role, however the advantage of their involvement was for ethical reasons. They may have been reluctant to ask certain types of participants, for example women who were overly distressed.

Eligibility to take part in the study was as follows.

Inclusion criteria:

1. Women who miscarry before 24 weeks gestation, who attended either of the two EPAUs
2. Women who were 16 years of age or over
3. Women who speak and were able to understand written English
4. Women who live in the UK

Exclusion criteria:

1. Women who have a viable ongoing pregnancy i.e. an ongoing twin pregnancy, or a threatened miscarriage
2. Women who experience ectopic pregnancy

### **3.2.4 Procedure**

#### **3.2.4.1 Recruitment - comparative group**

For the Comparative Group (CG), eligible women who were interested in taking part in the comparative study were provided with an envelope containing a CG Participant Information Sheet, consent form and freepost addressed envelope (FAE). On return of a completed and signed consent form, the researcher then issued a Unique Personal Identification Number to each participant, and they were posted the Comparative Questionnaire (CQ) with a CG Participant Information Sheet and a FAE. One reminder CQ, CG Participant Information Sheet and a FAE were sent to non-responders two weeks later.

#### ***Response Rate (CG)***

It was not possible to calculate a response rate for the CG, as it was not possible to record how many people had seen the advert and decided to take part or not.

The Comparative Group (CG) of seventy one women were recruited through adverts in the SRHC within NHS Grampian and a Scottish University.

#### **3.2.4.2 Recruitment - Miscarriage Group**

For the Miscarriage Group (MG) women who were interested in taking part in the study and who were eligible were provided with an envelope containing a MG Participant Information Sheet, consent form and FAE. The researcher issued a Unique Personal Identification Number to each participant who completed a signed consent form. Consenting participants were posted the Prospective Group Baseline Questionnaire (PGBQ) with a MG Participant Information Sheet and a FAE. One reminder PGBQ, MG Participant Information Sheet and a FAE was sent to non-responders two weeks later.

The Miscarriage Group (MG) of sixty six women was recruited through two Early Pregnancy Assessment Units (EPAUs) within NHS Grampian, on completion of the management of the index miscarriage.

#### ***Response Rates - MG***

During the seven month recruitment period from April 2012 to October 2012, 697 women miscarried and were treated in the two study sites, 245 women failed to meet the inclusion criteria (e.g. unable to speak English) as assessed by the midwives and therefore did not receive the information sheet and consent form. Four hundred and fifty two women received



the information sheet, consent form and FAE on discharge from hospital. Of these, 66 women consented to take part, resulting in a 14.60% response rate for the MG.

### **3.2.5 Design**

A quantitative approach was chosen for the comparative study, using a postal self-administered questionnaire survey to investigate the research aims of Phase 1. A questionnaire survey is a set of scientific procedures for collecting information and making quantitative inferences about populations (McColl et al. 2001). Surveys contain variables of concern, and are a common and useful data collection tool in midwifery research (Rees 2011).

Surveys are a cost effective way to collect data from large numbers of the population at more than one point in time (Polit and Beck 2008) across a wide geographical area. They have a huge advantage on a practical level; there is no need for staff training to reduce bias, as they are less open to the influence of the researcher (Oppenheim 2000). Further, employing established validated questionnaires ensures the reliability and validity of findings and enables comparison with previous research that has used such questionnaires (Boynton and Greenhalgh 2004). In addition, questionnaire surveys are flexible yet structured, and are amenable to statistical analysis (Polit and Beck 2008).

The disadvantages of using self-complete postal questionnaires is that no one is present to help respondents if they experience difficulty in interpreting or answering the questions (Polit and Beck 2008), whilst response rates can be low and may be affected by the motivation and ability of respondents to reply truthfully.

To avoid this, questionnaires should be carefully planned, drafted and piloted (Rees 2011). Mangione (1995) suggests that a response rate below 50% is a damaging limitation. In addition, respondents whose literacy is limited e.g. dyslexia, or whose facility with English is restricted may not be able to answer the questionnaire, consequently non-English speakers were part of the exclusion criteria, and those with poor literacy may well have self-excluded. With postal questionnaires, the researcher cannot ensure that the target participant completes the questionnaire without the intrusion of non-study participants (e.g. partners). There is also no opportunity to probe for more detail in the free text questions; however with the qualitative study following the quantitative study, issues within the free text questions, were further explored in Phase 2, providing additional justification for the interviews.

### **3.2.6 Materials**

Based on the literature review and through consultation with health care professionals, questionnaire booklets were designed to measure levels and possible moderators of

psychological wellbeing. The questionnaires included free-text sections to enrich and extend the responses provided where appropriate. The measures detailed below are those deemed essential to fulfilling the aims of the study.

### ***3.2.6.1 Non-validated measures:***

#### ***Socio-economic, reproductive and mental health history variables***

The CQ (see Appendix 4) and PGBQ (see Appendix 5) included demographic information on age, marital status, education, current employment and occupational status, ethnicity and home ownership. There were also questions about previous reproductive and mental health history. Where appropriate filter questions were used to direct women away from responding to questions that were not relevant to them.

#### ***Scottish Index of Multiple Deprivation (SIMD)***

To enable comparison between deprivation categories within groups, the Scottish Index of Multiple Deprivation (SIMD, 2013) was used. SIMD is the Scottish Government's official tool for identifying those places in Scotland with deprivation (Scottish Government, 2013). Limitations of using the SIMD arise from the use of an area based measure to identify individuals, as it identifies deprived areas, not deprived individuals. It may result in individuals being wrongly classified as 'deprived' when they are not, or 'not deprived' when in fact they are, particularly in rural areas as they have more geographically dispersed populations than in urban areas (McKendrick et al. 2011). The study was conducted in Grampian which is an affluent area.

#### ***Total number of additional major life events***

The eight major life events questions were taken from a questionnaire from previous research on psychological wellbeing following miscarriage (Cumming et al. 2007). The purpose of these questions was to examine whether other life events at the time of the miscarriage, might have influenced wellbeing or anxiety and depression. Major life events included partnership problems, personal injury/illness, work-related changes, financial concerns, moving house, feeling highly stressed at work, death of someone close or any other significant event which could be specified by the respondent. Each major life event scored one point, resulting in a total score of either zero if they believed they had no other major life events occurring within the last year, up to eight points if they had ticked all boxes including the other significant event box.

## ***Education***

Respondents were asked to note the highest level of education achieved. To calculate total number of years in education, achieving standard grade(s) was calculated as the equivalent of 11 years, Highers/A'Level as 13 years, vocational training as 13 years, college level as 13 years, degree level as 17 years, and higher degree level as 20 years in education.

## ***Satisfaction with healthcare provision***

Within the PGBQ, there were ten questions related to satisfaction with, and experience of healthcare provision following miscarriage. Free text sections were also included to allow participants to expand on what they felt was most and least helpful; and to allow them to suggest ways to help identify those in need of additional support.

The CQ included questions about participant's current reproductive status.

### ***3.2.6.2 Validated measures***

The CQ and PGBQ included the following validated measures. Permission to use the following validated measures was granted by the authors, and a licence to use them was granted where payment was required for their use.

## ***Psychological Wellbeing***

### ***Hospital Anxiety and Depression Scale (Zigmond and Snaith 1983)***

To measure levels of depression and anxiety, The HADS (Zigmond and Snaith 1983) was chosen as it has been used in previous studies with this population in Grampian (Cumming et al. 2007).

Participants are asked to tick the box that comes closest to how they have been feeling in the past week. Zigmond and Snaith (1983) state that respondents are encouraged not to take too long over their replies, as their immediate reaction to each item is felt to be more accurate than a long thought out response. It consists of fourteen 4 point Likert scale items, which assess the degree of anxiety and depression symptoms over the last week, each of which is rated from 0 to 3 according to severity of difficulty experienced. On completion an anxiety subscale and a depression subscale total can be summed. Each subscale score ranges from 0 to 21. The scores can then be interpreted  $\leq 7$  for non 'caseness', 8-10 as 'doubtful' or subthreshold 'caseness' also referred to as presence of some anxiety and or some depression (Bjelland et al. 2002), and  $\geq 11$  as indicating probable 'caseness' (Zigmond and Snaith 1983) with lowest

rates for false positives. Thus, higher scores indicate higher levels of anxiety and depression, respectively.

The use of the term 'hospital' suggests that the HADS is only valid in hospital settings, however many studies have confirmed that it is also valid when used in community and primary health settings (Snaith 2003). Bjelland et al. (2002) found that the HADS performed well in assessing symptom severity and 'caseness' of anxiety disorders and depression in both somatic, psychiatric and primary care patients and in the general population. It is a measure commonly used when assessing psychological reactions in women following miscarriage (Murphy, Lipp and Powles 2012; Cumming et al. 2007; Nikcevik et al. 1999; Lee and Slade 1996; Prettyman, Cordle and Cook 1993; Thapar and Thapar 1992; Friedman and Gath 1989). The cut-off used to identify caseness, however, has varied across studies; for example, Sejourne, Callahan and Chabrol (2010) used a cut-off score of  $\geq 8$  which indicates a presence of some anxiety and or some depression.

#### ***Warwick-Edinburgh Mental Wellbeing Scale (Tennant et al. 2007)***

The Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS; Tennant et al. 2007) consists of 14 positively worded items with 5 response categories, which assess concepts of mental wellbeing. Individuals completing the scale tick the box that best describes their experience of each statement over the past 2 weeks using a 5 point Likert scale (none of the time, rarely, some of the time, often and all of the time). The overall score is calculated by totalling the scores for each item, with scores ranging from 14 to 70. A higher WEMWBS score indicates a higher level of mental wellbeing. Continuing with the salutogenic perspective and strength based approach; it focuses entirely on positive aspects of mental wellbeing rather than focusing purely on ill-health such as anxiety and depression. The scale has been used as a tool for monitoring mental wellbeing at the population level with no ceiling effects; the population mean is 50.65 (SD=8.82; Scottish Government Social Research 2009). There has not, however, been any published research on its use, validity or reliability in evaluating mental wellbeing with pregnant women or women who have experienced pregnancy loss to date. In view of this, it was used alongside the HADS (Zigmond and Snaith 1983).

#### ***3.2.6.3 Proposed moderator variables***

##### ***Social support - Multidimensional Scale of Perceived Social Support MSPSS (Zimet et al. 1988)***

This validated 12 item scale assessed perceived social support adequacy from three sources: family, friends and significant others. The items are divided into factor groups relating to the

source of support, with scores ranging from 1 to 7 (very strongly disagree=1, through to very strongly agree=7). Each source of support can be between 4 and 28, where a high score indicates higher levels of perceived support within each of the sources of support. The scale helps to examine the possible contribution of social support in influencing psychological wellbeing. Social support is one variable that has received increased attention as a possible moderating factor to the observed variances in psychological adjustment following miscarriage (James and Kristiansen 1995). The quality and availability of social support may be an important factor in an individual's psychological wellbeing.

### ***Health Locus of Control - Multidimensional Health Locus of Control Scale (Wallston et al. 1978)***

The Multidimensional Health Locus of Control Scale (MHLOCS; Wallston et al. 1978) consists of three 6 item scales, using a 6 item Likert point response format. Wallston et al. (1978) developed the Multidimensional Health Locus of Control (HLOC) Scale to evaluate health locus of control, i.e. how and why an individual's health and health behaviour is affected. The Multidimensional Health Locus of Control Scale measures Internal HLOC (the extent to which health outcomes are determined by the self) and two external HLOC dimensions: Chance, the degree to which health outcomes are determined by fate or chance; or Powerful Others, the extent to which health outcomes are under the control of powerful others e.g. under the control of the doctor/midwife/God. Form A was chosen for use in this study, due to the comparative research design, which is more suitable for community populations. Higher scores on each of the subscales indicate a greater internal or external health locus of control. The MHLOCS has been used extensively in healthcare research (Steptoe and Wardle 2001), however, its use has been limited to early pregnancy (Martin and Jomeen 2004), rather than in women following miscarriage. Health locus of control may be an important factor in moderating the response to stress affecting an individual's psychological wellbeing.

Higher scores indicate greater strength of belief about health locus of control, i.e. a person with a high score on the internal scale feels personally responsible for their own health, whilst someone with a low score may feel that external influences such as powerful others (doctors and midwives) or fate/chance plays more of a role.

### ***Resilience - Connor-Davidson Resilience Scale (CD-RISC 10; Connor and Davidson 2003)***

This study defined resilience as a personality characteristic in order to identify the moderating role of resilience within a miscarriage population, to investigate the possible buffering effect of resilience on the relationship between anxiety, depression and wellbeing. Based on the

construct of resilience as a personality characteristic, the CD-RISC 10 (Connor and Davidson 2003) is a brief self-rated assessment to measure the individuals' state of resilience. Resilience could be the key to explaining resistance to risk across the lifespan and how people 'bounce back' after various challenges, such as miscarriage. The complexity of defining the construct of resilience has been widely recognised (Luthar, Cicchetti and Becker 2000), and there have been differing approaches to measuring resilience, leading to inconsistencies. Windle et al. (2011), in a methodological review of resilience measurement scales, found no current gold standard amongst 15 measures of resilience, including the CD-RISC 10 (Connor and Davidson 2003), questioning its reliability and validity. However, in the review, the CD-RISC 10 (Connor and Davidson 2003) achieved the maximum score on construct validity (Windle et al. 2011), therefore justifying the shortened version's use in this study. The CD-RISC 10 (Connor and Davidson 2003) contains 10 items such as "I am able to adapt when changes occur" and participants can score between 0 as the lowest score, to a possible 40 as the maximum score, with each of the 10 items scored 0 "not true at all" through to 4 "true nearly all of the time." High scores would indicate high emotional resilience and lower scores indicating lower emotional resilience. Resilience may be an important factor in moderating the response to stress affecting an individual's psychological wellbeing. There was no evidence of the scales use within a miscarriage population.

***Coping Styles - Coping Style Questionnaire (Endler and Parker 1990) and subscale self-blame from Brief COPE (Carver 1997)***

The Coping Style Questionnaire (CSQ) uses items selected from previous work on coping (Carver et al. 1997; Carver, Scheier and Weintraub 1989). The CSQ is designed to assess three broad coping dispositions; task focused, emotion focused and avoidant coping (Endler and Parker 1990). The scale is rated by a four point Likert scale, where each item is scored ranging from 'I usually don't do this at all' to 'I do this a lot'. Higher scores indicate that they use that type of coping style, and lower scores indicate that they do not use that type of coping style. Two items from Brief COPE (Carver 1997) from the sub-scale which measures self-blame were also included as previous research has shown high levels of guilt (Adolfsson et al. 2004; Barr 2004) and self-blame (Stirtzinger and Robinson 1999) following pregnancy loss. Higher scores on the Brief COPE (Carver 1997) indicate that participants are more likely to be self-blaming, and lower scores indicate that participants are less likely to self-blame. The mean scores for the different coping styles (avoidant, task, emotion focused and self-blame) were calculated at the three time points. The total possible scores for self-blame range from 2-8; whereby lower scores mean lower self-blame, whereas the total possible scores for the other coping style subscales range from 10-40.

### **3.2.7 Free text sections**

In order to gain a fuller understanding of women's experiences of miscarriage, the PGBQ questionnaire included free text sections where participants were asked to elaborate on what they found most and least helpful following their miscarriage. The comments were entered into NVivo 10 (QSR, International Pty Ltd. 1999-2014) and categorised into common themes. This software data management tool has the capacity to manage the data, whilst allowing for coding, sorting, matching and linking data to answer the research questions, without losing access to the source of the data or the context from which it has been taken from (Bazeley and Jackson 2013).

### **3.2.8 Phase 1: Pilot study**

In accordance with the recommendations of Rees (2011) the research instruments were piloted in order to ensure the proposed method and tools were appropriate and easy to understand; whilst also gauging how long it would take participants to complete the questionnaires.

The pilot study involved a convenience sample of four CG women (mean age=36.63, SD=6.63, years in education=12.00, SD=13.15), recruited from the SRHC for the CQ pilot, and five MG women (mean age=26.40 SD=6.80, years in education=13.20, SD=1.48) from the EPAUs for the PGBQ pilot. A short face-to-face interview took place following completion of the questionnaire, in order to check if any questions were unclear, or felt to be irrelevant, and to ensure the completion time was acceptable. The results of the pilot study led to minor changes to the format and presentation of the questionnaire. The pilot study found that the questions asked were considered clear and unambiguous, and the time to complete the questionnaire was described as acceptable.

Following the pilot study, further support and information was provided to health care professionals working in the EPAUs, so that they were fully informed, and able to contact the researcher if they wished further clarification during recruitment. Since modifications to the research tool may lead to inaccuracies in the pilot data findings (van Teijlingen and Hundley 2001) such data were not included with data from the actual study.

### **3.2.9 Phase 1: Stage 2 - Prospective Study: Determining the influence of time and moderating factors on psychological wellbeing amongst women following miscarriage**

In order to meet the study aims, the MG who participated in the comparative study were followed up at 6 and 13 months post miscarriage. The following section will describe the procedure involved in the 13-month prospective study.

### **3.2.9.1 Participants response rate**

#### ***Six Months***

Of the 66 participants who participated at baseline, 56 participants completed the 6 month assessment, resulting in an attrition rate of 15.15%.

#### ***Thirteen Months***

At 13 months, of the 56 participants in the 6 month study, 49 participated in the 13 month assessment, resulting in an attrition rate of 12.50%.

### **3.2.9.2 Procedure**

The procedure followed at baseline is described above in Section 3.2.4 for the MG.

Participants were then followed up at 6 and 13 months post miscarriage. Women who completed the PGBQ (n=66) received the Prospective Group 6 Month Questionnaire, which was posted to their home address (PG6MQ see Appendix 6) with an MG Participant Information Letter, one week prior to six months after their initial miscarriage. The MG Participant Information Letter provided information about the research team, should anyone wish to withdraw from the study, however, no-one contacted the research team to withdraw at this stage. One reminder letter, with an additional PG6MQ and FAE was sent to non-responders after a period of two weeks.

Participants who completed the PG6MQ received the Prospective Group 13 Month Questionnaire (PG13MQ see Appendix 7), which was posted to their home address with a MG Participant Information Letter and FAE, one week prior to thirteen months after their initial miscarriage. The MG Participant Information Letter provided information about the research team, should anyone wish to withdraw from the study however, no-one contacted the research team to withdraw. One reminder PG13MQ, a reminder MG Participant Information Letter and FAE was sent to non-responders, two weeks later.

### **3.2.9.3 Materials**

The materials used in the PG6MQ and PG13MQ were the same as those used in PGBQ with the exception of total number of years in education and number of additional major life events, which were not included. Changes to the questions for the PG6MQ and PG13MQ were related to 'In the last 6 or 13 months' e.g. 'Since your miscarriage 6 or 13 months ago, have you received any follow up support?' In addition, their current reproductive status was ascertained, which included; not actively trying for a baby, actively trying for a baby, pregnant (if yes, how



many weeks pregnant) and if they had experienced another miscarriage. If participants had experienced another miscarriage since completing the PGBQ or the PG6MQ, details of gestational age when they miscarried were obtained. In addition, in the PG13MQ if they had given birth to a baby, the baby's date of birth was recorded.

### 3.2.9.4 Phase 1: Analysis

Data generated from the questionnaires were entered into Statistics Package for the Social Sciences (SPSS) Version 21 (SPSS IBM 2012) for statistical analyses. To establish accuracy during the data entry process, 10% of the completed questionnaires for the MG and CG were selected randomly and data entry was double checked.

Where data were normally distributed, parametric statistical tests were employed. In the event of skewed distributions and/or heterogeneity of variance, the non-parametric equivalent was used. Independent-samples *t*-test analyses (or Mann Whitney *U* test for non-parametric equivalent) were carried out to compare the CG and MG on all measures. Cross tabulations for categorical data from the chi-squared tests were used to measure associations between variables; where the minimum expected cell frequency was violated the Fisher's Exact Test (FET) was used. Statistical significance was defined as  $p < 0.05$ .

Correlation analysis was used to investigate and describe the strength and direction of the relationship between variables (Pallant 2007), using Pearson product-moment correlation coefficient (or Spearman rho for non-parametric equivalent). The following Cohen's table of effect size magnitudes were used to determine the significance of any relationship found. Eta squared was calculated in relation to significant differences between means (proposed by Cohen 1988, pp 284-7) for interpreting the effect size:

<i>r</i>	<b>Size</b>	<i>Eta squared</i>	<b>Size</b>
<0.10	trivial	0.01	small
0.10 - 0.30	small to medium	0.06	medium
0.30 - 0.50	medium to large	0.14	large
>0.50	large to very large		

One-way between groups analysis of variance (ANOVA) with post-hoc tests was conducted to explore the impact of time using Tukey.

Binary logistic regression was used to identify the strongest predictors of anxiety and depression status. With a categorical dependent variable, logistic regression can be used

when possible predictor variables are a mix of continuous and categorical variables and/or if they are not normally distributed (logistic regression makes no assumptions about the distributions of the predictor variables). For binary logistic regression, the predicted dependent variable is a function of the probability that a particular subject will be in one of the categories (caseness or non-caseness) given the set of scores on the predictor variables. Binary logistic regression was performed to assess the impact of variables that correlated with anxiety or depression, to find the best predictors of anxiety and depression status.

Linear regression determines the amount of variance in the dependent variable that can be explained by the independent variables, and was suitable in relation to wellbeing as it is a continuous variable rather than a category. Linear regression was also used for depression at 6 and 13 months, as caseness did not feature at these time points.

### **3.2.10 Phase 2 - Qualitative Study - Exploring the predictors of enhanced wellbeing after miscarriage**

Phase 2 is the qualitative study. The research aims and objectives for Phase 2 are described in Chapter 1 Section 1.6.

#### **3.2.10.1 Participants in Phase 2**

Of the 49 participants who completed the PG13MQ, 10 (20.41%) were identified as having received treatment previously for a mental health issue, and were excluded from taking part in the interview stage. The rationale for this was for ethical reasons, as this group may be more vulnerable. Of the remaining 39 women, 17 (43.59%) consented to interview. One participant withdrew her consent for interview, stating that she had been recently diagnosed with postnatal depression. One participant was interviewed for the pilot study; this data were however excluded from the analysis.

Participants, who consented to take part, were purposively selected to ensure a range of wellbeing scores and reproductive status (not trying for a baby, actively trying for a baby, pregnant and delivered a baby since miscarriage) within the sample interviewed. Nine participants were interviewed in total. Within the qualitative paradigm, a small sample size is appropriate to obtain an in-depth view of women's experiences of miscarriage and to provide rich and enlightening findings. Holloway and Wheeler (2010) note that sample size in qualitative research is not an indicator of the importance of the study, or the quality of the findings, and suggest fairly small numbers from 4 to 50 participants. The cut off to stop interviewing was taken after 9 interviews, as there was little new information produced in the later interviews, suggesting data saturation was reached (Guest 2006).

### **3.2.10.2 Recruitment**

Recruitment of participants for Phase 2 is demonstrated in the Protocol Flow Chart Prospective Group (see Appendix 1). During the consenting procedure for Phase 1, women consented on a separate consent form, stating that they agreed to be contacted in Phase 2 for potential interview. Of the 66 women who agreed to Phase 1, 60 (90.91%) agreed to be contacted for Phase 2. A MG Information Letter and consent form about the interview was posted to the participating women along with the PG13MQ, one week prior to thirteen months after their initial miscarriage. The following inclusion and exclusion criteria were used for Phase 2.

Inclusion criteria:

1. Women who consented to Phase 2 at PG13MQ
2. Women who live in the UK
3. Variety in terms of reproductive status i.e. at least one from each category
4. A range of wellbeing scores including evidence of enhanced wellbeing

Exclusion criteria:

1. Women with a previous history of having received treatment for a mental health issue

For participants who were eligible for Phase 2, the MG Information Letter about the interview included contact details for the research team, should anyone wish to withdraw from the study. The consent form included telephone contact details to allow the researcher to contact potential interviewees, to organise the interview. Those who were excluded from Phase 2 were encouraged to return the completed PG13MQ, and thanked for their participation during Phase 1.

### **3.2.11 Procedure**

#### **3.2.11.1 Pilot study**

In order to develop a deeper understanding of the factors that enhance wellbeing amongst women following miscarriage, a draft Interview Topic Guide was developed using the factors that were identified as the strongest predictors of lower anxiety and depression and higher wellbeing during Phase 1. A pilot interview was conducted with one woman who had experienced a second miscarriage 12 months previously; she was 37 weeks pregnant at the time of the interview. Following discussion and advice from the research team, the Interview Topic Guide was modified after the pilot interview (see Appendix 8). These modifications were

minor, including a larger font size to enable the interviewer to see the Interview Topic Guide more easily, and changes to the order and flow of the questions.

### **3.2.11.2 Interviews**

In-depth semi-structured interviews were conducted at a time and place to suit the interviewee. Potential participants were offered one-to-one, face-to-face interviews in their own home or in a quiet, private room within the University, and followed the University Safety Protocol. One participant, who had consented to interview but had moved away from Grampian, was interviewed by telephone.

Informed consent was confirmed prior to the interview where participants were re-informed about the purpose of the interview and were re-notified that they could withdraw at any stage during the interview and that their interview would be confidential and quotes would be presented anonymously. Participants were informed that their interview would last approximately one hour.

It was important to provide a setting where the interviewer and participant could address the questions in the Interview Topic Guide. Therefore, a relaxing atmosphere was created, in an attempt to allow the participant to speak openly about their experiences.

The semi-structured Interview Topic Guide allowed flexibility to move in a direction that suited the individual participant. Each interview began with a social conversation to put the participant at ease, to establish a rapport and to set the mood for the subsequent questions. Using the Interview Topic Guide, each interview started with the same question "What are your experiences of miscarriage?"

Only the researcher had access to identifiable information, which was stored in a secure location separate from the tape recordings. To preserve participants' anonymity and maintain confidentiality, any references to names along with any identifying information were changed, and were anonymised by the participant Unique Personal Identification Number. The audio recorder was also stored in a secure location, until completion of transcription, when the audio recordings were then deleted.

The researcher aimed to protect participants from any harm, to preserve their psychological wellbeing, and to respect their dignity at all times. Where participants visibly showed distress during the interview, the researcher offered to stop the interview and switch off the recording device, however no one requested this.

Given the sensitive nature of miscarriage, it was vital to consider that the questions might result in a resurgence of emotions for the participant. Therefore on completion of each interview, women were given the Debrief Sheet Phase 2 (see Appendix 3), which provided information about the study aims in addition to sources of support. Participants were encouraged to contact The Miscarriage Association or a healthcare professional such as their GP, if they felt they required further support.

### **3.2.11.3 Phase 2 - Analysis**

Interviews were audio recorded, transcribed verbatim and analysed using the Framework Method (Ritchie and Spencer 1994). The Framework Method (Ritchie and Spencer 1994) is an explicit approach to analysis within a thematic methodology (Bridgelal et al. 2008) and the qualitative paradigm. The approaches used in the Framework Method identify commonalities and differences in qualitative data, allowing the researcher to draw descriptive and or explanatory conclusions clustered around themes (Gale et al. 2013), in this case in order to explore these in relation to wellbeing and caseness status. 'The Analytical Hierarchy' highlights the 'conceptual scaffold' which describes the process of coding and tabulating data (Ritchie and Lewis, 2003). The Framework Method (Ritchie and Spencer 1994) of qualitative data analysis is considered as straightforward, it provides transparent results through the use of an audit trail, improving dependability (Bazeley and Jackson 2013) and offering conclusions that relate back to the original data (Rubin and Rubin 2011). The analysis as described in Ritchie and Lewis's (2003) 'Analytical Hierarchy' is matrix-based and is increasingly used in healthcare research settings related to midwifery (Furber 2010). It involves several inter-related but distinct stages (Rabiee 2004), that allow for theme-based and case-based analysis, so that the development of a matrix chart can be read across (cases) or downwards (themes). In practice, it provides a clear track of how data moves from interview to transcripts to themes. Auerbach and Silverstein (2003) advise that the research questions are kept in front of the researcher, to maintain focus and to assist in coding decisions, and attention was paid to this. The pre-defined codes derived from Phase 1 include health locus of control, social support, coping style, resilience and experience of healthcare provision. The staged process within Framework Analysis starts with familiarization, development of a theoretical framework by identifying recurrent themes, indexing and charting, summarising data in an analytical framework and finally synthesising data by mapping and interpreting (Ritchie and Lewis 2003). In this study, Framework Analysis was utilised as follows:

1. Familiarization – this stage was informed by the findings from Phase 1. It involved becoming immersed in the details of each transcript, to gain a sense of the whole interviews prior to dividing them up into sections and identifying recurring themes (Rabiee 2004). Conducting

and transcribing the interviews enabled the researcher to obtain an initial insight into the participants' felt experiences, in addition to initial impressions in relation to the research questions. Notes of initial impressions were made in the margins of the transcript, for example where participants expressed exceptionally strong or contrasting views, and of the main ideas that appeared to recur in the data (Ritchie et al. 2003). Interviews were re-listened to after transcription, to ensure accuracy within the transcription process, resulting in corrections to typographical errors. It was not necessary to capture pauses in the Framework Method, because it is the content that is of primary interest. The transcriptions included page numbers, line numbers and large margins for later coding and note taking. The familiarisation process continued until it was felt that the diversity of circumstances and characteristics within the data set had been understood (Ritchie and Lewis 2003).

2. The theoretical framework was developed from the predictors identified during Phase 1 results, which was further developed by identifying recurrent and important themes – during this stage the researcher developed the framework on which the research is based, paying attention to the stated aims and research objectives of the study. The recurring themes identified were added to a matrix using the computer package Microsoft Excel. The task was to identify recurring themes and ideas that help to elaborate on the predictors from Phase 1, to further explore how health locus of control, perceived social support, coping style, resilience and experiences of healthcare provision enhance psychological wellbeing in women following miscarriage.
3. Indexing and charting – the framework was then applied back to the transcripts where data were assigned to the themes identified during the previous stages. This step included using the line numbering function in Microsoft Word, which enabled the researcher to summarize the data in the matrix and include a reference of where to locate it in the transcript. It is possible to indicate a particularly meaningful quotation, within the summary chart by using an identifier such as Q (Ritchie et al. 2003). As part of this stage, themes and sub-themes were refined, combined and developed. This involved reading through transcript data and noting the related theme on the draft framework. Data were indexed by coding and annotating the themes from the draft framework on the transcripts alongside the appropriate text. Indexing was conducted largely by the author of the PhD thesis, in collaboration with the supervisory team. Decisions made were based on similarities and differences between themes, which came about through data immersion, resulting in a refined framework. The salutogenic perspective resulted in the identification of assets that participants described as helpful. One supervisor independently applied the index to two full interview transcripts, to guard against bias and enhance trustworthiness (Richards 2005).

After coding of the transcripts, codes were grouped together into categories, forming a working analytical framework. Analytic memos provided written accounts of decisions made to reflect coding choices, in addition to how these linked to emergent themes and categories, to enable the researcher to reflect back on past decisions and to assist with the write up stage of the research.

4. Summarising data in an analytical framework – during this stage the material were reduced into understandable but brief summaries of what was said by participants (Ritchie et al. 2003). This was more easily managed with a computer package as summaries can then be linked back to the full text in the transcript. Provision of an example of this process to illustrate this is provided as demonstrated in below in Table 3.1, to demonstrate how the Framework Matrix started to develop from transcript to theme, to enhance transparency (Horsburgh 2003). Actual quotes can be linked back to the transcript, demonstrating a clear audit trail (Ward 2013).
5. Synthesizing data by mapping and interpreting – the Framework Method of analysis allows for refinement of themes and is said to help in the overall development of a conceptual framework (Smith and Frith 2011). This final stage allowed for comparison of themes and sub-themes whilst checking against original transcripts, to ensure appropriate context. Characteristics of and differences between the data were identified, allowing for comparison within the pre-defined codes and psychological wellbeing status of those interviewed. These were further explored within caseness context to examine for patterns within these groups. Finally the framework was produced with the aim to elucidate the participants shared views and the individual underlying psychological processes and within the salutogenic perspective (Antonovsky, 1987). Once all the data had been coded using the analytical framework, the data were summarized in a matrix for each theme using Microsoft Excel. As illustrated below, the matrix comprised one row per participant and one column per code. A separate sheet was used for each predictor from Phase 1. Data were extracted from transcripts for each participant and code, summarised and then inserted into the corresponding cell in the matrix. While in-depth analysis within the key themes took place across the whole data set, the views of each participant remain connected to other aspects of their account within the matrix, in order to retain the context of the individual's views. References to potentially interesting quotations were also highlighted within the cells of the matrix using Q or QQ/QQQ depending on how illustrative the quote was, with QQQ suggesting greater descriptiveness. Presenting the data in italics indicates verbatim text, with the corresponding line number.

Guba and Lincoln (1989) suggest the standards to ensure trustworthiness within qualitative data are: credibility; transferability; dependability and confirmability. In addressing these, the researcher demonstrates that a true picture of what happened is presented. It is suggested that there is a greater need for transparency in the data analysis stage, to allow research reviewers to see how the findings are derived (Furber 2010). The strength of Framework Analysis is in the transparency at each stage of the analysis process, whereby it is possible to refer back to the original 'raw' data, enhancing rigour (Ward et al. 2013; Ezzy 2010). There is sufficient detail for the reader to be able to repeat the study in another setting, and that the research findings that emerge from the data are the participant's experiences, not the researcher's own predispositions.

In relation to transparency and trustworthiness, the following transcript extract is a worked example of the Framework Analysis process, to illustrate how the themes and categories were arrived at. It also demonstrates how the coding linked to the predictors identified during Phase 1 for social support, in relation to family and friends. It displays how Friends who have personal experience of miscarriage, are particularly supportive, as they have greater awareness of the experience.

#### Section of transcript and initial development of themes and categories

Line number	Example of a section of transcript	Initial themes and coding
56	P: "Umm, it was only really <u>my best friends</u> and	Close friends
57	Mum <u>and Dad that knew but they were great</u> about	Family support
58	it and my friends were <u>very supportive, they've both</u>	Friends with
59	<u>had miscarriages themselves in the past so they</u>	experience of
60	<u>actually were really helpful and just told me not to</u>	miscarriage
61	<u>worry, because I kept saying I felt useless and they</u>	supportive and
62	<u>were saying I wasn't useless you know, I would get</u>	more aware
63	<u>pregnant again</u> . And I could obviously do this	
64	because I had my son, so don't be silly and my	
65	<u>Mum and Dad</u> were great obviously, you know, <u>just</u>	Family supportive
66	<u>supporting me</u> and telling me, because it does feel	
67	like <u>your apologising all the time as if you've let</u>	Sense of failure
68	<u>people down</u> – <u>'I'm really sorry</u> but we're not having	
69	this baby.'"	



In addition, an example of the developing Framework for the social support theme is provided, for interviews 1, 4 and 6 within Table 3.1.

**Table 3.1: Extract of Development of Framework Matrix: Social Support Theme**

	<b>Significant other</b>	<b>Friends</b>	<b>Family</b>
Interview 1 (high wellbeing, anxiety and depression non- 'caseness')	Physical (93, 97) and emotional (96-97) presence  ↓ self-blame (95-96)	Physical (51, 54) and emotional presence (298, 564)  Normalise experience (89, 214) encourage task focused coping (300-301) ↓ self-blame (778-779)	Physical presence (446), (542), women's work (454), normalize the experience (251)
Interview 4 (low wellbeing, anxiety 'caseness' and depression non- 'caseness'),	Supportive (60) SO doesn't share emotions to protect (113-114, 328)  Tries to ↓ self blame (447) His needs unmet (118-120)	Quite supportive (455), not protective (458-459) "you're going to make a great mum one day, when the time's right, that famous cliché" Q	Hard to share experience with her family (516, especially her mother 521, 532-533). Lack of presence (532-534, 539-540)
Interview 6 (low wellbeing, anxiety and depression non- 'caseness')	SO not present either emotionally (144-145, 318, 322) or physically left feeling isolated (129-132, 204-206, 216-224, 462-463, 668-672, 689-690, 697, 702-703) His needs unmet (153)	Not emotionally present (249-251, 270-271, 285, 602-603, 610-612, 777, 782, 786-787, 793, 838-839), protecting (only pregnant friends 541-545) try to normalise (575-576)	Family not present (89, 842), but supportive when present (91-92) protect by not talking about MC (457) "I think that she was just more scared, that she would upset me" Q

### **3.2.12 Summary**

This chapter explains the methodology and the method to address the study aims, research objectives and research hypotheses of the thesis. The structure consisted of Phase1, which examined the impact of miscarriage on psychological wellbeing and comprised:

Stage1 - Comparative Study: Comparing psychological wellbeing and its moderators amongst women with and without miscarriage

Stage 2 - Prospective Study: Determining the influence of time and moderating factors on psychological wellbeing amongst women following miscarriage

Following Phase 1, Phase 2 then explored the predictors of lower anxiety, depression and higher wellbeing following miscarriage.

The next chapter of the thesis presents the results from Phase 1, Stage 1 the Comparative Study, to increase understanding of the effect of miscarriage on women's psychological wellbeing, in comparison to women without miscarriage.



## CHAPTER 4

### PHASE 1 STAGE 1: THE COMPARATIVE STUDY – COMPARING PSYCHOLOGICAL WELLBEING AND ITS MODERATORS AMONGST WOMEN WITH AND WITHOUT MISCARRIAGE

#### 4.1 Introduction to Phase 1 Stage 1

This Chapter will describe the findings from Phase 1, Stage 1, which examines levels of anxiety, depression and wellbeing in women who have experienced miscarriage, compared to a comparative group of women, who are similar in age and socio-economic status, but without experience of miscarriage. This study also compares health locus of control, perceived social support, coping style and resilience between the groups.

#### 4.2 Demographic Characteristics

Marital status, ethnicity, highest level of education and SIMD Quintiles for the CG and MG are reported in Table 4.1.

**Table 4.1: Demographic Characteristics (MG baseline; CG)**

	<b>MG (n=66)</b>	<b>CG (n=71)</b>
	<b>n (%)</b>	<b>n (%)</b>
<b>Marital status</b>		
Single	1 (1.52)	27 (38.03)
Living with partner	16 (24.24)	20 (28.17)
Married	49 (74.24)	24 (33.80)
<b>Ethnicity</b>		
White British	62 (93.94)	56 (78.87)
White Other	4 (6.06)	15 (21.13)
<b>Highest level of education</b>		
Standard grade/GCSE	5 (7.58)	2 (2.82)
Highers/A'level	5 (7.58)	6 (8.45)
Vocational Qualifications	3 (4.55)	1 (1.41)
College (HNC/HND)	16 (24.24)	6 (8.45)
Degree	20 (30.30)	25 (35.21)
Higher Degree	17 (25.76)	31 (43.66)
<b>SIMD Quintiles</b>		
Most deprived	0 (0)	3 (4.23)
2 <sup>nd</sup> most deprived	5 (7.58)	5 (7.04)
Middle	12 (18.18)	12 (16.90)
2 <sup>nd</sup> least deprived	20 (30.30)	15 (21.13)
Least deprived	29 (43.94)	35 (49.30)
Missing data (moved to London)	0 (0)	1 (1.41)

### ***Marital Status***

In the CG, responses to marital status included single (38.03%, n=27), living with partner (28.17%, n=20) and married (33.80%, n=24). Participants were grouped according to their marital status with 47 women in the not married category (66.20%), compared to 24 in the married category (33.80%). In the MG, responses to marital status included single (1.52%, n=1), living with partner (24.24%, n=16) and married (74.24%, n=49); with 17 women in the not married category (25.76%) and 49 in the married category (74.24%).

### ***Ethnicity***

In the CG, 56 women (78.87%) described their ethnic origin as 'White British', and 15 (21.13%) as 'Other White' category. In the MG, 62 women (93.94%) described their ethnic origin as 'White British', and 4 (6.06%) as 'Other White' category. No other ethnic groups were represented in this study.

### ***Highest level of education***

In the CG, 2 women (2.82%) described their highest level of education as 'Standard grade/GCSE', 6 (8.45%) as 'Highers/A'level' category, 1 (1.41%) as 'Vocational qualifications' category, 6 (8.45%) as 'College HNC/HND' category, 25 (35.21%) as 'Degree' and 31 (43.66%) as the 'Higher Degree' category. In the MG, 5 women (7.58%) described their highest level of education as 'Standard grade/GCSE', 5 women (7.58%) as 'Highers/A'level' category, 3 (4.55%) as 'Vocational qualifications' category, 16 (24.24%) as 'College HNC/HND' category, 20 (30.30%) as 'Degree' and 17 (25.76%) as the 'Higher Degree' category.

### ***SIMD Quintiles***

In the CG, 3 women (4.23%) lived in the 'Most deprived' SIMD Quintile, 5 (7.04%) lived in the '2<sup>nd</sup> Most deprived', 12 (16.90%) lived in the 'Middle' SIMD Quintile category, 15 (21.13%) lived in the '2<sup>nd</sup> least deprived' SIMD Quintile category, 35 (49.30%) lived in the 'least deprived' SIMD Quintile category, and 1 woman (1.41%) had moved away. In the MG, no women lived in the 'Most deprived' SIMD Quintile, 5 (7.58%) lived in the '2<sup>nd</sup> Most deprived', 12 (18.18%) lived in the 'Middle' SIMD Quintile category, 20 (30.30%) lived in the '2<sup>nd</sup> least deprived' SIMD Quintile category, and 29 (43.94%) lived in the 'least deprived' SIMD Quintile category.

Table 4.2 demonstrates the mean age, years in education and SIMD score for the CG and MG.

**Table 4.2: Mean age, years in education and SIMD score for CG & MG**

	<b>CG (n=71) Mean (SD)</b>	<b>MG (n=66) Mean (SD)</b>
<b>Age</b>	30.77 (8.10)	33.20 (5.73)
<b>Years in education</b>	17.45 (2.81)	15.86 (3.12)
<b>SIMD</b>	4735.54 (1566.27)	4775.56 (1259.92)

This section reports the demographic characteristics, to ensure that the two groups are comparable in terms of demographics and to identify any potential confounding variables, which influence levels of psychological wellbeing. Confounding variables are those whose presence may affect the variables being studied so that the results do not reflect the actual relationship between the variables under investigation.

### **Age**

As shown in Table 4.2, the CG had a mean age of 30.77 (SD=8.10), ranging from 18-56 years; whilst the MG had a mean age of 33.20 (SD=5.73), ranging from 21-47 years.

Results from an independent samples t-test indicated a statistically significant difference in age between the groups;  $t(126.24)=-2.03$ .  $p=0.04$ . The magnitude of the difference in means (mean difference=-2.42, 95% CI: -4.78 to -0.06), however, was small (eta squared=0.03).

To determine whether age may be a confounding variable, further analysis using Pearson's product-moment correlation coefficient was used to examine the strength and direction of the relationship between age and anxiety, depression and wellbeing scores. As displayed in Table 4.3, there was no significant association between age and anxiety ( $r=-0.10$ ,  $n=71$ ,  $p=0.40$ ), depression ( $r=0.13$ ,  $n=71$ ,  $p=0.27$ ) or wellbeing ( $r=-0.18$ ,  $n=71$ ,  $p=0.14$ ) in the CG; or age and anxiety ( $r=-0.14$ ,  $n=66$ ,  $p=0.25$ ), depression ( $r=-0.07$ ,  $n=66$ ,  $p=0.56$ ) or wellbeing ( $r=0.19$ ,  $n=66$ ,  $p=0.12$ ) in the MG.

These results suggest that age did not influence anxiety, depression or wellbeing scores in either group.

**Table 4.3: Anxiety, depression, wellbeing with maternal age (CG & MG)**

	Anxiety		Depression		Wellbeing	
	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>
<b>CG Age (n=71)</b>	-0.10	0.40	0.13	0.27	-0.18	0.14
<b>MG Age (n=66)</b>	-0.14	0.25	-0.07	0.56	0.19	0.12

***Years in education***

As shown in Table 4.2, the CG had a mean of 17.45 (SD=2.81) of years in education compared to 15.86 (SD=3.12) in the MG.

An independent samples t-test was conducted to compare the number of years in education between the two groups. There was a statistically significant difference in scores between the CG and the MG:  $t(130.95)=3.12$ .  $p=0.02$ . The magnitude of the difference in means (mean difference=1.59, 95% CI: 0.58 to 2.59) was moderate (eta squared=0.07).

To determine whether number of years in education may be a confounding variable, further analysis using Spearman's Rho correlation was used to examine the strength and direction of the relationship between the anxiety, depression and wellbeing scores with number of years in education for the CG and the MG.

As displayed in Table 4.4, there was no significant association between number of years in education and anxiety ( $r_s=0.19$ ,  $n=71$ ,  $p=0.12$ ), depression ( $r_s=0.05$ ,  $n=71$ ,  $p=0.70$ ) or wellbeing ( $r_s=-0.01$ ,  $n=71$ ,  $p=0.92$ ) in the CG or number of years in education and anxiety ( $r_s=-0.14$ ,  $n=66$ ,  $p=0.27$ ), depression ( $r_s=-0.11$ ,  $n=66$ ,  $p=0.37$ ) or wellbeing ( $r_s=0.08$ ,  $n=66$ ,  $p=0.54$ ) in the MG.

These results suggest that number of years in education did not predict anxiety, depression or wellbeing in either the CG or MG.

**Table 4.4: Anxiety, depression, wellbeing with years in education (CG & MG)**

	Anxiety		Depression		Wellbeing	
	<i>r<sub>s</sub></i>	<i>p</i>	<i>r<sub>s</sub></i>	<i>p</i>	<i>r<sub>s</sub></i>	<i>p</i>
<b>CG Years in education (n=71)</b>	0.19	0.12	0.05	0.70	-0.01	0.92
<b>MG Years in education (n=66)</b>	-0.14	0.27	-0.11	0.37	0.08	0.54

### **Scottish Index of Multiple Deprivation Score (SIMD)**

As shown in Table 4.2, the CG had a mean SIMD score of 4735.54 (SD=1566.27) compared to 4775.56 (SD=1259.92) in the MG.

An independent samples t-test was conducted to compare the SIMD for the CG and MG. There was no statistically significant difference in scores between the CG and the MG;  $t(134)=-0.16$ ,  $p=0.87$ .

To determine whether SIMD may be a confounding variable, further analysis using Spearman's Rho correlation examines the strength and direction of the relationship between the anxiety, depression and wellbeing scores with SIMD for the CG and the MG.

As displayed in Table 4.5, there was no significant association between SIMD and anxiety ( $r_s=0.01$ ,  $n=70$ ,  $p=0.95$ ), depression ( $r_s=0.03$ ,  $n=70$ ,  $p=0.84$ ) or wellbeing ( $r_s=-0.06$ ,  $n=70$ ,  $p=0.65$ ) in the CG or SIMD and anxiety  $r_s=-0.13$ ,  $n=66$ ,  $p=0.29$ , depression  $r_s=-0.06$ ,  $n=66$ ,  $p=0.65$ , or wellbeing  $r_s=0.07$ ,  $n=66$ ,  $p=0.56$  in the MG.

These results suggest that SIMD did not predict anxiety, depression or wellbeing in either the CG or MG in this study.

**Table 4.5: Anxiety, depression, wellbeing with SIMD (CG & MG)**

	Anxiety		Depression		Wellbeing	
	$r_s$	$p$	$r_s$	$p$	$r_s$	$p$
<b>CG (n=70)</b>	0.01	0.95	0.03	0.84	-0.06	0.65
<b>MG (n=66)</b>	-0.13	0.29	-0.06	0.65	0.07	0.56

### **Summary**

Analysis was carried out to determine whether the two groups were comparable. This indicated statistically significant differences between the two groups in terms of age and number of years in education. The difference in age between the groups was small, whilst the difference in numbers of years in education was moderate, with a greater number of years in education amongst the CG. There was no statistically significant difference in SIMD scores between the groups. These results suggest that the CG were younger, had more number of years in education, but were similar in SIMD score in comparison to the MG.

Overall however, neither age, years in education or SIMD were correlated significantly with anxiety, depression or wellbeing in the CG or MG.



### **4.3 Testing the hypotheses**

This section examines psychological wellbeing within the two groups, by testing the six hypotheses in turn.

#### **4.3.1 Hypothesis 1**

The Comparative Group (CG) will have lower levels of anxiety and depression, and higher levels of wellbeing than the Miscarriage Group (MG).

The first hypothesis examines the differences in anxiety, depression and wellbeing for the CG and MG.

##### **4.3.1.1 Mean anxiety, depression and wellbeing scores**

The CG reported a lower mean anxiety score (CG mean=6.99, SD=3.57, MG mean=8.38, SD=5.14); a lower mean depression score (CG mean=2.69, SD=2.91, MG mean=5.21, SD=3.98) and a higher mean wellbeing score (CG mean=52.38, SD=7.61, MG mean=46.14, SD=9.85), as displayed in Table 4.6.

**Table 4.6: Mean anxiety, depression and wellbeing scores (CG & MG)**

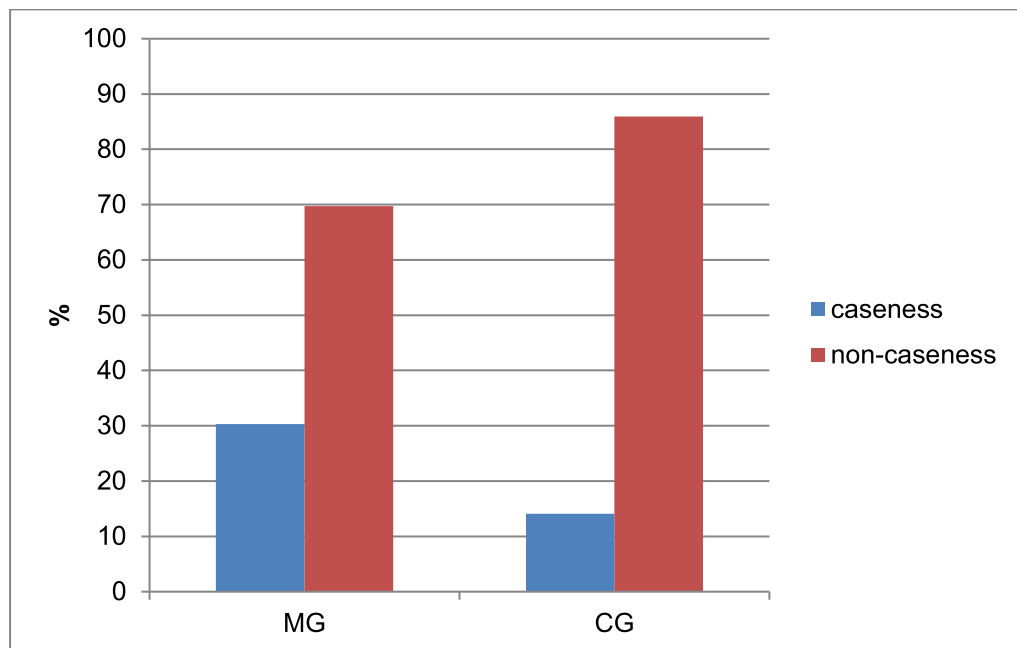
	<b>CG (n=71) Mean (SD)</b>	<b>MG (n=66) Mean (SD)</b>
<b>Anxiety</b>	6.99 (3.57)	8.38 (5.14)
<b>Depression</b>	2.69 (2.91)	5.21 (3.98)
<b>Wellbeing</b>	52.38 (7.61)	46.14 (9.85)

Results from a series of independent samples *t*-tests revealed that the CG had significantly lower mean anxiety scores than the MG ( $t(114.82)=-1.83$ ,  $p<0.05$ , one-tailed). The magnitude of the differences in means (mean difference=-1.39, 95% CI: -2.90 to 0.12) was small (eta squared=0.02).

The CG had significantly lower mean depression scores compared to the MG ( $t(118.46)=-4.21$ ,  $p<0.01$ , two-tailed). The magnitude of the differences in means (mean difference=-2.52, 95% CI: -3.71 to -1.33) was moderate (eta squared=0.11). The CG had significantly higher mean wellbeing scores compared to the MG ( $t(122.22)=4.13$ ,  $p<0.01$ , two-tailed). The magnitude of the differences in means (mean difference=6.24, 95% CI: 3.25 to 9.24) was moderate (eta squared=0.11).

#### 4.3.1.2 Anxiety status

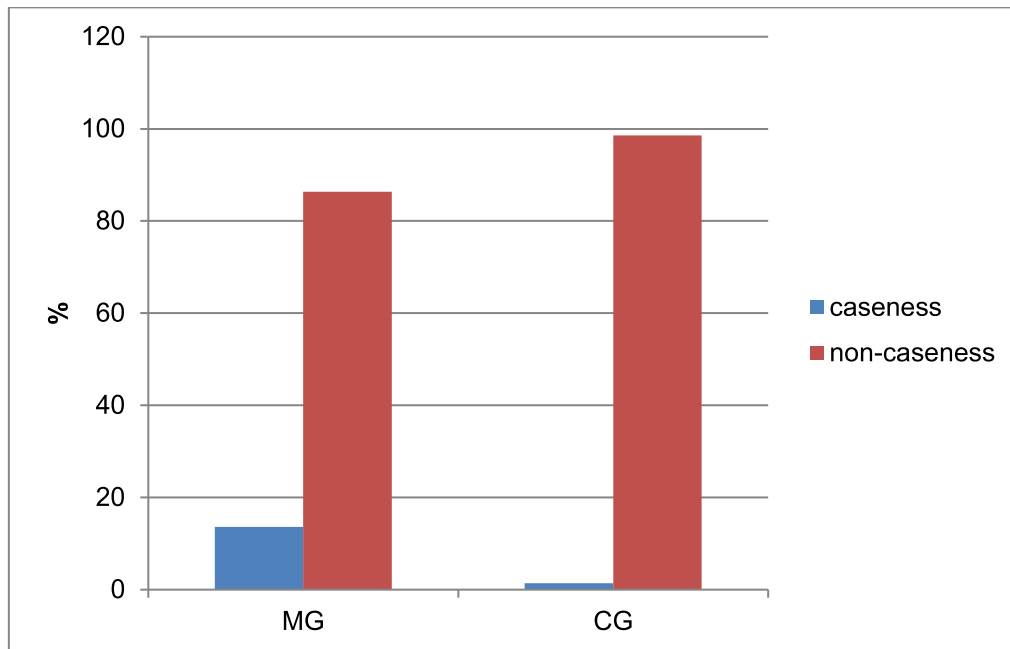
As shown in Figure 4.1, a larger proportion of participants were without anxiety caseness (85.92%, n=61) in the CG, compared to the MG (69.70%, n=46). A Chi-square test for independence (with Yates Continuity Correction) indicated a significant relationship between group (MG and CG) and caseness status:  $\chi^2(1, n=137) = 4.36, p=0.04, \phi=0.20$ .



**Figure 4.1. Anxiety status percentages for the CG and MG**

#### 4.3.1.3 Depression status

As shown in Figure 4.2, a larger proportion of participants were without depression caseness (98.59%, n=70) in the CG, compared to the MG (86.36%, n=57). Given the minimal number of depression caseness in the CG, a Chi Square could not be conducted; results from a Fisher's Exact Test, indicated a significant relationship between group (MG and CG) and caseness status ( $p<0.01$ ).



**Figure 4.2. Depression status percentages for the CG and MG**

#### **4.3.1.4 Summary of 1st hypothesis**

In support of hypothesis 1; participants in the CG group have significantly lower levels of anxiety and depression and significantly higher levels of wellbeing compared to the MG. In addition, the CG is significantly less likely to be classed as caseness for both anxiety and depression compared to the MG.

**4.3.2. Hypothesis 2** - The MG will differ from the CG in terms of health locus of control, perceived social support, coping style and resilience.

The second hypothesis examines the differences in health locus of control, perceived social support, coping style and resilience scores for the MG and CG.

#### **4.3.2.1 Health locus of control**

As shown in Table 4.7, mean scores for IHLOC were 25.18 (SD=4.77) for the CG, and 24.62, (SD=4.73) for the MG; mean scores for CHLOC were 17.61, (SD=4.86) for the CG, and 18.82, (SD=5.71) the MG; whilst mean scores for POHLOC were 13.03, (SD=4.09) for the CG and 13.72, (SD=5.16) for the MG.

**Table 4.7: Mean (SD) Health Locus of Control Scores for the MG and CG**

	<b>MG (n=65)</b> <b>Mean (SD)</b>	<b>CG (n=71)</b> <b>Mean (SD)</b>
<b>IHLOC</b>	24.62 (4.73)	25.18 (4.77)
<b>CHLOC</b>	18.82 (5.71)	17.61 (4.86)
<b>POHLOC</b>	13.72 (5.16)	13.03 (4.09)

Results from a series of independent samples t-tests indicated no statistically significant difference between the MG and CG for mean scores on the IHLOC ( $t(134)=0.70$ ,  $p=0.49$ ); CHLOC ( $t(134)=-1.33$ ,  $p=0.19$ ) or POHLOC ( $t(134)=-0.88$ ,  $p=0.38$ ).

#### **4.3.2.2 Perceived social support**

As shown in Table 4.8, mean scores for perceived social support Significant Other were 24.20 (SD=5.70) for the CG, and 25.09, (SD=5.01) for the MG; Family were 22.80, (SD=5.71) for the CG, and 23.21, (SD=5.82) the MG; and Friends were 22.73, **(SD=4.55) for the CG and 22.98, (SD=5.56) for the MG.**

**Table 4.8: Perceived Social Support (MG & CG)**

	<b>MG (n=66)</b> <b>Mean (SD)</b>	<b>CG (n=71, SO n=70)</b> <b>Mean (SD)</b>
<b>Significant Other (SO)</b>	25.09 (5.01)	24.20 (5.70)
<b>Family</b>	23.21 (5.82)	22.80 (5.71)
<b>Friends</b>	22.98 (5.56)	22.73 (4.55)

A series of Mann-Whitney  $U$  tests revealed no statistically significant difference in median scores for; Significant Other (MG 28,  $n=66$ ; CG 26,  $n=70$ ;  $U=1969.00$ ,  $z=-1.57$ ,  $p=0.12$ ,  $r=0.13$ ); Family (MG 24,  $n=66$ ; CG 24,  $n=71$ ;  $U=2108.00$ ,  $z=-1.03$ ,  $p=0.31$ ,  $r=0.08$ ); or Friends (MG 24,  $n=66$ ; CG 24,  $n=71$ ;  $U=2092.50$ ,  $z=-1.09$ ,  $p=0.27$ ,  $r=0.09$ ). This suggests that levels of perceived social support were similar in the MG and CG.

#### **4.3.2.3 Coping style**

As shown in Table 4.9, mean scores for avoidant coping style were 17.96 (SD=3.50) for the CG, and 18.35, (SD=4.54) for the MG; for task focused coping were 23.44, (SD=5.30) for the CG, and 19.60, (SD=5.42) for the MG; for emotion focused coping were 23.52, (SD=4.19) for the CG, and 23.03, (SD=4.95) for the MG; and for self-blame were 4.58, (SD=1.65, median score=4) for the CG and 4.48, (SD=2.03, median score=4) for the MG.

**Table 4.9: Coping Style (MG & CG)**

	<b>MG (n=65) Mean (SD)</b>	<b>CG (n=71) Mean (SD)</b>
<b>Avoidant</b>	18.35 (4.54)	17.96 (3.50)
<b>Task focused</b>	19.60 (5.42)**	23.44 (5.30)**
<b>Emotion focused</b>	23.03 (4.95)	23.52 (4.19)
<b>Self-blame</b>	4.48 (2.03, MD=4)	4.58 (1.65, MD=4)

\*\* $p < 0.01$

Results from a series of independent samples *t*-tests revealed no statistically significant difference between the MG and CG in mean avoidant coping scores  $t(134) = -0.57$ ,  $p = 0.57$  or emotion focused coping scores;  $t(134) = 0.63$ ,  $p = 0.53$ . A Mann-Whitney *U* test revealed no statistically significant difference in self-blame coping style scores for participants in the MG (4,  $n = 65$ ) compared to the CG (4,  $n = 71$ );  $U = 2136.00$ ,  $z = -.76$ ,  $p = 0.45$ ,  $r = 0.07$ .

There was however, a significantly lower mean task focused coping score for the MG ( $M = 19.60$ ,  $SD = 5.42$ ) compared to the CG ( $M = 23.44$ ,  $SD = 5.30$ );  $t(134) = 4.17$ ,  $p < 0.01$ , two tailed. The magnitude of the differences in means (mean difference = 3.84, 95% CI: 2.02 to 5.66) was moderate (eta squared = 0.11), suggesting that participants in the MG are less likely (or less able) to use a task focused coping style than the CG.

#### **4.3.2.4 Resilience**

There was no statistically significant difference in resilience scores between the MG (mean = 27.91,  $SD = 6.61$ ) and the CG (mean = 27.90,  $SD = 6.50$ ), ( $t(135) = -0.01$ ,  $p = 0.99$ ).

#### **4.3.2.5 Summary of 2nd hypothesis**

These results indicate that the 2<sup>nd</sup> hypothesis was partially supported as participants in the CG were significantly more likely to employ a task focused coping style, in comparison to the MG. The two groups, however, show no statistically significant difference in terms of health locus of control (internal, chance and powerful others), perceived social support (significant other, family and friends), coping style (avoidant, emotion and self-blame coping), or resilience scores.

**4.3.3 Hypothesis 3** - Levels of anxiety, depression and wellbeing will differ according to health locus of control type in the MG and CG.

The 3<sup>rd</sup> hypothesis examines whether health locus of control type affects anxiety, depression or wellbeing in the MG and CG.

#### 4.3.3.1 Miscarriage group

##### *Anxiety, depression and wellbeing with health locus of control*

**Table 4.10: Anxiety, depression, wellbeing with health locus of control (MG)**

	Anxiety		Depression		Wellbeing	
	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>
<b>Internal (n=65)</b>	-0.35	<0.01**	-0.15	0.22	0.32	0.01*
<b>Chance (n=65)</b>	0.03	0.80	0.00	0.98	-0.02	0.90
<b>Powerful others (n=65)</b>	0.03	0.80	0.11	0.38	-0.10	0.42

\*\* $p < 0.01$  \* $p < 0.05$

##### ***Anxiety***

As shown in Table 4.10, there was a significant, medium to large, negative correlation between anxiety and IHLOC, ( $r = -0.35$ ,  $n = 65$ ,  $p < 0.01$ ). Although there was a positive correlation between anxiety and CHLOC ( $r = 0.03$ ,  $n = 65$ ,  $p = 0.80$ ), and anxiety and POHLOC ( $r = 0.03$ ,  $n = 65$ ,  $p = 0.80$ ), these associations were not significant.

##### ***Depression***

Although there was a negative correlation between depression and IHLOC, ( $r = -0.15$ ,  $n = 65$ ,  $p = 0.22$ ), and a positive correlation between depression and CHLOC ( $r = 0.00$ ,  $n = 65$ ,  $p = 0.98$ ), and depression and POHLOC ( $r = 0.11$ ,  $n = 65$ ,  $p = 0.38$ ), none of these correlations were significant.

##### ***Wellbeing***

There was a significant, medium to large, positive correlation between wellbeing and IHLOC ( $r = 0.32$ ,  $n = 65$ ,  $p = 0.01$ ). Although there was a negative association between wellbeing and CHLOC ( $r = -0.02$ ,  $n = 65$ ,  $p = 0.90$ ) and POHLOC ( $r = -0.10$ ,  $n = 65$ ,  $p = 0.42$ ) these correlations were not significant.

#### 4.3.3.2 Comparative group

##### *Anxiety, depression and wellbeing with health locus of control*

Table 4.11: Anxiety, depression, wellbeing with health locus of control (CG)

	Anxiety		Depression		Wellbeing	
	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>
Internal (n=71)	0.08	0.49	-0.13	0.29	0.28	0.02*
Chance (n=71)	-0.23	<0.05*	0.07	0.56	0.09	0.45
Powerful others (n=71)	-0.04	0.75	0.06	0.63	0.10	0.39

\* $p < 0.05$

##### **Anxiety**

As indicated in Table 4.11, anxiety had a significant, small to medium, negative relationship with CHLOC ( $r = -0.23$ ,  $n = 71$ ,  $p < 0.05$ ), indicating that participants who had lower levels of anxiety scored higher on CHLOC. Although there was a positive relationship between anxiety and IHLOC ( $r = 0.08$ ,  $n = 71$ ,  $p = 0.4$ ) and a negative relationship with POHLOC ( $r = -0.04$ ,  $n = 71$ ,  $p = 0.75$ ), these correlations were not significant.

##### **Depression**

There was a negative relationship between depression and IHLOC ( $r = -0.13$ ,  $n = 71$ ,  $p = 0.29$ ), and a positive relationship with CHLOC ( $r = 0.07$ ,  $n = 71$ ,  $p = 0.56$ ) and POHLOC ( $r = 0.06$ ,  $n = 71$ ,  $p = 0.63$ ), however, these correlations were not significant.

##### **Wellbeing**

There was a significant, small to medium, positive correlation found between wellbeing and IHLOC ( $r = 0.28$ ,  $n = 71$ ,  $p = 0.02$ ), indicating that participants who scored higher on IHLOC had higher wellbeing scores. Wellbeing had a positive relationship with CHLOC ( $r = 0.09$ ,  $n = 71$ ,  $p = 0.45$ ) and POHLOC ( $r = 0.10$ ,  $n = 71$ ,  $p = 0.39$ ), however these were not found to be significant.

#### 4.3.3.3 Summary of 3rd hypothesis

As indicated by the results, the 3<sup>rd</sup> hypothesis is partially supported with IHLOC significantly associated with anxiety and wellbeing; participants scoring higher on IHLOC have lower anxiety and higher wellbeing scores in the MG. In the CG there were significant correlations found between IHLOC and anxiety and CHLOC and wellbeing, indicating that participants scoring higher on IHLOC have higher wellbeing scores and those scoring higher on the CHLOC have lower levels of anxiety in the CG.

**4.3.4 Hypothesis 4** - Women with higher levels of perceived social support will have lower levels of anxiety and depression, and higher wellbeing in the MG and CG.

The 4<sup>th</sup> hypothesis examines the relationship between levels of perceived social support and anxiety, depression and wellbeing in the MG and CG.

#### 4.3.4.1 Miscarriage group

**Table 4.12: Anxiety, depression, wellbeing with perceived social support (MG)**

	Anxiety		Depression		Wellbeing	
	<i>r<sub>s</sub></i>	<i>p</i>	<i>r<sub>s</sub></i>	<i>p</i>	<i>r<sub>s</sub></i>	<i>p</i>
<b>Significant other (n=66)</b>	-0.09	0.24	-0.11	0.20	0.24	0.03*
<b>Family (n=66)</b>	-0.14	0.13	-0.08	0.27	0.21	<0.05*
<b>Friends (n=66)</b>	-0.19	0.07	-0.06	0.32	0.19	0.06

\* $p < 0.05$

#### **Anxiety**

As shown in Table 4.12, there was a negative correlation found between anxiety and perceived social support for Significant Other ( $r_s = -0.09$ ,  $n=66$ ,  $p=0.24$ ), Family ( $r_s = -0.14$ ,  $n=66$ ,  $p=0.13$ ), and Friends ( $r_s = -0.19$ ,  $n=66$ ,  $p=0.07$ ), none of these correlations, however, were significant.

#### **Depression**

There was a negative correlation found between depression and perceived social support for Significant Other ( $r_s = -0.11$ ,  $n=66$ ,  $p=0.20$ ), Family ( $r_s = -0.08$ ,  $n=66$ ,  $p=0.27$ ), and Friends ( $r_s = -0.06$ ,  $n=66$ ,  $p=0.32$ ), none of these correlations however, were significant.



## Wellbeing

There was a significant, small to medium, positive correlation found between wellbeing and perceived social support for significant other ( $r_s=0.24$ ,  $n=66$ ,  $p=0.03$ ) and family ( $r_s=0.21$ ,  $n=66$ ,  $p<0.05$ ). Although there was a positive correlation between wellbeing and friends ( $r_s=0.19$ ,  $n=66$ ,  $p=0.06$ ), this correlation was not significant.

### 4.3.4.2 Comparative group

**Table 4.13: Anxiety, depression, wellbeing with perceived social support (CG)**

	Anxiety		Depression		Wellbeing	
	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>
<b>Significant other (n=70)</b>	-0.03	0.42	-0.36	<0.01**	0.47	0.01**
<b>Family (n=71)</b>	-0.07	0.28	-0.10	0.21	0.27	0.01*
<b>Friends (n=71)</b>	-0.01	0.46	-0.09	0.24	0.17	0.08

\*\* $p<0.01$  \* $p<0.05$

## Anxiety

As shown in Table 4.13, there was a negative correlation found between anxiety and perceived social support on the significant other subscale ( $r_s=-0.03$ ,  $n=70$ ,  $p=0.42$ ), the family subscale ( $r_s=-0.07$ ,  $n=71$ ,  $p=0.28$ ), and the friends subscale ( $r_s=-0.01$ ,  $n=71$ ,  $p=0.46$ ), none of these correlations, however, were significant.

## Depression

There was a significant, medium to large, negative correlation found between depression and perceived social support on the significant other subscale ( $r_s=-0.36$ ,  $n=70$ ,  $p<0.01$ ). Although there was a negative correlation between depression and the family ( $r_s=-0.10$ ,  $n=71$ ,  $p=0.21$ ) and friends subscale ( $r_s=-0.09$ ,  $n=71$ ,  $p=0.24$ ), these correlations were not significant.

## Wellbeing

There was a significant, medium to large, positive correlation found between wellbeing and perceived social support on the significant other subscale ( $r_s=0.47$ ,  $n=70$ ,  $p<0.01$ ) and a significant, small to medium, positive correlation found between wellbeing and perceived social support on the family subscale ( $r_s=0.27$ ,  $n=71$ ,  $p=0.01$ ). Although there was a positive

correlation between wellbeing and the friends subscale ( $r_s=0.17$ ,  $n=71$ ,  $p=0.08$ ), it was not significant.

#### 4.3.4.3 Summary of 4th hypothesis

As indicated by the results displayed, the 4<sup>th</sup> hypothesis is partially supported with significant correlations found between the perceived social support significant other and family subscales with wellbeing: indicating that participants with higher levels of perceived social support from significant other and family have higher wellbeing in the MG. In addition there were significant correlations found between the significant other subscale and depression and wellbeing amongst the CG; indicating that participants with higher levels of perceived support from significant others have lower levels of depression and higher wellbeing. Higher levels of perceived social support from family were associated with higher levels of wellbeing in the CG.

Significant correlations were found between the perceived social support significant other and family subscales with wellbeing amongst the MG: indicating that participants with higher levels of perceived social support from significant other and family have higher levels of wellbeing in the MG.

**4.3.5 Hypothesis 5** - Coping style will be related to levels of anxiety, depression and wellbeing in the MG and CG.

The 5<sup>th</sup> hypothesis examines the relationship between coping styles and anxiety, depression and wellbeing, for the MG and CG.

#### 4.3.5.1 Miscarriage group

##### *Coping styles with anxiety, depression and wellbeing*

**Table 4.14: Anxiety, depression, wellbeing with coping style (MG)**

	Anxiety		Depression		Wellbeing	
	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>
<b>Avoidant (n=65)</b>	0.15	0.24	0.15	0.22	-0.10	0.44
<b>Task focused (n=65)</b>	-0.26	0.04*	-0.24	0.06	0.29	0.02*
<b>Emotion focused (n=65)</b>	-0.21	0.10	-0.20	0.12	0.36	<0.01**
<b>Self-blame (n=65)†</b>	0.60	<0.01**	0.61	<0.01**	-0.51	<0.01**

† Spearman's rho correlation. One participant in the MG did not respond to the coping style questions.

\*\* $p<0.01$  \* $p<0.05$

## Anxiety

As indicated in Table 4.14, anxiety had a significant, large to very large, positive correlation with self-blame ( $r_s=0.60$ ,  $n=65$ ,  $p<0.01$ ) and a significant, small to medium, negative correlation with task focused ( $r=-0.26$ ,  $n=65$ ,  $p=0.04$ ). Although there was a positive correlation with avoidant coping ( $r=0.15$ ,  $n=65$ ,  $p=0.24$ ) and a negative correlation with emotion focused coping ( $r=-0.21$ ,  $n=65$ ,  $p=0.10$ ), these were not significant.

## Depression

Depression had a significant, large to very large, positive correlation with self-blame ( $r_s=0.61$ ,  $n=65$ ,  $p<0.01$ ). Although there was a positive correlation with avoidant coping ( $r=0.15$ ,  $n=65$ ,  $p=0.22$ ) and a negative correlation with task focused ( $r=-0.24$ ,  $n=65$ ,  $p=0.06$ ) and emotion focused ( $r=-0.20$ ,  $n=65$ ,  $p=0.12$ ), these were not significant.

## Wellbeing

Wellbeing had a significant, large to very large, negative correlation with self-blame ( $r_s=-0.51$ ,  $n=65$ ,  $p<0.01$ ), a significant, small to medium, positive correlation with task focused ( $r=0.29$ ,  $n=65$ ,  $p=0.02$ ) and a significant, medium to large, positive correlation with emotion focused coping ( $r=0.36$ ,  $n=65$ ,  $p<0.01$ ). Although there was a negative correlation with avoidant coping ( $r=-0.10$ ,  $n=65$ ,  $p=0.44$ ), it was not significant.

### 4.3.5.2 Comparative group

#### *Coping styles with anxiety, depression and wellbeing*

**Table 4.15: Anxiety, depression, wellbeing with coping style (CG)**

	Anxiety		Depression		Wellbeing	
	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>
<b>Avoidant (n=71)</b>	0.13	0.30	0.32	<0.01**	-0.22	0.07
<b>Task focused (n=71)</b>	-0.13	0.29	-0.30	0.01*	0.37	<0.01**
<b>Emotion focused (n=71)</b>	-0.04	0.75	-0.36	<0.01**	0.44	<0.01**
<b>Self-blame † (n=71)</b>	0.24	0.04*	0.37	<0.01**	-0.43	<0.01**

† Spearman's rho correlation

\*\* $p<0.01$  \* $p<0.05$

### ***Anxiety***

As indicated in Table 4.15, anxiety had a significant, small to medium, positive correlation with self-blame ( $r_s=0.24$ ,  $n=71$ ,  $p=0.04$ ). Although there was a positive correlation with avoidant coping ( $r=0.13$ ,  $n=71$ ,  $p=0.30$ ) and a negative correlation with task focused ( $r=-0.13$ ,  $n=71$ ,  $p=0.29$ ) and emotion focused coping ( $r=-0.04$ ,  $n=71$ ,  $p=0.75$ ), these were not significant.

### ***Depression***

Depression had a significant, medium to large, positive correlation with avoidant coping ( $r=0.32$ ,  $n=71$ ,  $p<0.01$ ) and self-blame ( $r_s=0.37$ ,  $n=71$ ,  $p<0.01$ ); a significant medium, negative correlation with task focused ( $r=-0.30$ ,  $n=71$ ,  $p=0.01$ ) and a significant, medium to large, negative correlation with emotion focused coping ( $r=-0.36$ ,  $n=71$ ,  $p<0.01$ ).

### ***Wellbeing***

Wellbeing had a significant, medium to large, negative correlation with self-blame ( $r_s=-0.43$ ,  $n=71$ ,  $p<0.01$ ) and a significant, medium to large, positive correlation with task focused ( $r=0.37$ ,  $n=71$ ,  $p<0.01$ ) and emotion focused coping ( $r=0.44$ ,  $n=71$ ,  $p<0.01$ ). Although there was a negative correlation with avoidant coping ( $r=-0.22$ ,  $n=71$ ,  $p=0.07$ ), it was not significant.

#### ***4.3.5.3 Summary of 5th hypothesis***

Overall, these results demonstrate partial validation of the 5<sup>th</sup> hypothesis. For the MG, the findings indicate that participants who score lower on the self-blame coping style scale have lower anxiety and depression and higher wellbeing scores. Participants who score highly on the task focused coping style have lower anxiety and higher wellbeing. Whilst those who score highly on emotion focused coping have higher wellbeing.

In the CG, participants who score lower on the self-blame coping style scale have lower anxiety and depression and higher wellbeing. Those who score lower on the avoidant focused coping styles have lower depression; whereas participants who use emotional and task focused coping have lower depression and higher wellbeing scores.

**4.3.6 Hypothesis 6** - Women with higher resilience will have lower levels of anxiety and depression, and higher wellbeing in the MG and CG.

The 6<sup>th</sup> hypothesis examines the relationship between resilience scores and anxiety, depression and wellbeing, for the MG and CG.

#### 4.3.6.1 Miscarriage group

##### *Resilience with anxiety, depression and wellbeing*

**Table 4.16: Anxiety, depression, wellbeing with resilience (MG)**

	Anxiety		Depression		Wellbeing	
	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>
<b>Resilience (n=66)</b>	-0.31	0.01*	-0.45	<0.01**	0.57	<0.01**

\*\* $p < 0.01$  \* $p < 0.05$

As indicated by the results in Table 4.16, resilience had a significant, medium to large, negative correlation with anxiety ( $r = -0.31$ ,  $n = 66$ ,  $p = 0.01$ ) and depression ( $r = -0.45$ ,  $n = 66$ ,  $p < 0.01$ ); and a significant, large to very large, positive correlation with wellbeing ( $r = 0.57$ ,  $n = 66$ ,  $p < 0.01$ ), indicating that participants with higher resilience have lower anxiety and depression, in addition to higher wellbeing.

#### 4.3.6.2 Comparative group

##### *Resilience with anxiety, depression and wellbeing*

**Table 4.17: Anxiety, depression, wellbeing with resilience (CG)**

	Anxiety		Depression		Wellbeing	
	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>
<b>Resilience (n=71)</b>	-0.34	<0.01**	-0.44	<0.01**	0.68	<0.01**

\*\* $p < 0.01$

As indicated by the results in Table 4.17, resilience had a significant, medium to large, negative correlation with anxiety ( $r = -0.34$ ,  $n = 71$ ,  $p < 0.01$ ) and depression ( $r = -0.44$ ,  $n = 71$ ,  $p < 0.01$ ) and significant, large to very large, positive correlation with wellbeing ( $r = 0.68$ ,  $n = 71$ ,  $p < 0.01$ ). Participants with higher resilience have lower anxiety and depression, in addition to higher wellbeing.

#### **4.3.6.3 Summary of 6th hypothesis**

Overall, these results are in support of the 6<sup>th</sup> hypothesis. Participants who have higher resilience also have lower anxiety and depression, in addition to increased wellbeing scores in the MG and CG.

### **4.4 Summary of Results**

Findings reveal the impact of miscarriage on women's psychological wellbeing, in terms of heightened anxiety and depression and lower wellbeing compared to a comparative group of women of similar age and demographic characteristics. In the MG, almost a third of participants meet the criteria for anxiety caseness, whilst almost 1 in 7 participants meet the criteria for depression caseness.

#### **4.4.1 Differences between the MG and CG**

The CG had lower anxiety, depression and higher wellbeing scores than the MG, although the difference was not significantly different between the groups for anxiety. The CG was significantly less likely to be classed as caseness for both anxiety and depression than the MG. In terms of potential moderators of anxiety, depression and wellbeing, the two groups only differed in terms of coping style; with the CG significantly more likely to employ a task focused coping style.

#### **4.4.2 Significant predictors of anxiety, depression and wellbeing (MG & CG)**

##### ***Miscarriage Group***

Table 4.18 summarises the findings in terms of factors that predict lower anxiety and depression scores and higher wellbeing scores in the MG.

**Table 4.18: Predictors (MG)**

	<b>Lower Anxiety</b>	<b>Lower Depression</b>	<b>Higher Wellbeing</b>
<b>HLOC</b>	Higher IHLOC scores		Higher IHLOC scores
<b>Social Support</b>			Higher significant other and family scores.
<b>Coping Style</b>	Higher task focused coping scores.	Lower self-blame scores.	Higher task and emotion focused coping scores.
	Lower self-blame scores.		Lower self-blame scores.
<b>Resilience</b>	Higher resilience.	Higher resilience.	Higher resilience.

In the MG, the factors that predict lower levels of anxiety were higher IHLOC scores, higher task focused coping scores, and higher resilience scores, in addition to lower self-blame scores. The factors that predict lower levels of depression were higher resilience scores, in addition to lower self-blame scores. The factors that predict higher levels of wellbeing were higher IHLOC scores, higher perceived social support from significant other and family, higher task and emotion focused coping scores, and higher resilience scores, in addition to lower self-blame scores.

### **Comparative Group**

Table 4.19 summarises the findings in terms of factors that predict lower anxiety and depression scores and higher wellbeing scores in the CG.

**Table 4.19: Predictors (CG)**

	<b>Lower Anxiety</b>	<b>Lower Depression</b>	<b>Higher Wellbeing</b>
<b>HLOC</b>	Higher CHLOC scores		Higher IHLOC scores
<b>Social Support</b>		Higher significant other scores	Higher significant other and family scores
<b>Coping Style</b>	Lower self-blame scores	Higher task focused coping scores.  Lower avoidant and self-blame scores	Higher task and emotion focused coping scores  Lower self-blame scores
<b>Resilience</b>	Higher resilience	Higher resilience	Higher resilience

In the CG, the factors that predict lower levels of anxiety were higher CHLOC scores, higher resilience scores and lower self-blame scores. The factors that predict lower levels of depression were higher levels of perceived social support from their significant other, higher resilience scores, and higher task focused coping scores in addition to lower avoidant and self-blame scores. The factors that predict higher levels of wellbeing were higher IHLOC scores; higher perceived social support from significant other and family scores, higher resilience scores, higher task and emotion focused coping scores, in addition to lower self-blame scores.

### **4.4.3 Summary of findings**

This comparative study makes a unique contribution to the miscarriage literature, firstly because of the salutogenic perspective (Antonovsky 1987), which improves understanding of the factors that predict lower anxiety, depression and higher wellbeing, rather than focusing on

illness. Identifying the positive factors that predict enhanced psychological wellbeing, will increase understanding of women's experiences of miscarriage, and what is likely to generate enhanced psychological wellbeing. Such knowledge is essential in the development of interventions and midwifery education to enhance psychological wellbeing in women post-miscarriage to enable them to recover and flourish.

Inclusion of a comparative group who have not been exposed to miscarriage, but are similar in terms of age, socio-economic status and ethnicity provides evidence that any alterations in anxiety, depression or wellbeing scores are in fact a consequence of miscarriage. By identifying potential moderators of psychological wellbeing and using the theoretical grounding associated with concepts such as health locus of control, perceived social support, coping style and resilience from a salutogenic perspective, will enhance understanding around these theories, in miscarriage and non-miscarriage groups.

Whilst early intervention has been acknowledged as important in the maternity context, whereby services delivering psychological treatments should prioritise pregnant women (Health Improvement Scotland 2012), if there is a preventative focus, psychological treatments should be offered pre-conceptually to those whose psychological wellbeing may be affected by miscarriage. Understanding what is likely to maintain or improve psychological wellbeing following miscarriage over time, may help those with psychological distress, to flourish.

The next chapter of the thesis presents the results from the prospective study, which identifies possible predictors of positive mental health trajectories, in order to more fully understand factors that predict lower anxiety, lower depression and higher wellbeing over time.





## **CHAPTER 5**

### **PHASE 1 STAGE 2: THE PROSPECTIVE STUDY - DETERMINING THE INFLUENCE OF TIME AND MODERATING FACTORS ON PSYCHOLOGICAL WELLBEING AMONGST WOMEN FOLLOWING MISCARRIAGE**

#### **5.1 Introduction**

This chapter identifies possible predictors of positive mental health trajectories, in order to more fully understand factors that predict lower anxiety, depression and higher wellbeing over time. Although women's experience of miscarriage can be seen as unique (Moulder 2001), up to 50% suffer some form of psychological morbidity (Lok & Neugebauer 2007). Given this impact, and the possible deleterious effects, it is important to understand how women enhance their wellbeing over time. Continuing with the salutogenic perspective, this stage will identify the necessary power and resources that enable women to effectively cope with miscarriage. That way, appropriate and timely interventions can be developed for women who are psychologically distressed (Walker & Davidson 2001), and who would benefit from appropriate support following miscarriage.

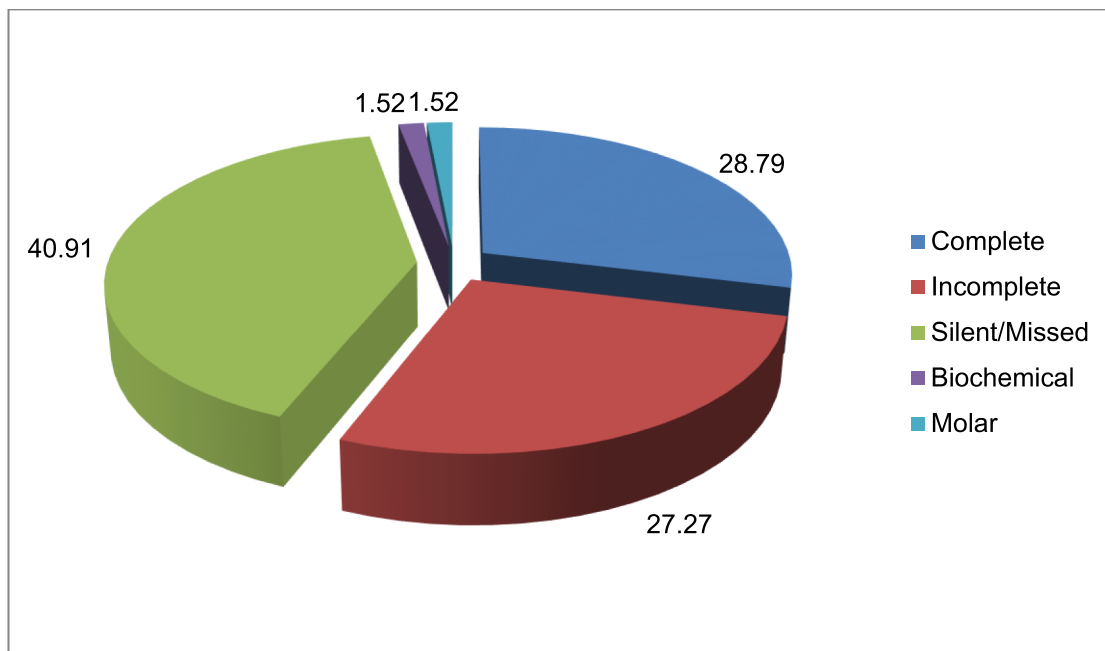
#### **5.2 Results**

This chapter will describe the results of Stage 2: The prospective study.

##### **5.2.1 Details of Miscarriage**

###### ***Type of miscarriage***

As shown in Figure 5.1, the group with the largest majority of participants was the group that experienced a silent/missed/delayed miscarriage (n=27; 40.91%), whilst 19 (28.79%) had a complete miscarriage, 18 (27.27%) had an incomplete miscarriage, 1 (1.52%) had a biochemical pregnancy and 1 (1.52%) reported a molar pregnancy.



**Figure**

### 5.1. Type of miscarriage reported by participants at baseline (%)

#### Type of treatment received

Of the 66 participants, 22 (33.33%) required surgical management following their miscarriage, 19 (28.79%) required medical management and 6 (9.09%) had to wait for the pregnancy to leave their body naturally. The remaining participants experienced complete miscarriage and required no formal treatment (28.79% n=19).

#### Gestational age at miscarriage

The gestational age in weeks at miscarriage ranged from 5-18 weeks gestation with a mean of 9.39 weeks (SD=2.40).

### 5.2.2 Demographic characteristics

Since the demographic characteristics of the 66 baseline participants are detailed in section 4.2; the following section will only report the details of those who completed the 6 and 13 month follow up.

#### Age

The mean age of participants was 32.82 (SD=5.37) for those completing the 6 month assessment and 32.96 (SD=5.18) for those completing the 13 month assessment 32.96 (SD=5.18). (See section 4.2 for Baseline Participants).

### ***Scottish Index of Multiple Deprivation Score (SIMD)***

The mean socio-economic status was 4869.25 (SD=1261.65) for participants who completed the 6 month assessment and 4822.84 (SD=1311.30) for those who completed 13 months. (See section 4.2 for Baseline Participants).

### ***Years in education***

Mean number of years in education was 15.71 (SD=3.16) for those who completed the 6 month assessment and 15.84 (SD=3.17) for those who completed 13 months. (See section 4.2 for Baseline Participants).

These figures indicate little difference in age, SIMD or education as a result of low study attrition.

## **5.3 Hypotheses**

The following section presents the results of each hypothesis in turn.

### **5.3.1 Hypothesis 1: Levels of anxiety, depression and wellbeing will be related to additional major life events.**

#### ***5.3.1.1 Additional major life events at baseline***

The number of total major life events (MLE) experienced ranged from 0 to 7 with a mean of 1.39 (SD=1.66); indicating that some participants reported a higher number of additional major life events than others.

#### ***5.3.1.2 Additional major life events with anxiety, depression and wellbeing***

To determine whether MLE was related to wellbeing, anxiety and depression a series of Spearman rho correlations were carried out. Results indicated a significant, medium to large, positive correlation between MLE and anxiety  $r_s=0.37$ ,  $n=66$ ,  $p<0.01$ , a significant, small to medium, positive correlation between MLE and depression  $r_s=0.29$ ,  $n=66$ ,  $p<0.05$ , and a significant, small to medium, negative correlation with wellbeing  $r_s=-0.29$ ,  $n=66$ ,  $p<0.05$ , as displayed in Table 5.1.

**Table 5.1: Relationship between major life events with anxiety, depression and wellbeing at baseline**

	Anxiety n=66		Depression n=66		Wellbeing n=66	
	$r_s$	$p$	$r_s$	$p$	$r_s$	$p$
<b>Total number of major life events</b>	0.37	$p<0.01$	0.29	0.02	-0.29	0.02

### **5.3.1.3 Summary of hypothesis 1**

These findings support hypothesis 1, as a lower number of major life events is significantly associated with lower levels of anxiety and depression and higher wellbeing scores.

### **5.3.2 Hypothesis 2: Levels of anxiety, depression and wellbeing will be related to reproductive history and reproductive status**

#### **5.3.2.1 Reproductive history and reproductive status**

##### **Baseline**

Reproductive history was examined to determine whether previous experience of miscarriage, pregnancy or having children affects levels of anxiety, depression and wellbeing at baseline.

##### **Previous miscarriage**

Of the 66 participants assessed at baseline, 28 (42.42%) had experienced a previous miscarriage, 17 (25.76%) had not had a previous miscarriage and 18 (27.27%) had never been pregnant, 3 participants did not respond to this question (4.55%). Of the 28 participants who had experienced miscarriage previously, 18 had experienced one previous miscarriage (64.29%), 6 (21.43%) had had two miscarriages previously, 3 (10.71%) had experienced 3 miscarriages previously and one (3.57%) had experienced 4 miscarriages previously.

##### **Previous miscarriage and anxiety, depression and wellbeing**

Mean anxiety, depression and wellbeing scores were calculated for women who had a previous miscarriage experience (n=28, 42.4%) compared to those without (n=38, 57.6%) at baseline. Women who had a previous miscarriage experience, had lower anxiety (mean=7.82, SD=4.95) and depression (mean=4.96, SD=3.69) and higher wellbeing (mean=46.26, SD=9.84) in comparison to women without (anxiety mean=8.79, SD=5.31; depression mean=5.39, SD=4.23; wellbeing mean=45.96, SD=10.02), as displayed in Table 5.2. Results from an independent-samples *t*-test, however, revealed no statistically significant difference

between the two groups for anxiety ( $t(64) = 0.75$ ,  $p = 0.45$ ; (two tailed); depression ( $t(64) = 0.43$ ,  $p = 0.67$ ; (two tailed) or wellbeing ( $t(64) = 0.12$ ,  $p = 0.90$ ; (two tailed)).

**Table 5.2: Previous miscarriage and mean (SD) anxiety, depression and wellbeing scores at baseline**

	n (%)	Anxiety Mean (SD)	Depression Mean (SD)	Wellbeing Mean (SD)
<b>Previous miscarriage experience</b>	28 (42.4)	7.82 (4.95)	4.96 (3.69)	45.96 (10.02)
<b>No previous miscarriage experience</b>	38 (57.6)	8.79 (5.31)	5.39 (4.23)	46.26 (9.84)

### ***Previous pregnancy***

Women were asked at baseline if their index miscarriage was a first pregnancy or not. Eighteen (27.27%) women reported that it was their first pregnancy and 48 (72.73%) reported that they had been pregnant before.

### ***Previous pregnancy and anxiety, depression and wellbeing***

To examine this further, mean anxiety depression and wellbeing scores were calculated. Women whose index miscarriage was a first pregnancy, had higher anxiety (mean=8.72, SD=4.94) and depression (mean=5.78, SD=4.18) scores, and lower wellbeing (mean=45.83, SD=9.09) scores at baseline, in comparison to the group who had been pregnant before (anxiety mean=8.25, SD=5.26; depression mean=5.00, SD=3.93; wellbeing mean=46.25, SD=10.20), as displayed in Table 5.3.

**Table 5.3: Previous pregnancy experience and anxiety, depression and wellbeing scores**

	n (%)	Mean (SD) Anxiety	Mean (SD) Depression	Mean (SD) Wellbeing
<b>Previous pregnancy experience</b>	18 (27.27)	8.72 (4.94)	5.78 (4.18)	45.83 (9.09)
<b>No previous pregnancy experience</b>	48 (72.73)	8.25 (5.26)	5.00 (3.93)	46.25 (10.20)

Results from an independent-samples  $t$ -test, however, indicated no statistically significant difference between the groups for anxiety,  $t(64) = 0.33$ ,  $p = 0.74$ ; depression,  $t(64) = 0.70$ ,  $p = 0.48$ ; or wellbeing,  $t(64) = -0.15$ ,  $p = 0.88$ , (two-tailed) at baseline.

### ***Previous children***

Of the 66 participants, 53.03% (n=35) had children ranging from one child (n=20) to five children (n=1). Twenty-eight participants had no children (42.42%) and three participants (4.55%) failed to respond to this question. There were no participants with previous experience of stillbirth or neonatal death in the study.

### ***Previous children and anxiety, depression and wellbeing***

Mean anxiety, depression and wellbeing scores were calculated for participants who had children compared to those who did not have children at baseline. Participants who had children had lower anxiety (mean=7.49, SD=5.19) and depression (mean=4.57, SD=3.99) scores, and higher wellbeing (mean=47.63, SD=10.17) scores compared to participants without (anxiety mean=8.96, SD=4.67; depression mean=5.68, SD=3.64; wellbeing mean=44.89, SD=8.66), as displayed in Table 5.4.

**Table 5.4: Mean (SD) anxiety, depression and wellbeing scores for those with and without children**

	n (%)	Mean (SD) Anxiety	Mean (SD) Depression	Mean (SD) Wellbeing
<b>Children</b>	35 (53.03)	7.49 (5.19)	4.57 (3.99)	47.63 (10.17)
<b>No children</b>	28 (42.42)	8.96 (4.67)	5.68 (3.64)	44.89 (8.66)

Results from a series of independent-samples *t*-tests indicated no statistically significant difference between the groups for anxiety ( $t(61)=-1.18$ ,  $p=0.25$ ), depression ( $t(61)=-1.14$ ,  $p=0.26$ ) or wellbeing scores ( $t(61)=1.13$ ,  $p=0.26$ ) at baseline.

### ***Reproductive status at 6 months***

At 6 months, 19.64% (n=11) of women were not actively trying for a baby, 32.14% (n=18) were actively trying for a baby, 39.29% (n=22) were pregnant, and 8.93% (n=6) had experienced another miscarriage.

**Table 5.6: Mean (SD) anxiety, depression and wellbeing scores for reproductive status at 6 months**

	n (%)	Mean (SD) Anxiety	Mean (SD) Depression	Mean (SD) Wellbeing
<b>Not actively trying for a baby</b>	11 (19.64)	8.09 (6.35)	2.55 (2.77)	49.91 (8.34)
<b>Actively trying for a baby</b>	18 (32.14)	8.78 (4.88)	2.94 (3.04)	49.72 (9.77)
<b>Pregnant</b>	21 (37.50)	7.10 (2.61)	2.29 (2.24)	55.05 (7.02)
<b>Had another miscarriage</b>	6 (10.71)	8.50 (5.58)	2.33 (2.16)	54.33 (10.88)

***Reproductive status and anxiety, depression and wellbeing at 6 months***

A one-way between groups analysis of variance (ANOVA) with post-hoc tests was conducted to explore the impact of reproductive status on levels of anxiety, depression and wellbeing at 6 months. Subjects were divided into the categories according to their reproductive status. The effect of reproductive status had no significant effect on anxiety  $F(3, 52)=0.47$ ,  $p=0.71$ ; depression  $F(3, 52)=0.22$ ,  $p=0.88$ ; or wellbeing  $F(3, 52)=1.63$ ,  $p=0.19$ , at 6 months.

***Reproductive status at 13 months***

At 13 months, 16.33% (n=8) reported they were not actively trying for a baby, 16.33% (n=8) reported that they were actively trying for a baby, 36.73% (n=18) were pregnant, and 30.61% (n=15) had given birth.

**Table 5.7: Mean (SD) anxiety, depression and wellbeing scores for reproductive status at 13 months**

	n (%)	Mean (SD) Anxiety	Mean (SD) Depression	Mean (SD) Wellbeing
<b>Not actively trying for a baby</b>	8 (16.33)	6.75 (4.65)	3.38 (3.66)	49.00 (13.64)
<b>Actively trying for a baby</b>	8 (16.33)	6.25 (6.76)	3.38 (4.57)	52.00 (12.92)
<b>Pregnant</b>	18 (36.73)	8.06 (4.58)	2.61 (2.83)	53.61 (7.29)
<b>Had a baby</b>	15 (30.61)	5.73 (4.46)	2.87 (4.14)	55.47 (9.82)



### ***Reproductive status and anxiety, depression and wellbeing at 13 months***

A one-way between groups analysis of variance (ANOVA) with post-hoc tests was conducted to explore the impact of reproductive status on levels of anxiety, depression and wellbeing at 13 months. Subjects were divided into the categories according to their reproductive status. The effect of reproductive status had no significant effect on anxiety  $F(3, 45)=0.65, p=0.59$ ; depression  $F(3, 45)=0.12, p=0.95$ ; or wellbeing  $F(3, 45)=0.74, p=0.53$ , at 13 months.

#### ***5.3.2.3 Summary of Hypothesis 2***

Collectively, these results do not support hypothesis 2, levels of anxiety, depression and wellbeing were not related to reproductive history at baseline or reproductive status at baseline, 6 or 13 months.

#### ***5.3.3 Hypothesis 3: Levels of anxiety, depression and wellbeing will be related to satisfaction with, and provision of healthcare***

Hypothesis 3 examines satisfaction with, and provision of healthcare and how it impacts on anxiety, depression and wellbeing. Satisfaction with, and provision of healthcare was measured using responses gathered over time. Overall satisfaction score and whether or not they had received follow up was examined over time.

##### ***5.3.3.1 Satisfaction with care received from hospital staff at time of miscarriage***

Participants were asked how satisfied they felt about the care they received from hospital staff at the time of the miscarriage. Participants were grouped according to their satisfaction (baseline very satisfied and satisfied, 87.88%,  $n=58$ ; 6 months 85.71%,  $n=48$ ; 13 months 89.80%,  $n=44$ ) compared to dissatisfaction with care received from hospital staff (baseline dissatisfied and very dissatisfied 12.12%,  $n=8$ ; 6 months 14.29%,  $n=8$ ; 13 months 8.16%,  $n=4$ ). There was 1 (2.04%) non responder at 13 months.

#### ***Anxiety***

As demonstrated in table 5.8, mean anxiety scores were lower in the very satisfied and satisfied group at baseline (8.26,  $SD=4.98$ ) compared to the dissatisfied and very dissatisfied group (9.25,  $SD=6.54$ ). At 6 and 13 months, mean anxiety scores were lower in the dissatisfied and very dissatisfied group (6 months 6.75,  $SD=5.15$ ; 13 months 2.50,  $SD=1.73$ ) compared to the satisfied and very satisfied group (6 months 7.14,  $SD=4.94$ ; 13 months 9.25,  $SD=6.54$ ).

There were no statistically significant differences found between the two groups for anxiety at baseline or 6 months, (baseline anxiety  $t(64) = -0.51, p=0.61$ ; 6 months  $t(54) = 0.83, p=0.41$ ),

but at 13 months there were significantly lower anxiety scores in the dissatisfied and very dissatisfied group  $t(8.74)=4.06$ ,  $p<0.01$ , (two tailed). The magnitude of the differences in means (mean difference=4.64, 95% CI: 2.04 to 7.23) was moderate (eta squared=0.11).

## **Depression**

In relation to depression at baseline, mean scores were lower in the very satisfied and satisfied group (5.09, SD=3.90) compared to the dissatisfied and very dissatisfied group (6.13, SD=4.73). At 6 and 13 months, mean depression scores were lower in the dissatisfied and very dissatisfied group (6 months 1.88, SD=2.36; 13 months 0.75, SD=0.96) compared to the satisfied and very satisfied group (6 months 2.67, SD=2.60; 13 months 3.09, SD=3.72).

There were no statistically significant differences found between the two groups for depression at baseline, 6 or 13 months (baseline  $t(64)=-0.69$ ,  $p=0.49$ , 6 months  $t(54)=0.81$ ,  $p=0.42$ ; 13 months  $t(46)=1.25$ ,  $p=0.22$ ; (two tailed).

## **Wellbeing**

Wellbeing scores were higher in the very satisfied and satisfied group (baseline 46.48, SD=9.99; 6 months 52.44, SD=8.82) in comparison to the dissatisfied and very dissatisfied group (baseline 43.63, SD=8.94; 6 months 51.13, SD=9.23) at baseline and 6 months. At 13 months, mean wellbeing scores were higher in the dissatisfied and very dissatisfied group (56.50, SD=0.58) compared to the satisfied and very satisfied group (53.05, SD=10.61).

There were no statistically significant differences found between the two groups for wellbeing at baseline or 6 months (baseline  $t(64)=0.77$ ,  $p=0.45$ ; 6 months  $t(54)=0.39$ ,  $p=0.70$  (two tailed), however at 13 months wellbeing scores were significantly higher in the dissatisfied and very dissatisfied group  $t(45.16)=-2.13$ ,  $p=0.45$  (two tailed). The magnitude of the differences in means (mean difference=-3.46, 95% CI: -6.73 to -0.18) was moderate (eta squared=0.09).

**Table 5.8 Satisfaction with care received from hospital staff at time of miscarriage and anxiety, depression and wellbeing scores across time**

	Very satisfied & satisfied			Dissatisfied & very dissatisfied		
	B (n=58)	6 (n=48)	13 (n=44)	B (n=8)	6 (n=8)	13 (n=4)
<b>Mean (SD) Anxiety</b>	8.26 (4.98)	8.19 (4.45)	7.14 (4.94)	9.25 (6.54)	6.75 (5.15)	2.50 (1.73)
<b>Mean (SD) Depression</b>	5.09 (3.90)	2.67 (2.60)	3.09 (3.72)	6.13 (4.73)	1.88 (2.36)	0.75 (0.96)
<b>Mean (SD) Wellbeing</b>	46.48 (9.99)	52.44 (8.82)	53.05 (10.61)	43.63 (8.94)	51.13 (9.23)	56.50 (0.58)

### **5.3.3.2 Satisfaction with emotional support received from hospital staff**

Participants were asked how satisfied they felt with the emotional support they received from hospital staff at the time of the miscarriage. Participants were grouped according to satisfaction (very satisfied and satisfied baseline 90.91%, n=60; 6 months 80.36%, n=45; 13 months 89.36%, n=45) compared to dissatisfaction (dissatisfied and very dissatisfied baseline 9.09%, n=6; 6 months 17.86%, n=10; 13 months 10.64%, n=5).

#### **Anxiety**

Mean anxiety scores are reported in Table 5.9, with the dissatisfied and very dissatisfied group scoring lower anxiety, (baseline 7.67, SD=5.54; 6 months 6.80, SD=4.66; 13 months 5.40, SD=5.32) compared to the very satisfied and satisfied (baseline 8.45, SD=5.15; 6 months 8.42, SD=4.39; 13 months 7.05, SD=4.88).

There were no statistically significant differences found between the two groups for anxiety at baseline  $t(64) = 0.35$ ,  $p = 0.73$ ; 6 months  $t(53) = 1.05$ ,  $p = 0.30$ ; or 13 months  $t(45) = 0.71$ ,  $p = 0.48$ ; (two tailed).

#### **Depression**

Mean depression scores are reported in Table 5.9, with the dissatisfied and very dissatisfied group scoring lower depression scores over time (baseline 3.33, SD=3.45; 6 months 1.90, SD=2.56; 13 months 2.40, SD=4.34) compared to the very satisfied and satisfied (baseline 5.40, SD=4.01; 6 months 2.76, SD=2.57; 13 months 3.02, SD=3.60).

There were no statistically significant differences found between the two groups for depression at baseline  $t(64)=1.22, p=0.23$ ; 6 months  $t(53)=0.95, p=0.35$ ; or 13 months  $t(45)=0.36, p=0.72$ ; (two tailed).

### Wellbeing

Mean wellbeing scores are reported in Table 5.9, with the dissatisfied and very dissatisfied group scoring higher wellbeing at baseline and 6 months (baseline 46.17, SD=7.14; 6 months 52.80, SD=7.74) compared to the very satisfied and satisfied (baseline 46.13, SD=10.12; 6 months 51.73, SD=8.78). At 13 months the very satisfied and satisfied had higher wellbeing scores (53.19, SD=10.03) compared to the dissatisfied and very dissatisfied group (51.40, SD=11.42).

There were no statistically significant differences found between the two groups for wellbeing at baseline  $t(64)=-0.01, p=0.99$ , 6 months  $t(53)=-0.35, p=0.73$ ; or 13 months  $t(45)=0.37, p=0.71$  (two tailed).

**Table 5.9: Satisfaction with emotional support received from hospital staff and anxiety, depression and wellbeing scores over time**

	Very satisfied & satisfied			Dissatisfied & very dissatisfied		
Mean (SD)	B (n=60)	6 (n=45)	13 (n=42)	B (n=6)	6 (n=10)	13 (n=5)
Anxiety	8.45 (5.15)	8.42 (4.39)	7.05 (4.88)	7.67 (5.54)	6.80 (4.66)	5.40 (5.32)
Depression	5.40 (4.01)	2.76 (2.57)	3.02 (3.60)	3.33 (3.45)	1.90 (2.56)	2.40 (4.34)
Wellbeing	46.13 (10.12)	51.73 (8.78)	53.19(10 .03)	46.17 (7.14)	52.80 (7.74)	51.40 (11.42)

#### 5.3.3.3 Satisfaction with the amount of information received from hospital staff

Participants were asked how satisfied they felt with the amount of information received from hospital staff at the time of the miscarriage. Participants were grouped according to their satisfaction (very satisfied and satisfied baseline 84.85%, n=56; 6 months 83.93%, n=47; 13 months 81.63%, n=40) compared to dissatisfaction (dissatisfied and very dissatisfied baseline 15.15%, n=10; 6 months 16.07%, n=9; 13 months 18.37%, n=9).

## **Anxiety**

The very satisfied and satisfied group had lower anxiety scores at baseline and 6 months (baseline 8.05, SD=4.97; 6 months 7.49, SD=4.16) compared to the dissatisfied and very dissatisfied group (baseline 10.20, SD=6.00; 6 months 10.56, SD=5.73), however at 13 months the dissatisfied and very dissatisfied group had lower anxiety scores (5.40, SD=5.32) compared to the satisfied and very satisfied group (7.05, SD=4.88) as displayed in Table 5.10.

No statistically significant differences were found between the two groups for anxiety at baseline  $t(64)=-1.22$ ,  $p=0.23$ ; 6 months  $t(54)=-1.90$ ,  $p=0.06$ ; or 13 months  $t(47)=-0.11$ ,  $p=0.91$  (two tailed).

## **Depression**

The very satisfied and satisfied group had lower depression scores at baseline and 6 months (baseline 5.16, SD=4.13; 6 months 2.64, SD=2.70) compared to the dissatisfied and very dissatisfied group, (baseline 5.50, SD=3.21; 6 months 2.11, SD=1.76), however at 13 months the dissatisfied and very dissatisfied group had lower depression scores (2.89, SD=3.52) compared to the satisfied and very satisfied group (2.95, SD=3.66) as displayed in Table 5.10.

No statistically significant differences were found between the two groups for depression at baseline  $t(64)=0.25$ ,  $p=0.81$ ; 6 months  $t(16.21)=0.75$ ,  $p=0.47$ ; or at 13 months  $t(47)=0.05$ ,  $p=0.96$  (two tailed).

## **Wellbeing**

The very satisfied and satisfied group had higher wellbeing scores over time (baseline 46.36, SD=10.35; 6 months 52.36, SD=9.17; 13 months 53.35, SD=10.27) compared to the dissatisfied and very dissatisfied group, (baseline 44.90, SD=6.62; 6 months 51.67, SD=7.00; 13 months 52.33, SD=10.22) as displayed in Table 5.10.

No statistically significant differences were found between the two groups for wellbeing at baseline  $t(64)=0.43$ ,  $p=0.67$ , 6 months  $t(54)=0.22$ ,  $p=0.83$ ; or at 13 months  $t(47)=0.27$ ,  $p=0.79$  (two tailed).

**Table 5.10: Satisfaction with amount of information received from hospital staff and anxiety, depression and wellbeing scores**

	Very satisfied & satisfied			Dissatisfied & very dissatisfied		
Mean (SD)	B (n=56)	6 (n=47)	13 (n=40)	B (n=10)	6 (n=9)	13 (n=9)
Anxiety	8.05 (4.97)	7.49 (4.16)	6.80 (5.00)	10.20 (6.00)	10.56 (5.73)	7.00 (4.74)
Depression	5.16 (4.13)	2.64 (2.70)	2.95 (3.66)	5.50 (3.21)	2.11 (1.76)	2.89 (3.52)
Wellbeing	46.36 (10.35)	52.36 (9.17)	53.35 (10.27)	44.90 (6.62)	51.67 (7.00)	52.33 (10.22)

#### **5.3.3.4 Satisfaction with the way the news of miscarriage was given by staff**

Participants were asked how satisfied they felt with the way the news of miscarriage was given by staff at the time of the miscarriage at baseline. Participants were grouped according to their satisfaction (very satisfied and satisfied, baseline 89.39%, n=59; 6 months 87 %, n=47; 13 months 87.23%, n=41) compared to dissatisfaction (dissatisfied and very dissatisfied, baseline 10.61%, n=7; 6 months 13%, n=7; 13 months 12.77%, n=6).

#### **Anxiety**

The very satisfied and satisfied group had lower anxiety scores at baseline and 6 months (baseline 7.97, SD=5.02; 6 months 7.91, SD=4.26) compared to the dissatisfied and very dissatisfied group, (baseline 11.86, SD=5.21; 6 months 9.00, SD=6.78), however at 13 months the dissatisfied and very dissatisfied group had lower anxiety scores (3.33, SD=3.01) compared to the satisfied and very satisfied group (7.27, SD=4.96), as displayed in Table 5.11.

No statistically significant differences were found between the two groups for anxiety at baseline  $t(64) = -1.93, p = 0.06$ ; 6 months  $t(52) = -0.58, p = 0.57$ ; or 13 months  $t(45) = 1.88, p = 0.07$  (two tailed).

#### **Depression**

The very satisfied and satisfied group had lower depression scores at baseline (5.03; SD=4.02) compared to the dissatisfied and very dissatisfied group, (6.71, SD=3.59), however at 6 and 13 months the dissatisfied and very dissatisfied group had lower depression scores (6 months

1.71, SD=2.06; 13 months 0.50, SD=0.84) compared to the satisfied and very satisfied group (3.17, SD=3.63), as displayed in Table 5.11.

No statistically significant differences were found between the two groups for depression at baseline  $t(64) = -1.06$ ,  $p=0.30$ ; 6 months  $t(52) = 0.98$ ,  $p=0.33$ ; or 13 months  $t(45) = 1.78$ ,  $p=0.08$  (two tailed).

### Wellbeing

The very satisfied and satisfied group had higher wellbeing at baseline and 6 months (baseline 46.78, SD=9.97; 6 months 52.30, SD=9.23) compared to the dissatisfied and very dissatisfied group, (baseline 40.71, SD=7.16; 6 months 51.71, SD=7.16), however at 13 months the dissatisfied and very dissatisfied group had higher wellbeing scores (57.00, SD=6.16) compared to the satisfied and very satisfied group (52.90, SD=10.11), as displayed in Table 5.11.

No statistically significant differences were found between the two groups for wellbeing at baseline  $t(64) = 1.56$ ,  $p=0.12$ , 6 months  $t(52) = 0.16$ ,  $p=0.87$ ; or 13 months  $t(45) = -0.96$ ,  $p=0.34$  (two tailed).

**Table 5.11 Satisfaction with the way the news of miscarriage was given and anxiety, depression and wellbeing scores across time**

	Very satisfied & satisfied			Dissatisfied & very dissatisfied		
Mean (SD)	B (n=59)	6 (n=47)	13 (n=41)	B (n=7)	6 (n=7)	13 (n=6)
Anxiety	7.97 (5.02)	7.91 (4.26)	7.27 (4.96)	11.86 (5.21)	9.00 (6.78)	3.33 (3.01)
Depression	5.03 (4.02)	2.74 (2.66)	3.17 (3.63)	6.71 (3.59)	1.71 (2.06)	0.50 (0.84)
Wellbeing	46.78 (9.97)	52.30 (9.23)	52.90 (10.11)	40.71 (7.16)	51.71 (7.16)	57.00 (6.16)

#### 5.3.3.5 Overall satisfaction with care received from healthcare staff over time

Participants were asked about their overall satisfaction with care received from healthcare staff at the time of miscarriage at baseline, 6 months and 13 months. Participants were grouped according to their overall satisfaction (i.e. very satisfied and satisfied, baseline 92.42% n=61; 6 months 85.71% n=48; 13 months 85.71% n=42) compared to dissatisfaction (dissatisfied

and very dissatisfied, baseline 7.58% n=5; 6 months 14.29% n=8; 13 months 14.29% n=7), indicating that satisfaction levels decreased between baseline and 6 months.

### **Anxiety**

As displayed in Table 5.12, the dissatisfied group had lower anxiety at baseline and 13 months (baseline 7.60, SD=4.93; 13 months 5.86, SD=4.60) compared to the satisfied group (baseline 8.44, SD=5.20; 13 months 7.00, SD=4.99). At 6 months, the satisfied group had lower anxiety (7.83, SD=4.15) compared to the dissatisfied group (8.88, SD=6.66).

No statistically significant differences were found between the two groups for anxiety at baseline  $t(64) = 0.35$ ,  $p = 0.73$ ; 6 months  $t(7.93) = -0.43$ ,  $p = 0.68$ ; or 13 months  $t(47) = 0.57$ ,  $p = 0.57$  (two tailed).

### **Depression**

In relation to depression, the dissatisfied group had lower depression scores at baseline and 6 months (baseline 3.20, SD=2.86; 6 months 2.00, SD=2.33) compared to the satisfied group (baseline 5.38, SD=4.03; 6 months 2.65, SD=2.61). In contrast, at 13 months, the satisfied group had lower anxiety (2.88, SD=3.56) compared to the dissatisfied group (3.29, SD=4.07).

No statistically significant differences were found between the two groups for depression at baseline  $t(64) = 1.18$ ,  $p = 0.24$ ; 6 months  $t(54) = 0.66$ ,  $p = 0.52$ ; or 13 months  $t(47) = -0.27$ ,  $p = 0.79$  (two tailed).

### **Wellbeing**

In relation to wellbeing, the dissatisfied group had higher wellbeing at baseline (48.40, SD=7.09) compared to the satisfied group (45.95, SD=10.06). In contrast, the satisfied group had higher wellbeing at 6 and 13 months (6 months 52.54, SD=8.80; 13 months 53.50, SD=9.08) compared to the dissatisfied group (6 months 50.50, SD=9.18; 13 months 51.14, SD=16.06).

No statistically significant differences were found between the two groups for wellbeing at baseline  $t(64) = -0.53$ ,  $p = 0.60$ ; 6 months  $t(54) = 0.60$ ,  $p = 0.55$ ; or 13 months  $t(6.65) = 0.38$ ,  $p = 0.72$  (two tailed).



**Table 5.12: Overall satisfaction and anxiety, depression and wellbeing over time**

	Very satisfied & satisfied			Dissatisfied & very dissatisfied		
Mean (SD)	B (n=61)	6 (n=48)	13 (n=42)	B (n=5)	6 (n=8)	13 (n=7)
Anxiety	8.44 (5.20)	7.83 (4.15)	7.00 (4.99)	7.60 (4.93)	8.88 (6.66)	5.86 (4.60)
Depression	5.38 (4.03)	2.65 (2.61)	2.88 (3.56)	3.20 (2.86)	2.00 (2.33)	3.29 (4.07)
Wellbeing	45.95 (10.06)	52.54 (8.80)	53.50 (9.08)	48.40 (7.09)	50.50 (9.18)	51.14 (16.06)

#### **5.3.3.6 Receipt of follow up care and levels of anxiety, depression and wellbeing across time**

A series of independent-samples *t*-tests were conducted to assess the impact of receipt of follow up (received support 8.16% n=4, did not receive support 91.84% n=45) on participants anxiety, depression and wellbeing scores across the three time points (baseline, 6 months, 13 months). The means and standard deviations are presented in Table 5.13.

**Table 5.13: Anxiety, depression and wellbeing scores and receipt of follow up across time**

	Received follow up (n=4)			No follow up (n=45)		
Mean (SD)	B	6	13	B	6	13
Anxiety	8.00 (8.17)	11.75 (4.99)	12.50 (4.51)	8.00 (4.76)	7.71 (4.08)	6.33 (4.66)
Depression	5.00 (6.00)	3.50 (3.51)	5.50 (4.80)	4.84 (3.95)	2.51 (2.50)	2.71 (3.45)
Wellbeing	48.75 (18.14)	51.50 (14.98)	49.25 (17.27)	46.31 (9.09)	52.16 (8.45)	53.51 (9.53)

#### **Anxiety**

For anxiety, the group that did not receive follow up had lower anxiety over time (baseline 8.00, SD=4.76; 6 months 7.71, SD=4.08; 13 months 6.33, SD=4.66) compared to the group that did receive follow up (baseline 8.00, SD=8.17; 6 months 11.75, SD=4.99; 13 months 12.50, SD=4.51).

No statistically significant differences were found between the two groups for anxiety at baseline  $t(3.18) = 0.01$ ,  $p = 0.99$ ; or at 6 months  $t(47) = -1.87$ ,  $p = 0.07$ ; however at 13 months there was a statistically significant difference between the groups, with lower anxiety amongst the group who did not receive follow up  $t(47) = -2.54$ ,  $p = 0.01$  (two tailed). The magnitude of the differences in means (mean difference = -6.17, 95% CI: -11.04 to -1.29) was moderate (eta squared = 0.12). This may suggest that only those women with heightened anxiety are being identified and provided with follow up.

### **Depression**

For depression, the group that did not receive follow up had lower depression at baseline, 6 and 13 months (baseline 4.84, SD=3.95; 6 months 2.51, SD=2.50; 13 months 2.71, SD=3.45) compared to the group that did receive follow up (baseline 5.00, SD=6.00; 6 months 3.50, SD=3.51; 13 months 5.50, SD=4.80).

No statistically significant differences were found between the two groups for depression at baseline  $t(47) = -0.07$ ,  $p = 0.94$ ; 6 months  $t(47) = -0.74$ ,  $p = 0.47$ ; or 13 months  $t(47) = -1.51$ ,  $p = 0.14$  (two tailed).

### **Wellbeing**

For wellbeing, the group that received follow up had higher wellbeing at baseline (baseline 48.75, SD=18.14) compared to the group that did not receive follow up (baseline 46.31, SD=9.09). In contrast, at 6 and 13 months the group that did not receive follow up had higher wellbeing (6 months 52.16, SD=8.45; 13 months 53.51, SD=9.53) compared to the group that did receive follow up (6 months 51.50, SD=14.98; 13 months 49.25, SD=17.27).

No statistically significant differences were found between the two groups for wellbeing at baseline  $t(3.14) = -0.27$ ,  $p = 0.82$ ; 6 months  $t(47) = 0.14$ ,  $p = 0.89$ ; or 13 months  $t(47) = 0.80$ ,  $p = 0.43$  (two tailed).

#### **5.3.3.7 Summary of hypothesis 3**

Generally, satisfaction levels were high. In relation to how satisfied participants felt about the care they received from hospital staff at the time of the miscarriage, there were no statistically significant differences found between those who were satisfied compared to those who reported being dissatisfied for anxiety and wellbeing at baseline or 6 months, but at 13 months there were significantly lower anxiety and higher wellbeing scores in the dissatisfied group. In relation to depression, there were no statistically significant differences found between the two satisfaction groups at baseline, 6 and 13 months.

In terms of satisfaction with the emotional support provided, the amount of information received, the way the news of miscarriage was given and overall satisfaction with care received from healthcare staff; there were no statistically significant differences between those who were satisfied compared to those who were not for anxiety, depression and wellbeing at baseline, 6 months or 13 months.

In terms of follow up care provision, participants who received follow up had higher levels of anxiety although there were no statistically significant differences at baseline and 6 months. Despite the 30.30% (n=20) of participants meeting caseness for anxiety at baseline and receiving a GP referral letter, a low proportion of women received follow up. There were no statistically significant differences found between those who received follow up compared to those that did not for depression or wellbeing at baseline, 6 or 13 months.

Hypothesis 3 is partially supported as the group of participants who did not receive follow up had lower anxiety at 13 months, compared to those who did. Those who received follow up showed an increase in anxiety overtime, perhaps suggesting that either women or healthcare professionals are identifying those women in need of follow up. In relation to how satisfied participants felt about the care they received from hospital staff at the time of the miscarriage, the dissatisfied group had significantly lower anxiety and higher wellbeing scores at 13 months. This may reflect dissatisfaction with a lack of follow up amongst women who are not deemed to be in need of follow up.

#### **5.3.4 Hypothesis 4: Time (baseline, 6 months and 13 months) will have an effect on levels of anxiety, depression and wellbeing**

##### **5.3.4.1 Anxiety, depression and wellbeing over time**

The means and standard deviations for anxiety, depression and wellbeing amongst the 49 participants who completed all three assessments are presented in Table 5.14.

**Table 5.14: Mean anxiety, depression and wellbeing scores across time**

	<b>Anxiety Mean (SD)</b>	<b>Depression Mean (SD)</b>	<b>Wellbeing Mean (SD)</b>
<b>Baseline</b>	8.38 (5.14)	5.21 (3.98)	46.14 (9.85)
<b>6 months</b>	7.98 (4.53)	2.55 (2.57)	52.25 (8.80)
<b>13 months</b>	6.84 (4.91)	2.94 (3.60)	53.16 (10.16)

#### **5.3.4.2 Anxiety over time**

Mean anxiety scores decreased over time from 8.38 (SD=5.15) at baseline to 7.98 (SD=4.53) at 6 months, and 6.84 (SD=4.91) at 13 months. Results from a one-way repeated measures ANOVA indicated no significant effect of time on anxiety, Wilks' Lambda=0.88,  $F(2,47)=3.10$ ,  $p=0.05$ ; multivariate partial eta squared=0.12.

#### **Anxiety status over time**

In terms of anxiety status, 69.70% (n=46) of participants were anxiety non-caseness and 30.30% (n=20) were caseness at baseline; 75% (n=42) were anxiety non-caseness and 25% (n=14) were caseness at 6 months; and 73.47% (n=36) were anxiety non-caseness with 28.53% of participants (n=13) caseness at 13 months. This also indicates a small improvement in anxiety over time.

#### **5.3.4.3 Depression over time**

The mean depression score at baseline was 5.21 (SD=3.98), which decreased to 2.55 (SD=2.57) at 6 months but then increased slightly to 2.94 (SD=3.60) at 13 months. Results from a one-way repeated measures ANOVA indicate a significant main effect of time on depression (Wilks' Lambda=0.70,  $F(2,47)=10.17$ ,  $p<0.01$ ; multivariate partial eta squared=0.30). Further analysis using Bonferroni pairwise comparisons indicated that depression was significantly lower at 6 months ( $p<0.01$ ) and 13 months ( $p<0.01$ ) compared to baseline. Depression scores between 6 and 13 months were not significantly different ( $p=1.00$ ).

#### **Depression status over time**

In relation to depression status, 86.4% (n=57) participants were depression non-caseness and 13.6% (n=9) were non-caseness at baseline; there was no depression caseness at 6 months; whilst at 13 months, 2.04% (n=1) of participants were classified as depression caseness and 97.96 (n=48) as non-caseness. This indicates an improvement in depression over time.

#### **5.3.4.4 Wellbeing over time**

Mean wellbeing scores increased over time from 46.14 (SD=9.85) at baseline, increasing to 52.25 (8.80) at 6 months and again at 13 months 53.16 (10.16).

In relation to wellbeing, results demonstrate a significant main effect for time, Wilks' Lambda=0.56,  $F(2,47)=18.24$ ,  $p<0.01$ ; multivariate partial eta squared=0.44. Further analysis using Bonferroni pairwise comparisons indicated that wellbeing at 6 months and 13 months

was significantly higher than at baseline ( $p<0.01$ ). Wellbeing scores between 6 and 13 months, were not significantly different ( $p=0.84$ ), indicating an improvement in wellbeing over time.

#### **5.3.4.5 Summary of hypothesis 4**

The results indicate partial support for the 4<sup>th</sup> hypothesis, there was a significant decrease in depression and a significant increase in wellbeing over time; however anxiety was not significantly different over the three time periods. These results indicate that the level of depression and wellbeing begin to improve 6 months after miscarriage, however anxiety remains elevated over time.

### **5.3.5 Hypothesis 5: Levels of anxiety, depression and wellbeing will be related to health locus of control**

#### **5.3.5.1 Health Locus of Control across time**

The means and standard deviations for the health locus of control scores are presented in Table 5.15.

**Table 5.15: Mean health locus of control scores**

	<b>Internal Mean (SD)</b>	<b>Chance Mean (SD)</b>	<b>Powerful others Mean (SD)</b>
<b>Baseline</b>	24.62 (4.73)	18.82 (5.71)	13.72 (5.16)
<b>6 months</b>	24.23 (4.15)	19.38 (5.37)	13.61 (5.20)
<b>13 months</b>	23.73 (4.62)	19.55 (5.31)	14.53 (5.31)

The higher mean scores for internal health locus of control indicate that women were most likely to believe their health was under their own control, as opposed to chance or powerful others at all three time points.

#### **5.3.5.2 Relationship between anxiety, depression and wellbeing scores with health locus of control**

Pearson's product-moment correlation coefficient was used to examine the strength and direction of the relationship between anxiety, depression and wellbeing scores with health locus of control, as displayed in Table 5.16.

**Table 5.16: Anxiety, depression, wellbeing with health locus of control**

<b>Baseline</b>	<b>Anxiety <i>r</i> (p)</b>	<b>Depression <i>r</i> (p)</b>	<b>Wellbeing <i>r</i> (p)</b>
<b>Internal (n=65)</b>	<b>-0.35 (&lt;0.01**)</b>	-0.15 (0.22)	<b>0.32 (0.01)*</b>
<b>Chance (n=65)</b>	0.03 (0.80)	0.00 (0.98)	-0.02 (0.90)
<b>Powerful others (n=65)</b>	0.03 (0.80)	0.11 (0.38)	-0.10 (0.42)

**6 months**

<b>Internal (n=56)</b>	-0.20 (0.14)	-0.20 (0.14)	<b>0.30 (0.02)*</b>
<b>Chance (n=56)</b>	<b>0.31 (0.02) *</b>	0.08 (0.54)	0.02 (0.88)
<b>Powerful others (n=56)</b>	0.18 (0.18)	0.13 (0.35)	0.03 (0.85)

**13 months**

<b>Internal (n=49)</b>	-0.05 (0.72)	-0.12 (0.41)	0.14 (0.34)
<b>Chance (n=49)</b>	0.09 (0.52)	-0.01 (0.95)	0.13 (0.38)
<b>Powerful others (n=49)</b>	0.14 (0.33)	0.10 (0.51)	0.02 (0.89)

\*\* $p < 0.01$  \* $p < 0.05$

**Internal Health Locus of Control**

Results indicated a significant, medium to large, negative correlation between internal health locus of control and anxiety at baseline ( $r = -0.35$ ,  $n = 65$ ,  $p < 0.01$ ) but this was not significant at 6 months ( $r = -0.20$ ,  $n = 56$ ,  $p = 0.14$ ) or 13 months ( $r = -0.05$ ,  $n = 49$ ,  $p = 0.72$ ).

There was no significant correlation between depression and internal health locus of control at baseline ( $r = -0.15$ ,  $n = 65$ ,  $p = 0.22$ ), 6 months ( $r = -0.20$ ,  $n = 56$ ,  $p = 0.14$ ) or 13 months ( $r = -0.12$ ,  $n = 49$ ,  $p = 0.41$ ).

A significant, medium to large, positive correlation was found with wellbeing at baseline ( $r = 0.32$ ,  $n = 65$ ,  $p < 0.05$ ) and 6 months ( $r = 0.30$ ,  $n = 56$ ,  $p < 0.05$ ) but was not significant at 13 months ( $r = 0.14$ ,  $n = 49$ ,  $p = 0.34$ ).

**Chance Locus of Control**

There was a significant, medium to large, positive correlation between anxiety and chance health locus of control at 6 months ( $r = 0.31$ ,  $n = 56$ ,  $p < 0.05$ ) but this was not significant at baseline ( $r = 0.03$ ,  $n = 65$ ,  $p = 0.80$ ) or 13 months ( $r = 0.09$ ,  $n = 49$ ,  $p = 0.52$ ).

There was no significant correlation between depression and chance health locus of control at baseline ( $r=0.00$ ,  $n=65$ ,  $p=0.98$ ), 6 months ( $r=0.08$ ,  $n=56$ ,  $p=0.54$ ) or 13 months ( $r=-0.01$ ,  $n=49$ ,  $p=0.95$ ).

There was no significant correlation between wellbeing and chance health locus of control at baseline ( $r=-0.02$ ,  $n=65$ ,  $p=0.90$ ), 6 months ( $r=0.02$ ,  $n=56$ ,  $p=0.88$ ) or 13 months ( $r=0.13$ ,  $n=49$ ,  $p=0.38$ ).

### **Powerful Others**

There was no significant correlation between anxiety and powerful others health locus of control at baseline, 6 months or 13 months (baseline  $r=0.03$ ,  $n=65$ ,  $p=0.80$ ; 6 months  $r=0.18$ ,  $n=56$ ,  $p=0.18$ ; 13 months  $r=0.14$ ,  $n=49$ ,  $p=0.33$ ).

There was no significant correlation between depression and powerful others health locus of control at baseline ( $r=0.11$ ,  $n=65$ ,  $p=0.38$ ), 6 months ( $r=0.13$ ,  $n=56$ ,  $p=0.35$ ) or 13 months ( $r=0.10$ ,  $n=49$ ,  $p=0.91$ ).

There was no significant correlation found between wellbeing and powerful others health locus of control at baseline ( $r=-0.10$ ,  $n=65$ ,  $p=0.42$ ), 6 months ( $r=0.03$ ,  $n=56$ ,  $p=0.85$ ) or 13 months ( $r=0.02$ ,  $n=49$ ,  $p=0.89$ ).

#### **5.3.5.3 Summary of hypothesis 5**

Collectively, these results indicate partial support for hypothesis 5. There was a significant correlation found between higher internal health locus of control scores, and lower levels of anxiety and increased wellbeing at baseline and 6 months. This suggests that women who believe their health is within their own control, experience less anxiety and higher wellbeing over the first 6 months post miscarriage. Health locus of control was not related to depression at baseline, 6 months or 13 months. At 6 months, there was a significant correlation found between lower anxiety scores and lower chance health locus of control scores, suggesting that lower anxiety is related to women who are less likely to explain their health as down to chance. At 13 months, there was no significant relationship between anxiety, depression or wellbeing with any of the health locus of control subscales.

#### **5.3.6 Hypothesis 6: Women who have higher levels of perceived social support will have lower levels of anxiety and depression, and increased levels of wellbeing**

In terms of sharing the experience of miscarriage, 98.48% ( $n=65$ ) of women had informed their partner, 92.42% ( $n=61$ ) had informed their immediate family, and 89.39% ( $n=59$ ) had informed

their close friends. Of the women in employment (81.82%, n=54), 51.85% (n=28) had informed their work colleagues.

#### **5.3.6.1 Perceived social support**

As shown in Table 5.17, the mean scores were 25.09 (SD=5.01) for significant other, 23.21 (SD=5.82) for family and 22.98 (SD=5.56) for friends at baseline; 24.45 (SD=6.29) for significant other, 22.63 (SD=6.42) for family and 22.55 (SD=6.58) for friends at 6 months; 25.06 (SD=5.33) for significant other, 24.39 (SD=4.24) for family, and 23.61 (SD=4.45) for friends at 13 months. The maximum score was for significant other at all three time points. These findings indicate that the women received high/moderate levels of support from all three sources across time.

**Table 5.17: Mean social support scores over time**

	<b>Significant other Mean (SD)</b>	<b>Family Mean (SD)</b>	<b>Friends Mean (SD)</b>
<b>Baseline</b>	25.09 (5.01)	23.21 (5.82)	22.98 (5.56)
<b>6 months</b>	24.45 (6.29)	22.63 (6.42)	22.55 (6.58)
<b>13 months</b>	25.06 (5.33)	24.39 (4.24)	23.61 (4.45)

The higher mean scores for significant other indicate that women were most likely to receive social support from their partner, compared to family and friends at all three time points.

#### **5.3.6.2 Relationship between anxiety, depression and wellbeing with perceived social support**

Spearman rho correlation coefficients were used to examine the strength and direction of the relationship between anxiety, depression and wellbeing scores with perceived social support, as displayed in Table 5.18.



**Table 5.18: Anxiety, depression and wellbeing with perceived social support**

**Baseline**

	Anxiety n=66		Depression n=66		Wellbeing n=66	
	$r_s$	$p$	$r_s$	$p$	$r_s$	$p$
<b>Significant Other</b>	-0.09	0.24	-0.11	0.20	<b>0.24</b>	<b>0.03*</b>
<b>Family</b>	-0.14	0.13	-0.08	0.27	<b>0.21</b>	<b>&lt;0.05*</b>
<b>Friends</b>	-0.19	0.07	-0.06	0.32	0.19	0.06

**6 months**

	Anxiety n=56		Depression n=56		Wellbeing n=56	
	$r_s$	$p$	$r_s$	$p$	$r_s$	$P$
<b>Significant Other</b>	<b>-0.29</b>	<b>0.02*</b>	<b>-0.39</b>	<b>&lt;0.01**</b>	<b>0.39</b>	<b>&lt;0.01**</b>
<b>Family</b>	-0.15	0.13	<b>-0.36</b>	<b>&lt;0.01**</b>	<b>0.33</b>	<b>&lt;0.01**</b>
<b>Friends</b>	-0.12	0.19	<b>-0.33</b>	<b>&lt;0.01**</b>	<b>0.35</b>	<b>&lt;0.01**</b>

**13 months**

	Anxiety n=49		Depression n=49		Wellbeing n=49	
	$r_s$	$p$	$r_s$	$p$	$r_s$	$P$
<b>Significant Other</b>	<b>-0.39</b>	<b>&lt;0.01**</b>	<b>-0.49</b>	<b>&lt;0.01**</b>	<b>0.46</b>	<b>&lt;0.01**</b>
<b>Family</b>	<b>-0.26</b>	<b>0.04*</b>	<b>-0.40</b>	<b>&lt;0.01**</b>	<b>0.49</b>	<b>&lt;0.01**</b>
<b>Friends</b>	-0.13	0.20	<b>-0.28</b>	<b>0.03*</b>	<b>0.33</b>	<b>0.01*</b>

\*\* $p < 0.01$  \* $p < 0.05$

**5.3.6.3 Perceived social support**

**Anxiety**

Results indicated a significant, small to medium, negative correlation between anxiety and significant other at 6 months ( $r_s = -0.29$ ,  $n = 56$ ,  $p < 0.05$ ) and a significant, medium to large, negative correlation between anxiety and significant other at 13 months ( $r_s = -0.39$ ,  $n = 49$ ,  $p < 0.01$ ), but this was not significant at baseline ( $r_s = -0.09$ ,  $n = 66$ ,  $p = 0.24$ ).

There was no significant correlation between anxiety and family at baseline ( $r_s = -0.14$ ,  $n = 66$ ,  $p = 0.13$ ) or 6 months ( $r_s = -0.15$ ,  $n = 56$ ,  $p = 0.13$ ), however there was a significant, small to

medium, negative correlation between anxiety and family at 13 months ( $r_s=-0.26$ ,  $n=49$ ,  $p<0.05$ ).

There was no significant correlation between anxiety and friends at baseline ( $r_s=-0.19$ ,  $n=66$ ,  $p=0.07$ ), 6 months ( $r_s=-0.12$ ,  $n=56$ ,  $p=0.19$ ) or 13 months ( $r_s=-0.13$ ,  $n=49$ ,  $p=0.20$ ).

### **Depression**

There was a significant, medium to large, negative correlation between depression and significant other at 6 months ( $r_s=-0.39$ ,  $n=56$ ,  $p<0.01$ ) and 13 months ( $r_s=-0.49$ ,  $n=49$ ,  $p<0.01$ ), but this was not significant at baseline ( $r_s=-0.11$ ,  $n=66$ ,  $p=0.20$ ).

There was a significant, medium to large, negative correlation between depression and family at 6 ( $r_s=-0.36$ ,  $n=56$ ,  $p<0.01$ ) and 13 months ( $r_s=-0.40$ ,  $n=49$ ,  $p<0.01$ ), but this was not significant at baseline ( $r_s=-0.08$ ,  $n=66$ ,  $p=0.27$ ).

There was a significant, medium to large, negative correlation between depression and friends at 6 months ( $r_s=-0.33$ ,  $n=56$ ,  $p<0.01$ ) and significant, small to medium, negative correlation between depression and friends at 13 months ( $r_s=-0.28$ ,  $n=49$ ,  $p<0.05$ ), but this was not significant at baseline ( $r_s=-0.06$ ,  $n=66$ ,  $p=0.32$ ).

### **Wellbeing**

There was a significant, small to medium, positive correlation between wellbeing and significant other at baseline ( $r_s=0.24$ ,  $n=66$ ,  $p<0.05$ ). There was a significant, medium to large, positive correlation between wellbeing and significant other at 6 months ( $r_s=0.39$ ,  $n=56$ ,  $p<0.01$ ) and 13 months ( $r_s=0.46$ ,  $n=49$ ,  $p<0.01$ ).

There was a significant, small to medium, positive correlation between wellbeing and family at baseline ( $r_s=0.21$ ,  $n=66$ ,  $p<0.05$ ), in addition to a significant, medium to large, positive correlation between wellbeing and family at 6 months ( $r_s=0.33$ ,  $n=56$ ,  $p<0.01$ ) and 13 months ( $r_s=0.49$ ,  $n=49$ ,  $p<0.01$ ).

There was a significant, medium to large, positive correlation between wellbeing and friends at 6 ( $r_s=0.35$ ,  $n=56$ ,  $p<0.01$ ) and 13 months ( $r_s=0.33$ ,  $n=49$ ,  $p<0.05$ ), but this was not significant at baseline ( $r_s=0.19$ ,  $n=66$ ,  $p=0.06$ ).

#### **5.3.6.4 Summary of hypothesis 6**

Collectively, these results indicate partial support for the 6<sup>th</sup> hypothesis. At baseline, perceived social support was not related to anxiety or depression; there was however higher levels of wellbeing associated with higher levels of significant other and family scores. Higher significant

other scores were associated with lower levels of anxiety and depression and higher levels of wellbeing at 6 and 13 months. There was a significant relationship found between higher family scores and lower levels of depression and higher levels of wellbeing at 6 months and 13 months, in addition to lower levels of anxiety at 13 months. There was a significant relationship found between friends and lower levels of depression and higher levels of wellbeing at 6 and 13 months. These results suggest that the sources of support that women draw upon and the benefits of such support increase over time. Friends only become influential at 6 months.

### **5.3.7. Hypothesis 7: Levels of anxiety, depression and wellbeing will be related to coping style**

#### **5.3.7.1 Coping styles**

As shown in Table 5.19, the mean scores were 23.03 (SD=4.95) for emotion focused, 19.60 (SD=5.42) for task focused, 18.35 (SD=4.54) for avoidant and 4.48 (SD=2.03) for self-blame at baseline; 22.11 (SD=5.05) for emotion focused, 19.18 (SD=5.16) for task focused, 17.20 (SD=3.59) for avoidant and 3.84 (SD=1.98) for self-blame at 6months; 21.43 (SD=4.73) for emotion focused, 19.18 (SD=5.74) for task focused, 15.47 (SD=3.29) for avoidant and 3.47 (SD=1.56) for self-blame at 13 months.

**Table 5.19: Mean coping style scores over time**

	<b>Emotion focusedMean (SD)</b>	<b>Task focused Mean (SD)</b>	<b>Avoidant Mean (SD)</b>	<b>Self-blame Mean (SD)</b>
<b>Baseline</b>	23.03 (4.95)	19.60 (5.42)	18.35 (4.54)	4.48 (2.03)
<b>6 months</b>	22.11 (5.05)	19.18 (5.16)	17.20 (3.59)	3.84 (1.98)
<b>13 months</b>	21.43 (4.73)	19.18 (5.74)	15.47 (3.29)	3.47 (1.56)

The higher mean scores for emotion focused coping indicate that women were most likely to use an emotion focused coping style; as opposed to task and avoidant coping styles (maximum score for each scale was at baseline for all of the coping style categories). In terms of self-blame, scores indicate that women are more likely to use a self-blame coping style at baseline (maximum score on this scale is 8).

#### ***5.3.7.2 Relationship between coping style and anxiety, depression and wellbeing over time***

Pearsons's product-moment correlation coefficients were used to examine the strength and direction of the relationship between anxiety, depression and wellbeing scores with coping style, except for self-blame where Spearman rho correlation coefficients were used, as displayed in Table 5.20.

Table 5.20: Anxiety, depression and wellbeing with coping style

## Baseline

	Anxiety n=65		Depression n=65		Wellbeing n=65	
	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>
<b>Avoidant</b>	0.15	0.24	0.15	0.22	-0.10	0.44
<b>Task focused</b>	<b>-0.26</b>	<b>0.04*</b>	-0.24	0.06	<b>0.29</b>	<b>0.02*</b>
<b>Emotion focused</b>	-0.21	0.10	-0.20	0.12	<b>0.36</b>	<b>&lt;0.01**</b>
<b>Self-blame †</b>	<b>0.60</b>	<b>&lt;0.01**</b>	<b>0.61</b>	<b>&lt;0.01**</b>	<b>-0.51</b>	<b>&lt;0.01**</b>

## 6 months

	Anxiety n=56		Depression n=56		Wellbeing n=56	
	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>
<b>Avoidant</b>	<b>0.36</b>	<b>&lt;0.01**</b>	0.25	0.07	<b>-0.31</b>	<b>0.02*</b>
<b>Task focused</b>	-0.00	0.98	-0.06	0.68	<b>0.29</b>	<b>0.03*</b>
<b>Emotion focused</b>	-0.14	0.30	<b>-0.35</b>	<b>&lt;0.01**</b>	<b>0.47</b>	<b>&lt;0.01**</b>
<b>Self-blame †</b>	<b>0.49</b>	<b>&lt;0.01**</b>	<b>0.42</b>	<b>&lt;0.01**</b>	<b>-0.56</b>	<b>&lt;0.01**</b>

## 13 months

	Anxiety n=49		Depression n=49		Wellbeing n=49	
	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>
<b>Avoidant</b>	<b>0.40</b>	<b>&lt;0.01**</b>	<b>0.32</b>	<b>0.02*</b>	<b>-0.30</b>	<b>0.04*</b>
<b>Task focused</b>	-0.01	0.95	-0.23	0.12	<b>0.31</b>	<b>0.03*</b>
<b>Emotion focused</b>	0.02	0.90	-0.26	0.07	<b>0.36</b>	<b>0.01**</b>
<b>Self-blame †</b>	<b>0.49</b>	<b>&lt;0.01**</b>	<b>0.41</b>	<b>&lt;0.01**</b>	<b>-0.43</b>	<b>&lt;0.01**</b>

† Spearman's rho correlation coefficient

\*\* $p < 0.01$  \* $p < 0.05$

### **5.3.7.3 Coping style over time**

#### **Anxiety**

There was no significant correlation between emotion focused coping and anxiety at baseline ( $r=-0.21$ ,  $n=65$ ,  $p=0.10$ ), 6 months ( $r=-0.14$ ,  $n=56$ ,  $p=0.30$ ) or 13 months ( $r=0.02$ ,  $n=49$ ,  $p=0.90$ ).

There was a significant, small to medium, negative correlation between task focused coping and anxiety at baseline ( $r=-0.26$ ,  $n=65$ ,  $p<0.05$ ), but this was not significant at 6 months ( $r=-0.00$ ,  $n=56$ ,  $p=0.98$ ) or 13 months ( $r=-0.01$ ,  $n=49$ ,  $p=0.95$ ).

There was no correlation between avoidant coping and anxiety at baseline ( $r=0.15$ ,  $n=65$ ,  $p=0.24$ ), but there was a significant, medium to large, positive correlation at 6 months ( $r=0.36$ ,  $n=56$ ,  $p<0.01$ ) and 13 months ( $r=0.40$ ,  $n=49$ ,  $p<0.01$ ).

There was a significant, large to very large, positive correlation between self-blame and anxiety at baseline ( $r_s=0.60$ ,  $n=65$ ,  $p<0.01$ ), and a significant, medium to large, positive correlation between self-blame and anxiety at 6 months ( $r_s=0.49$ ,  $n=56$ ,  $p<0.01$ ) and 13 months ( $r_s=0.49$ ,  $n=49$ ,  $p<0.01$ ).

#### **Depression**

There was no significant correlation between emotion focused coping and depression at baseline ( $r=-0.20$ ,  $n=65$ ,  $p=0.12$ ), or 13 months ( $r=-0.26$ ,  $n=49$ ,  $p=0.07$ ), however there was a significant, medium to large, negative correlation at 6 months ( $r=-0.35$ ,  $n=56$ ,  $p<0.01$ ).

There was no significant correlation between task focused coping and depression at baseline ( $r=-0.24$ ,  $n=65$ ,  $p=0.06$ ), 6 months ( $r=-0.06$ ,  $n=56$ ,  $p=0.68$ ), or 13 months ( $r=-0.23$ ,  $n=49$ ,  $p=0.12$ ).

There was no significant correlation between avoidant coping and depression at baseline ( $r=0.15$ ,  $n=65$ ,  $p=0.22$ ), or 6 months ( $r=0.25$ ,  $n=56$ ,  $p=0.07$ ). There was a significant, medium to large, positive correlation between avoidant coping and depression at 13 months ( $r=0.32$ ,  $n=49$ ,  $p<0.05$ ).

There was a significant, large to very large, positive correlation between self-blame and depression at baseline ( $r_s=0.61$ ,  $n=65$ ,  $p<0.01$ ). There was a significant, medium to large, positive correlation between self-blame and depression at 6 months ( $r_s=0.42$ ,  $n=56$ ,  $p<0.01$ ) and 13 months ( $r_s=0.41$ ,  $n=49$ ,  $p<0.01$ ).

#### **Wellbeing**

A significant, medium to large, positive correlation was found between emotion focused coping and wellbeing at baseline ( $r=0.36$ ,  $n=65$ ,  $p<0.01$ ), 6 months ( $r=0.47$ ,  $n=56$ ,  $p<0.01$ ) and 13 months ( $r=0.36$ ,  $n=49$ ,  $p=0.01$ ).

A significant, small to medium, positive correlation was found between task focused coping and wellbeing at baseline ( $r=0.29$ ,  $n=65$ ,  $p<0.05$ ), and at 6 months ( $r=0.29$ ,  $n=56$ ,  $p<0.05$ ). There was a significant, medium to large, positive correlation found between task focused coping and wellbeing at 13 months ( $r=0.31$ ,  $n=49$ ,  $p<0.05$ ).

There was no correlation found between avoidant coping and wellbeing at baseline ( $r=-0.10$ ,  $n=65$ ,  $p=0.44$ ), however there was a significant, medium to large, negative correlation between avoidant coping and wellbeing at 6 months ( $r=-0.31$ ,  $n=56$ ,  $p<0.05$ ) and 13 months ( $r=-0.30$ ,  $n=49$ ,  $p<0.05$ ).

There was a significant, large to very large, negative correlation between self-blame and wellbeing at baseline ( $r_s=-0.51$ ,  $n=65$ ,  $p<0.01$ ), and at 6 months ( $r_s=-0.56$ ,  $n=56$ ,  $p<0.01$ ). There was a significant, medium to large, negative correlation between self-blame and wellbeing at 13 months ( $r_s=-0.43$ ,  $n=49$ ,  $p<0.01$ ).

#### **5.3.7.4 Overall coping across time**

Women were asked how they felt they were coping overall with their miscarriage, with responses including *coping well* (56.06%,  $n=37$  at baseline, 78.57%,  $n=44$  at 6 months, 83.67%,  $n=41$  at 13 months), *coping just* (40.91%,  $n=27$  at baseline, 19.64%,  $n=11$  at 6 months, 14.29%,  $n=7$  at 13 months) and *not coping at all well* (3.03%,  $n=2$  at baseline, 0%  $n=0$  at 6 months, 2.04%,  $n=1$  at 13 months). Women in the *not coping at all well* category were added to the coping just category resulting in a new *coping just/not coping at all* category (43.94%,  $n=29$  at baseline, 19.64%,  $n=11$  at 6 months, 16.33%,  $n=8$  at 13 months).

Table 5.21 demonstrates the mean scores for anxiety, depression and wellbeing in the two coping groups.

**Table 5.21: Overall coping and anxiety, depression and wellbeing across time**

	<b>n (%)</b>	<b>Anxiety Mean (SD)</b>	<b>Depression Mean (SD)</b>	<b>Wellbeing Mean (SD)</b>
<b>Baseline</b>				
<b>Coping well</b>	37 (56.06)	6.00 (4.71)	2.54 (2.31)	52.27 (7.19)
<b>Just or not coping</b>	29 (43.94)	11.41 (3.99)	8.62 (2.92)	38.31 (6.73)
<b>6 Months</b>				
<b>Coping well</b>	44 (78.57)	7.27 (4.37)	1.91 (2.14)	54.23 (7.98)
<b>Just or not coping</b>	11 (19.64)	11.00 (4.27)	5.18 (2.64)	44.18 (7.96)
<b>13 Months</b>				
<b>Coping well</b>	41 (83.67)	6.02 (4.80)	1.85 (2.31)	55.78 (7.95)
<b>Just or not coping</b>	8 (16.33)	11.00 (3.07)	8.50 (4.00)	39.75 (10.08)

There were lower anxiety scores for the *coping well* category (mean=6.00, SD=4.71 at baseline, mean=7.27, SD=4.37 at 6 months, mean=6.02, SD=4.80 at 13 months) compared to *coping just/not at all well* (mean=11.41, SD=3.99 at baseline, mean=11.00, SD=4.27 at 6 months, mean=11.00, SD=3.07 at 13 months) at baseline, 6 and 13 months. In addition, there was a lower mean depression score for women who reported as *coping well* (mean=2.54, SD=2.31 at baseline, mean=1.91, SD=2.14 at 6 months, mean=1.85, SD=2.31 at 13 months) when compared to the *coping just/not at all well* category (mean=8.62, SD=2.92 at baseline, mean=5.18, SD=2.64 at 6 months, mean=8.50, SD=4.00 at 13 months) at baseline, 6 and 13 months. Wellbeing scores were also higher for the *coping well* category (mean=52.27, SD=7.19 at baseline, mean=54.23, SD=7.98 at 6 months, mean=55.78, SD=7.95 at 13 months) compared to the *coping just/not at all well* category (mean=38.31, SD=6.73 at baseline, mean=44.18, SD=7.96 at 6 months, mean=39.75, SD=10.08 at 13 months) at baseline, 6 and 13 months.



#### **5.3.7.5 Overall coping status**

A series of independent-samples t-tests were conducted to compare the anxiety, depression and wellbeing scores for women who felt they were coping well to women who felt they were just or not coping at all well at baseline, 6 and 13 months.

##### **Baseline**

There was no statistically significant difference between the groups at baseline for anxiety  $t(47)=-1.31$ ,  $p=0.20$ , (two tailed); however there were significantly lower depression and higher wellbeing scores for those in the coping well category compared to the just or not coping at all well category (depression  $t(47)=-2.75$ ,  $p<0.01$ , (two tailed); wellbeing  $t(64)=3.61$ ,  $p<0.01$ , (two tailed)), at baseline.

##### **6 Months**

There were significantly lower anxiety, depression and higher wellbeing scores for those in the coping well category compared to the just or not coping at all well category (anxiety  $t(47)=-3.14$ ,  $p<0.01$ , (two tailed); depression  $t(47)=-4.02$ ,  $p<0.01$ , (two tailed); wellbeing  $t(64)=4.58$ ,  $p<0.01$ , (two tailed)), at 6 months.

##### **13 Months**

There were significantly lower anxiety, depression and higher wellbeing scores for those in the coping well category compared to the just or not coping at all well category (anxiety  $t(47)=-2.81$ ,  $p<0.01$ , (two tailed); depression  $t(47)=-6.54$ ,  $p<0.01$ , (two tailed); wellbeing  $t(64)=5.00$ ,  $p<0.01$ , (two tailed)), at 13 months.

#### **5.3.7.6 Summary of hypothesis 7**

Collectively, these results indicate that the seventh hypothesis is partially supported, with certain coping styles strongly associated with lower anxiety, and depression and higher wellbeing levels.

##### **Anxiety**

Lower anxiety scores were found amongst those who use task focused coping strategies and are less likely to self-blame at baseline. At 6 and 13 months, women who are less likely to use an avoidant or self-blame coping style, have lower anxiety scores. In terms of overall coping, those who feel they are coping well have lower anxiety than those who are not or just coping at 6 and 13 months.

## Depression

Lower depression scores were found amongst those who are less likely to self-blame at baseline. At 6 months, those who use an emotion focused coping style and are less likely to self-blame have lower depression scores. At 13 months, those who are less likely to use an avoidant focused coping style and are less likely to self-blame have lower depression scores. In terms of overall coping, those who feel they are coping well have lower depression scores than those who are not or just coping over time.

## Wellbeing

Higher wellbeing scores were found amongst those who employ a task and an emotion focused coping style and those who are less likely to self-blame at baseline. At 6 and 13 months, participants who employ a task and emotion focused coping style and those who are less likely to use an avoidant focused or self-blame coping style, have higher wellbeing scores. In terms of overall coping, those who feel they are coping well have higher wellbeing than those who are not or just coping over time.

### 5.3.8 Hypothesis 8: Women with higher resilience will have lower levels of anxiety and depression, and increased levels of wellbeing

#### 5.3.8.1 Resilience

As shown in Table 5.22, the mean resilience scores were 27.91 (SD=6.61) at baseline, 28.50 (SD=6.56) at 6 months and 28.49 (SD=6.42) at 13 months. The maximum resilience score was reported at 6 months.

**Table 5.22: Mean resilience scores over time**

	<b>Baseline Mean (SD) n=66</b>	<b>6 months Mean (SD) n=56</b>	<b>13 months Mean (SD) n=49</b>
<b>Resilience</b>	27.91 (6.61)	28.50 (6.56)	28.49 (6.42)

#### 5.3.8.2 Relationship between resilience and anxiety, depression and wellbeing

Pearson's product-moment correlation coefficient was used to examine the strength and direction of the relationship between anxiety, depression and wellbeing with resilience over time, as displayed in Table 5.23.

**Table 5.23: Relationship between anxiety, depression and wellbeing with resilience over time**

	Anxiety		Depression		Wellbeing	
	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>	<i>r</i>	<i>p</i>
<b>Baseline (n=66)</b>	-0.31	<b>&lt;0.01**</b>	-0.45	<b>&lt;0.01**</b>	0.57	<b>&lt;0.01**</b>
<b>6 months (n=56)</b>	-0.32	<b>0.01*</b>	-0.53	<b>&lt;0.01**</b>	0.67	<b>&lt;0.01**</b>
<b>13 months (n=49)</b>	<b>-0.36</b>	<b>0.01*</b>	-0.54	<b>&lt;0.01**</b>	0.67	<b>&lt;0.01**</b>

\*\* $p < 0.01$  \* $p < 0.05$

### Anxiety

Results indicated a significant, medium to large, negative correlation between anxiety and resilience at baseline ( $r = -0.31$ ,  $n = 66$ ,  $p < 0.01$ ), 6 months ( $r = -0.32$ ,  $n = 56$ ,  $p < 0.05$ ) and 13 months ( $r = -0.36$ ,  $n = 49$ ,  $p < 0.05$ ).

### Depression

Results indicated a significant, medium to large, negative correlation between depression and resilience at baseline ( $r = -0.45$ ,  $n = 66$ ,  $p < 0.01$ ). There was a significant, large to very large, negative correlation between depression and resilience 6 months ( $r = -0.53$ ,  $n = 56$ ,  $p < 0.01$ ) and 13 months ( $r = -0.54$ ,  $n = 49$ ,  $p < 0.01$ ).

### Wellbeing

There was a significant, large to very large, positive correlation between wellbeing and resilience at baseline ( $r = 0.57$ ,  $n = 66$ ,  $p < 0.01$ ), 6 months ( $r = 0.67$ ,  $n = 56$ ,  $p < 0.01$ ) and 13 months ( $r = 0.67$ ,  $n = 47$ ,  $p < 0.01$ ).

#### 5.3.8.3 Summary of hypothesis 8

Collectively, these results demonstrate that the 8<sup>th</sup> hypothesis is supported; women with higher resilience at baseline, 6 and 13 months also have significantly lower anxiety and depression, in addition to higher wellbeing.

### **5.3.9 Regression Analysis**

#### ***Predictors of anxiety, depression and wellbeing over time***

In order to determine the best predictors of anxiety, depression and wellbeing at each time point, binary logistic regression and linear regression were conducted using the variables found to correlate with anxiety, depression and wellbeing at baseline, 6 and 13 months (see Sections 5.3.1.7; 5.3.3.1; 5.3.3.6; 5.3.5.3; 5.3.6.4; 5.3.7.5; 5.3.8.3).

#### **5.3.9.1 Anxiety Caseness**

##### **Baseline Binary Logistic Regression**

The model contained five independent variables (resilience, total number of major life events, task focused coping, self-blame, internal health locus of control), namely, those showing a significant correlation with anxiety at baseline. The full model containing all predictors was statistically significant,  $\chi^2$  (5, n=64)=26.40,  $p<0.01$ , indicating that it could distinguish between participants who had anxiety caseness and anxiety non-caseness. The model as a whole explained between 33.8% (Cox and Snell R square) and 48.0% (Nagelkerke R squared) of the variance in anxiety status, and correctly classified 84.4% of cases. As shown in Table 5.24, only one of the independent variables made a unique statistically significant contribution to the model (self-blame  $p<0.01$ ); recording an odds ratio of 2.00. This indicates that for every additional increase in self-blame score, responders were twice as likely to report anxiety caseness, controlling for other factors in the model.

**Table 5.24: Predicting Likelihood of Anxiety Status (Baseline)**

Variable	B	S.E.	Wald	Sig	Odds Ratio	95% CI for Odds Ratio	
						Lower	Upper
<b>Resilience</b>	0.06	0.07	0.78	0.38	1.06	0.93	1.21
<b>Self-blame</b>	0.69	0.21	10.83**	<0.01	2.00	1.32	3.02
<b>Internal HLOC</b>	<0.01	0.08	<0.01	0.99	1.00	0.85	1.18
<b>Major life events</b>	0.42	0.22	3.90	0.05	1.53	1.00	2.33
<b>Task focused</b>	-0.14	0.08	2.97	0.09	0.87	0.73	1.02

\*\* $p < 0.01$

### 6 Months Binary Logistic Regression

The model contained six independent variables (chance health locus of control, significant other perceived social support, resilience, overall coping, avoidant focused coping and self-blame); namely those showing a significant correlation with anxiety at 6 months. The full model containing all predictors was not statistically significant,  $\chi^2 (6, n=55) = 12.21$ ,  $p = 0.06$ , indicating that the model was not able to distinguish between participants who had anxiety caseness and anxiety non-caseness. The model as a whole explained between 19.9% (Cox and Snell R square) and 29.3% (Nagelkerke R squared) of the variance in anxiety status, and correctly classified 80% of cases.

**Table 5.25: Predicting Likelihood of Anxiety Status (6 Months)**

Variable	<i>B</i>	S.E.	Wald	<i>Df</i>	<i>p</i>	Odds Ratio	95% CI for Odds Ratio	
							Lower	Upper
<b>Chance</b>	0.09	0.08	1.52	1	0.22	1.10	0.98	1.27
<b>Significant other</b>	0.03	0.07	0.16	1	0.69	1.03	0.90	1.18
<b>Resilience</b>	-0.06	0.07	0.83	1	0.36	0.94	0.82	1.08
<b>Avoidant coping</b>	0.17	0.11	2.32	1	0.13	1.18	0.95	1.46
<b>Self-blame</b>	0.20	0.27	0.52	1	0.47	1.22	0.71	2.09
<b>Overall coping</b>	0.02	1.10	0.01	1	0.99	1.02	0.12	8.70

As shown in Table 5.25, none of the independent variables contributed significantly to the predictive ability of the model, therefore forward selection method was chosen, which entered avoidant coping into the regression model on its own, as it had the lowest *p* value, it was shown that with every 1 unit increase in avoidant score, increased the odds of anxiety caseness by 27%. The model containing avoidant coping was statistically significant,  $\chi^2$  (1, *n*=55) =7.14,  $p<0.01$ , indicating that the model was able to distinguish between respondents who had anxiety caseness and anxiety non-caseness. The model with avoidant coping explained between 12.2% (Cox and Snell R square) and 18.0% (Nagelkerke R squared) of the variance in anxiety status, and correctly classified 74.5% of cases, see Table 5.26.

**Table 5.26: Avoidant coping Predicts Likelihood of Anxiety Status (6 Months)**

Variable	<i>B</i>	S.E.	Wald	<i>Df</i>	<i>P</i>	Odds Ratio	95% CI for Odds Ratio	
							Lower	Upper
<b>Avoidant coping</b>	0.24	0.10	6.15**	1	0.01	1.27	1.05	1.54

\*\* $p=0.01$

### 13 Months - Binary Logistic Regression

The model contained five independent variables (significant other and family perceived social support, resilience, avoidant focused coping, self-blame); namely those showing a significant correlation with anxiety at 13 months (excluding dissatisfaction with care at time of miscarriage, follow up and overall coping). The full model containing all predictors was statistically significant,  $\chi^2$  (5, n=49) =11.84,  $p=0.04$ , indicating that the model was able to distinguish between respondents who had anxiety caseness and anxiety non-caseness. The model as a whole explained between 21.5% (Cox and Snell R square) and 30.8% (Nagelkerke R squared) of the variance in anxiety status, and correctly classified 79.6% of cases. As shown in Table 5.27, none of the independent variables contributed significantly to the predictive ability of the model.

**Table 5.27: Predicting Likelihood of Anxiety Status (13 Months)**

Variable	<i>B</i>	S.E.	Wald	<i>Df</i>	<i>P</i>	Odds Ratio	95% CI for Odds Ratio	
							Lower	Upper
<b>Significant other</b>	0.01	0.09	0.02	1	0.89	1.01	0.85	1.20
<b>Family</b>	-0.14	0.13	1.28	1	0.26	0.87	0.68	1.11
<b>Resilience</b>	-0.01	0.07	0.04	1	0.83	0.99	0.87	1.12
<b>Avoidant coping</b>	0.02	0.14	0.03	1	0.87	1.02	0.79	1.33
<b>Self-blame</b>	0.51	0.28	3.39	1	0.07	1.66	0.97	2.85

None of the independent variables contributed significantly to the predictive ability of the model, therefore forward selection method was chosen, which entered self-blame into the regression model on its own, as it was the most significant. The model containing self-blame was statistically significant,  $\chi^2$  (1, n=49) =8.65,  $p<0.01$ , indicating that the model was able to distinguish between respondents who had anxiety caseness and anxiety non-caseness, as demonstrated in Table 5.28. The model with self-blame explained between 16.2% (Cox and Snell R square) and 23.2% (Nagelkerke R squared) of the variance in anxiety status, and correctly classified 79.6% of cases. This indicates that for every additional increase in self-blame score, responders were nearly twice as likely to report anxiety caseness.

**Table 5.28: Self-blame Predicts Likelihood of Anxiety Status (13 Months)**

Variable	<i>B</i>	S.E.	Wald	<i>Df</i>	<i>P</i>	Odds Ratio	95% CI for Odds Ratio	
							Lower	Upper
<b>Self-blame</b>	0.64	0.25	6.74**	1	<0.01	1.90	1.17	3.07

\*\* $p < 0.01$

### 5.3.9.2 Depression

#### Baseline - Binary Logistic Regression

The model contained three independent variables (resilience, total number of major life events, self-blame), namely those showing a significant correlation with depression at baseline (excluding overall coping). The full model containing all predictors was statistically significant,  $\chi^2$  (3,  $n=65$ ) =26.46,  $p < 0.01$ , indicating that the model was able to distinguish between respondents who had depression caseness and depression non-caseness. The model as a whole explained between 33.4% (Cox and Snell R square) and 60.5% (Nagelkerke R squared) of the variance in depression status, and correctly classified 89.2% of cases. As shown in Table 5.29, all of the independent variables made a unique statistically significant contribution to the model (self-blame  $p < 0.01$ ; total major life events  $p = 0.02$ ; resilience  $p = 0.02$ ). The strongest predictor of depression caseness was self-blame ( $p < 0.01$ ) recording an odds ratio of 2.73. This indicates that for every additional increase in self-blame score, responders were nearly three times (2.73) as likely to report depression caseness, controlling for other factors in the model.



**Table 5.29: Predictors of Depression Status (Baseline)**

Variable	B	S.E.	Wald	Sig	Odds Ratio	95% CI for Odds Ratio	
						Lower	Upper
<b>Resilience</b>	-0.21	0.09	5.40*	0.02	0.81	0.68	0.97
<b>Self-blame</b>	1.01	0.36	7.69**	<0.01	2.73	1.34	5.56
<b>Major life events</b>	0.69	0.30	5.06*	0.02	1.95	1.09	3.49

\*\* $p < 0.01$  \* $p < 0.05$

As there was no depression caseness at 6 months and one case at 13 months, linear regression was performed.

### 6 Months – Linear Regression

The model which includes resilience and emotion focused coping, explains 29.5% (adjusted R Sq= 26.9%) of the variance in depression,  $F(2, 55)=11.10$ ,  $p < 0.01$ . Of these two variables, resilience (beta=-0.46,  $p < 0.01$ ) makes the largest unique contribution, whereas emotion (beta=-0.15,  $p=0.24$ ) focused coping did not make a statistically significant contribution, as displayed in Table 5.30.

**Table 5.30: Linear Regression Analysis and Depression (6 Months)**

Independent Variable	Beta	<i>P</i> value
<b>Resilience</b>	-0.46	<0.01**
<b>Emotion focused coping</b>	-0.15	0.24

\*\* $p < 0.01$

### 13 Months – Linear Regression

The model which includes resilience and avoidant focused coping, explains 33.2% (adjusted R Sq= 30.3%) of the variance in depression,  $F(2, 48) = 11.10$ ,  $p < 0.01$ . Of these two variables, resilience ( $\beta = -0.49$ ,  $p < 0.01$ ) makes the largest unique contribution, whereas avoidant ( $\beta = 0.21$ ,  $p = 0.10$ ) focused coping did not make a statistically significant contribution, as displayed in Table 5.31.

**Table 5.31: Linear Regression Analysis and Depression (13 Months)**

Independent Variable	Beta	P value
Resilience	-0.49	<0.01**
Avoidant CSQ	0.21	0.10

\*\* $p < 0.01$

#### 5.3.9.3 Wellbeing

##### Baseline – Linear Regression

The model which includes resilience, total number of major life events, internal health locus of control, emotion and task focused coping, explains 49% of the variance in wellbeing,  $F(5,58) = 11.16$ ,  $p < 0.01$ . Of these four variables, resilience makes the largest unique contribution ( $\beta = 0.57$ ,  $p < 0.01$ ), although total major life events also made a statistically significant contribution ( $\beta = 0.35$ ,  $p < 0.01$ ), as displayed in Table 5.32. The resilience score has a part correlation coefficient of 0.49, indicating that resilience uniquely explains 24% of the variance in wellbeing scores. For the total major life events score, the value is -0.34, indicating a unique contribution of 12% to the explanation of variance in wellbeing.

**Table 5.32: Linear Regression Analysis and Wellbeing (Baseline)**

Independent Variable	Beta	P value
CDRS-Resilience	0.57	<0.01**
Total number of major life events	0.35	<0.01**
Emotion focused coping	0.15	0.18
Internal health locus of control	0.12	0.26
Task focused coping	-0.10	0.38

\*\* $p < 0.01$

### 6 Months - Linear Regression

The model which includes internal health locus of control, resilience, avoidant, emotion and task focused coping, explains 58.6% (adjusted R Sq= 54.5%) of the variance in wellbeing,  $F(5, 56) = 14.15$ ,  $p < 0.01$ . Of these five variables, resilience (beta=0.50,  $p < 0.01$ ) makes the largest unique contribution, although avoidant (beta=-0.32,  $p < 0.01$ ) and emotion (beta=0.27,  $p = 0.03$ ) focused coping also made a statistically significant contribution, as displayed in Table 5.33. Internal health locus of control (beta=0.07,  $p = 0.49$ ) and task focused coping (beta=0.02,  $p = 0.83$ ) were not found to be significant predictors of wellbeing within the model.

**Table 5.33: Linear Regression Analysis and Wellbeing (6 Months)**

Independent Variable	Beta	P value
Resilience	0.50	<0.01**
Avoidant coping	-0.32	<0.01**
Emotion focused coping	0.27	0.03*
Internal HLOC	0.07	0.49
Task focused coping	0.02	0.83

\*\* $p < 0.01$  \* $p < 0.05$

### 13 Months - Linear Regression

The model which includes resilience, avoidant, emotion and task focused coping, explains 51.4% (adjusted R Sq= 46.9%) of the variance in wellbeing,  $F(4, 44) = 11.61$ ,  $p < 0.01$ . Of these four variables, resilience ( $\beta = 0.52$ ,  $p < 0.01$ ) makes the largest unique contribution, although avoidant ( $\beta = -0.24$ ,  $p < 0.05$ ) focused coping also made a statistically significant contribution, as displayed in Table 5.34. Emotion focused coping ( $\beta = 0.14$ ,  $p = 0.29$ ) and task focused coping ( $\beta = 0.13$ ,  $p = 0.33$ ) were not found to be significant predictors of wellbeing within the model.

**Table 5.34: Linear Regression Analysis and Wellbeing (13 months)**

Independent Variable	Beta	P value
Resilience	0.52	$<0.01^{**}$
Avoidant coping	-0.24	$<0.05^{*}$
Emotion focused coping	0.14	0.29
Task focused coping	0.13	0.33

$^{**}p < 0.01$   $^{*}p < 0.05$

### 5.4 Summary of Results

#### **Significant predictors of anxiety, depression and wellbeing over time**

Table 5.35 summarises the predictors that predict lower anxiety and depression scores and higher wellbeing scores at baseline, 6 and 13 months.

**Table 5.35: Predictors over time**

	<b>Lower Anxiety</b>	<b>Lower Depression</b>	<b>Higher Wellbeing</b>
<b>Baseline</b>	<p>Lower No of MLE. Higher IHLOC. Higher task focused coping. <b>Do not self-blame.</b> Higher resilience.</p>	<p>Lower No of MLE. Coping well. <b>Do not self-blame.</b> Higher resilience.</p>	<p>Lower No of MLE. Higher IHLOC. Higher MPSS SO and Family. Coping well. Higher task and emotion focused coping. Do not self-blame. <b>Higher resilience.</b></p>
<b>6 Months</b>	<p>Lower CHLOC. Higher MPSS SO. Coping well. <b>Lower avoidant focused coping.</b> Do not self-blame. Higher resilience.</p>	<p>Higher MPSS SO, Family and Friends. Coping well. Higher emotion focused coping. Do not self-blame. <b>Higher resilience.</b></p>	<p>Higher IHLOC. Higher MPSS SO, Family and Friends. Coping well. Higher task and emotion focused coping. Lower avoidant focused coping. Do not self-blame. <b>Higher resilience.</b></p>
<b>13 Months</b>	<p>Higher dissatisfaction with care from hospital staff at time of MC. Did not receive follow up care. Higher MPSS SO, and Family. Coping well. Lower avoidant focused coping. <b>Do not self-blame.</b> Higher resilience.</p>	<p>Higher MPSS SO, Family and Friends. Coping well. Lower avoidant focused coping. Do not self-blame. <b>Higher resilience.</b></p>	<p>Higher dissatisfaction with care from hospital staff at time of MC. Higher MPSS SO, Family and Friends. Coping well. Higher task and emotion focused coping. Lower avoidant. Do not self-blame. <b>Higher resilience.</b></p>

#### **5.4.1 Anxiety**

At baseline, lower anxiety was associated with women who do not self-blame, who have higher resilience, who believe their health is within their own control, were more likely to use a task focused coping style and have fewer major life events. Self-blame was the strongest predictor of anxiety caseness at baseline.

At 6 months, lower anxiety was significantly associated with higher resilience and social support from significant other, felt they were coping well, in addition to lower scores on chance health locus of control, avoidant and self-blame coping styles. An avoidant coping style was the strongest predictor of anxiety caseness at 6 months.

At 13 months, lower anxiety was significantly associated with higher scores on resilience and perceived social support from a Significant Other and Family, felt they were coping well, and had lower scores on avoidant and self-blame coping styles. In addition they did not receive follow up and were less satisfied with care received from hospital staff at time of miscarriage. Self-blame was the strongest predictor of anxiety caseness.

#### **5.4.2 Depression**

At baseline, lower depression was associated with women who have higher resilience, felt they were coping well, who had fewer major life events and who are less likely to self-blame. The strongest predictor of depression caseness was self-blame.

At 6 months, lower depression was associated with higher resilience, higher perceived social support from Significant Other, Family and Friends, felt they were coping well, higher emotion focused coping and who are less likely to self-blame. The strongest predictor of depression was resilience at 6 months.

At 13 months, lower depression was associated with higher resilience, higher perceived social support from Significant Other, Family and Friends, felt they were coping well, who are less likely to use an avoidant focused coping style and who are less likely to self-blame. The strongest predictor of depression was resilience at 13 months.

#### **5.4.3 Wellbeing**

Higher wellbeing at baseline was significantly associated with higher resilience where women reported being more able to bounce back after hardship, had fewer major life events, had an internal health locus of control, where they believe their health is within their own control, felt they were coping well, who felt they could express their feelings emotionally, and were proactive in planning for the future, in addition to being less likely to self-blame. Higher

resilience and fewer total number of major life events were the best predictors of higher wellbeing at baseline.

At 6 months, higher wellbeing was significantly associated with higher resilience where women reported being more able to bounce back after hardship, had an internal health locus of control, where they believe their health is within their own control, higher perceived social support from Significant Other, Family and Friends, felt they were coping well, who felt they could express their feelings emotionally, and were proactive in planning for the future, in addition to being less avoidant or likely to self-blame. Higher resilience and fewer total number of major life events were the best predictors of higher wellbeing at 6 months.

At 13 months, higher wellbeing was significantly associated with higher resilience where women reported being more able to bounce back after hardship, higher perceived social support from Significant Other, Family and Friends, were dissatisfied with their care from hospital staff at time of miscarriage, felt they were coping well, who felt they could express their feelings emotionally, and were proactive in planning for the future, in addition to being less avoidant or likely to self-blame. Higher resilience was the best predictor of higher wellbeing at 13 months.

Resilience was the best predictor of higher wellbeing at baseline, 6 and 13 months.

## **5.5 Qualitative Findings from Phase 1 Stage 2**

The following section will discuss the results from the open-ended questions included in PGBQ, PG6MQ and PG13MQ which aimed to determine the factors that women felt were most and least helpful in dealing with their miscarriage experience.

### **5.5.1 Baseline**

#### ***5.5.1.1 Most helpful***

The most frequent comments noted as most helpful at baseline included positive experience of healthcare (n=53), followed by positive comments about their significant other (n=13), family (n=12), friends (n=12), a task focused coping style (n=6) and emotion focused coping style (n=1).

## **Positive experience of healthcare**

Comments relating to a positive experience of healthcare typically described how participants felt they were supported to make decisions and felt the healthcare professionals were attentive and caring.

“A feeling that I was only a phone call away from experts. Close attention from midwives at the end of the phone. Swift action regarding a scan. Helpful, practical and sympathetic service when faced with reality of miscarriage”.

“Staff in the ward were lovely, didn't rush you to make decisions, very nice and caring, gave us leaflets which helped”.

There was also some evidence that healthcare professionals may be influential in reducing self-blame.

“Staff insisted it wasn't my fault”.

## **Significant Other**

Significant Other comments typically described how participants felt the support given by their partner was helpful.

“Support and love from my partner”.

In addition to this, their Significant Other helped them to make sense of their miscarriage, focusing on more positive aspects.

“He summed it up quite accurately by saying that what happened with the first pregnancy allowed us to appreciate the fragility of life and had it not happened maybe we would have taken getting pregnant for granted”.

## **Family**

Family comments typically described how participants felt the support from their family was helpful; especially when family members had a personal experience of miscarriage.

“Talking to my mum about her experience of miscarriage”.

## **Friends**

Positive comments indicated that participants found speaking to their friends with personal experience of miscarriage as helpful.



“Speaking to friends who had experienced the same was invaluable on so many levels”.

### **Coping style**

Six comments related to a task focused coping style and participants described how making plans was helpful.

“Making plans and decisions”.

In addition to the evidence above indicating the benefits of sharing their experiences with significant others, family and friends; one further comment related to an emotion focused coping style, where the participant described the benefits of sharing her emotions online.

“I don’t like to talk about my feelings a lot, but that board (message board online) helped as it is anonymous and everyone has been through the same thing so can understand and support each other”.

#### **5.5.1.2 Least helpful**

The most common factors noted as least helpful at baseline include negative experience of healthcare (n=47), followed by negative comments about their friends (n=7), family (n=5), significant other (n=2), and a self-blame coping style (n=2).

#### **Negative experience of healthcare**

Negative experience of healthcare comments typically described how participants felt they were not supported to make decisions and that healthcare professionals were not as understanding as they should have been, especially in relation to information about the psychological impact of miscarriage.

“Being given written information regarding my options but no advice as to which would be best for me by hospital staff e.g. would a D and C be faster and suit my childcare situation better? Also psychological impact should be discussed. Staff change over resulted in different surgical team doing ERPOC, (the operation) no one introduced themselves and I was never asked if I was OK with the all-male team treating me”.

The lack of follow up care was also noted, leaving some participants feeling vulnerable and unsupported.

“Aftercare!!!, I received no advice, no leaflet, no nothing!! Felt very alone and vulnerable”.

Whilst some participants felt comfortable to use online resources for follow up care, others were not comfortable with this form of support.

“Lack of aftercare and support, I feel like I have been left on my own to cope, I have been unable to find where to go for support/counselling except for online forums, which I do not feel comfortable with”.

There was some evidence that the healthcare professionals may not know what to say to participants following miscarriage, or understand the impact of miscarriage on psychological wellbeing.

“Although the doctors were very knowledgeable I felt their bedside manner was not as good as the midwives. It made the experience a bit scarier when dealing with the doctors”.

“The midwife took great care of me but had left me alone for over 30 minutes not long after the news and I felt very agitated and alone”.

“Dr asked questions but did not acknowledge miscarriage”.

There was also evidence that some participants may need support between scans whilst waiting for treatment at home.

“Found it hard to deal with that for 5 days, the fetus was still in my body but not alive”.

“The space between when the bleeding started and going for the scan seemed a long time to be left not knowing anything”.

Some negative comments related to the location of healthcare within the hospital, where participants described an insensitive ward environment.

“My partner and I were put in a room at the bottom of labour ward, obviously people were giving birth and we could hear babies crying which we both found distressing”.

## **Friends**

Numerous comments referred to negative experiences when speaking to friends with little understanding or insight into how the women were feeling.

“Friends who don’t understand and think you should just get over it and move on”.

“People (who are trying to help) saying “it wasn’t meant to be” or “you can try again” etc.”.

With some women reporting that adjustment following miscarriage takes time.

“They seem unaware that a miscarriage is rarely instant and how it takes a long time to heal physically and emotionally despite my “brave face””.

## **Family**

Participants also reported negative comments in relation to family members, resulting in participants feeling unsupported, with their needs unmet.

“Feeling that I had to support family members through their grief when I should have been getting the support”.

“Feeling the disappointment from some family members”.

## **Significant Other**

Negative comments described how participants felt their partner did not always understand, or share their feelings, which may have resulted in self-blame.

“I wish my partner understood and wanted to talk about his feelings more. He shouts at me more and makes me feel guilty sometimes so I don't really try to discuss it anymore or bother anymore”.

### **5.5.2 Six months**

#### **5.5.2.1 Most helpful**

The factors most frequently described as most helpful at 6 months were positive comments about friends (n=19), followed by positive comments about their significant other (n=13), task focused coping style and internal health locus of control (n=13), family (n=11), positive experience of healthcare (n=5), and avoidant focused coping style (n=1).

## **Friends**

Positive comments about friends, often where they shared their personal experiences of miscarriage with each other, were most frequently noted as helpful.

“Speaking to friends and colleagues who had also had miscarriages-being open and not hiding what had happened.”

“Being able to talk to friends and being able to give help and advice to friends who have, since me, suffered a miscarriage.”

One participant described how she felt it was helpful to be happy for and spend time with friends and family members who have babies.

“Be happy for friends and family who are all having babies and having cuddles with newborn babies, helps a lot”.

### **Significant Other**

Valued time spent together with their significant other was the second most commonly noted factor.

“My husband and I have booked a long weekend away on the anniversary of our first miscarriage”.

Including their support and optimistic outlook to achieve another pregnancy, this may enhance psychological wellbeing.

“My husband’s support and becoming pregnant again”.

### **Task Focused Coping**

Thirteen comments related to a task focused coping style and internal health locus of control, whereby they were proactive in making healthier lifestyle choices.

“I found that trying to be more healthy i.e. improving my diet, taking up exercise classes certainly helped me feel good about myself”.

“Allowing myself time to grieve, taking time off work, attending reflexology and reiki”.

One participant described how prayer was helpful.

“Reading the bible helps me gain perspective on what happened”.

### **Family**

The next most common factor related to the family, where participants described supportive care from family members as being helpful.

“My sister just being there, always wanting to listen.”

Having other children to focus on was also found to be helpful.

“Having my little boy (now 21 months) to look after, care for and entertain every day. I feel blessed to have him and know I would be suffering a great deal more if I had no children prior to my miscarriage.”

### **Positive Experience of healthcare**

Fewer comments related to a positive experience of healthcare at 6 months compared to baseline, but some women did recall the benefits of caring, supportive and optimistic healthcare professionals.

“The help of the nurses and staff at the hospital, the staff made me as comfortable as possible. Everyone was extremely friendly and kept positive to help me and my husband through our low and sad times.”

### **Avoidant focused coping style**

One comment related to an avoidant focused coping style, whereby they did not dwell on the miscarriage, which may enhance psychological wellbeing.

“Forgetting about it.”

#### **5.5.2.2 Least helpful**

The most frequent factors described as least helpful at 6 months include negative experience of healthcare (n=25), followed by negative comments from friends (n=9), family (n=1), emotion focused coping (n=1), and a self-blame coping style (n=1).

### **Negative Experience of Healthcare**

A negative experience of healthcare was most commonly described as least helpful; particularly in relation to a lack of follow up support, which left some participants feeling unsupported with no one to talk to about their miscarriage experience.

“There has been no follow up support at all. I did find the Miscarriage Association Forum, but I had to find this myself. I felt there was no indication of support available and where I could access it. At times more than anything I wanted to speak to someone who knew how it felt - I still have not been able to do this - miscarriage is a 'taboo' subject. I don't know anyone else affected by it.”

It was acknowledged that whilst miscarriage is common, society does not talk about it, but that if people did talk about it, participants may find it helpful. It seems that there is little acknowledgement of the psychological consequences of miscarriage, with no ritual to “cleanse the grief” (Orenstein 2002; p38). However, it was acknowledged that this was felt to be out with healthcare professionals’ control.

“Not so much since the miscarriage, but before it happened and at the time of miscarriage, it would have been more helpful to know about the fact that it was so common. What I mean is knowing that people close to you have experienced miscarriage. It is such a taboo subject in our society and it would have been helpful if people talked and were more open about it. I guess this is not something the medical profession can control”.

## **Friends**

The next most common factor related to friends being unaware of their miscarriage and therefore not being able to share their emotions following miscarriage.

“The fact that a huge circle of people around me were pregnant, they were mums at my daughter’s toddler group and they had no knowledge of my experience. This was heart-breaking every week to see them”.

Raising awareness of their own due date had they not experienced a miscarriage.

“Dealing emotionally with friends falling pregnant and due when I would have been due”.

Including evidence that one participant felt her friend’s comments were insensitive.

“Comments from well-meaning friends such as "it wasn't meant to be" "you already have two boys, what more could you want"”

## **Family**

There was one comment about a family member who did not acknowledge the loss, which was noted as least helpful.

“close family not even acknowledging the loss”.

## **Coping styles**

One participant described how her emotional focused coping style was least helpful.

“crying and feeling sorry for myself”

A self-blame coping style at 6 months was also described as least helpful, which demonstrates that self-blame is something that may not be helpful in reducing psychological wellbeing.

“blaming myself for what happened”.

### **5.5.3 Thirteen months**

#### **5.5.3.1 Most helpful**

The factors most commonly described as most helpful at 13 months were positive comments about friends (n=14), followed by task focused coping style (n=12), positive experience of healthcare (n=10), comments about their family (n=8), and their significant other (n=7).

#### **Friends**

Spending time with friends and sharing their personal experiences of miscarriage with each other was described as helpful.

“Speaking to friends who had been through the same thing.”

#### **Task Focused Coping**

The next most common factor was related to task focused coping, whereby women found becoming pregnant was helpful.

“Getting pregnant again and having a healthy pregnancy so far!”

There was also evidence that being proactive about talking to others about their feelings when trying for a pregnancy was most helpful.

“Going on website and talking to others that were trying for a baby after miscarriage, as they understood how I felt but didn't know me so I could be honest about my feelings.”

#### **Positive Experience of Healthcare**

The next most helpful factor was a positive experience of healthcare following miscarriage, and support in the next pregnancy.

“Long chat with my midwife after”.

“Midwife support through subsequent pregnancy”.

“Falling pregnant again and having scans every 2 weeks for the first 12 weeks”.

#### **Family**

Being able to talk about miscarriage with their family was noted as helpful, and may enhance psychological wellbeing.

“Talking about it with family”.

## **Significant Other**

The presence of their significant other and support and encouragement received from their significant other to try for another pregnancy were also described as helpful.

“My partner being there for me whenever I needed him”.

“Supportive husband for reassurance and encouragement to try again”.

### **5.5.3.2 Least helpful**

The factors most frequently described as least helpful at 13 months were negative experience of healthcare (n=23), followed by negative comments about their friends (n=6), and family (n=2).

## **Negative Experience of Healthcare**

Participants noted a lack of follow up care as being least helpful, leaving them with unanswered questions and feeling unsupported.

“They made me feel like I didn't matter anymore because I wasn't carrying a live baby so didn't need to be checked up on. That I think is wrong!! I sometimes thought I was going mad, with all the questions I had, but nobody to answer them apart from myself”.

Indeed, it took time for one participant to realise that she needed follow up support.

“No follow-up care, I thought I was ok at the time but looking back I was emotionally and mentally fragile”.

Also, there was evidence of a lack of awareness amongst health professionals around the impact on participants' health and wellbeing, especially in the next pregnancy.

“Midwife, when I expressed concerns about future miscarriages, she was very dismissive”.

“My doctor's notes weren't even updated. When I went to midwife after falling pregnant again, I had to go through it all and felt they should have this on my record”.

“Lack of support during this pregnancy, I wanted an earlier scan before 12 weeks, this was refused”.



“Whilst getting pregnant again I had to say and write several times about my 3 miscarriages having to write and explain these on numerous occasions to lots of different people was awful”.

### **Friends and Family**

Negative comments about friends and family members were also mentioned as least helpful, sometimes this related to them getting pregnant, which may reduce psychological wellbeing.

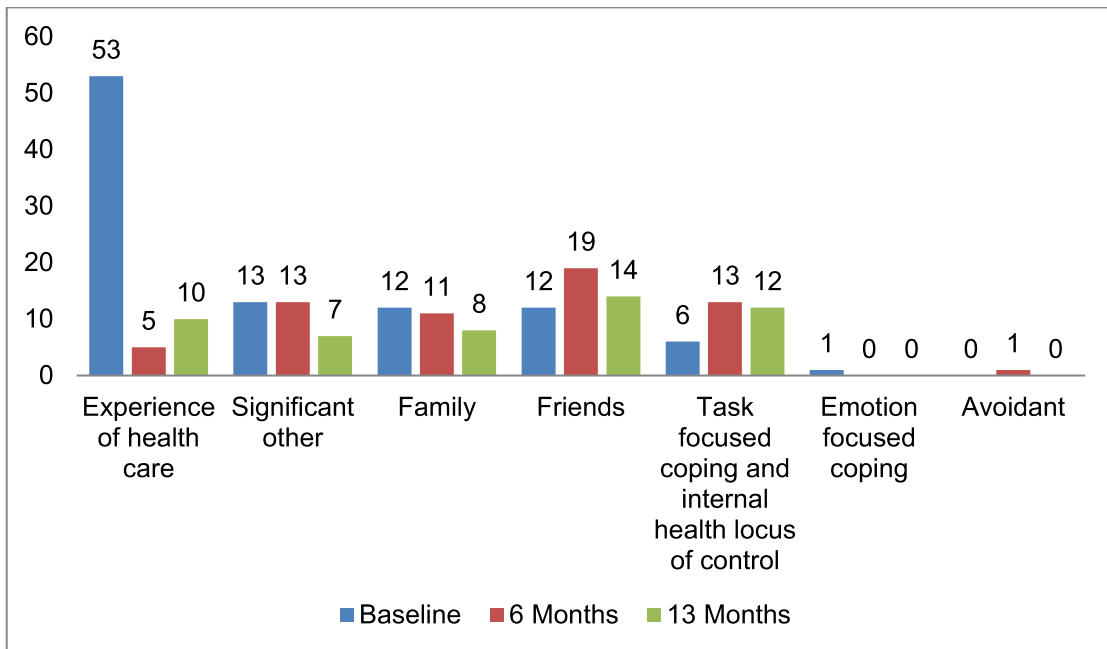
“Friends and family getting pregnant”.

One participant felt her friends avoided speaking about miscarriage, because they did not know what to say to her.

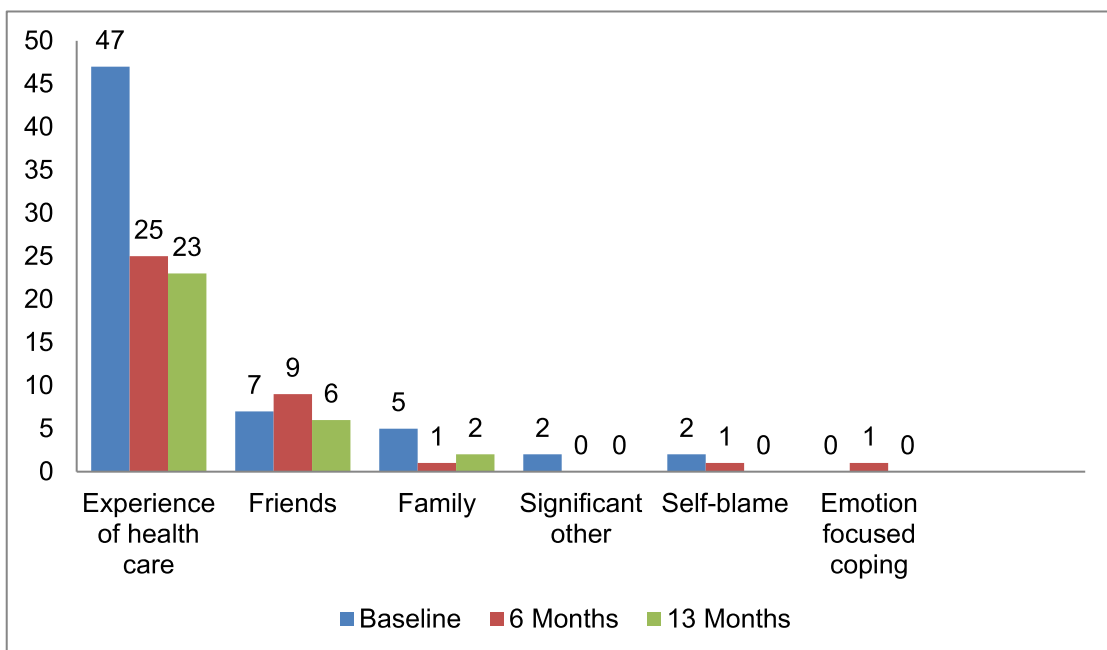
“Friends seem embarrassed that I’ve had miscarriage after miscarriage and don’t know what to say”.

#### **5.5.3.3 Summary of findings**

Figure 5.2 and 5.3 display the number of most and least helpful comments over the three different time points, to demonstrate how these change over time. Negative experiences of healthcare tended to be noted at all three time points, whereas comments related to positive experiences of healthcare were reported at baseline but less so at 6 months and 13 months. Positive comments related to participants’ significant other were more prevalent than negative comments about their significant other at all three time points, which highlights the importance of their role in supporting women following miscarriage.



**Figure 5.2: Number of most helpful comments over time**



**Figure 5.3: Number of least helpful comments over time**

## **5.6 Summary Overall**

### ***Additional major life events***

In terms of the hypotheses, total number of major life events was significantly associated with anxiety, depression and wellbeing, whereby lower numbers of major life events resulted in lower anxiety, depression and higher wellbeing.

### ***Reproductive history and status***

Reproductive history or reproductive status was not related to anxiety, depression or wellbeing at baseline, 6 or 13 months.

### ***Satisfaction with and experience of healthcare provision***

The majority of women reported satisfaction with, and provision of healthcare. Those who were dissatisfied with care received at the time had lower anxiety and higher wellbeing at 13 months. Participants who did not receive follow up had lower anxiety at 13 months, suggesting that those with lower anxiety are less likely to access or receive follow up and therefore be more unsatisfied. This was evident in the qualitative feedback, with many women commenting on the desire for follow up.

### ***Health locus of control***

Those who had a belief that they controlled their health had lower anxiety and higher wellbeing at baseline, as well as higher wellbeing at 13 months. Whilst those who were less likely to explain their health to chance, had lower anxiety at 6 months.

### ***Perceived social support***

The importance of positive social support was also important in influencing psychological wellbeing with higher levels of social support from Significant Other, family and friends resulting in higher levels of wellbeing and lower levels of depression at 6 and 13 months. Participants Significant Other was important in reducing anxiety at 6 months, whilst their Significant Other and family were important in reducing anxiety at 13 months.

### ***Coping styles and overall coping***

Coping styles influenced psychological wellbeing, with self-blame affecting anxiety, depression and wellbeing scores at all three time points, demonstrating that those who do not self-blame have enhanced psychological wellbeing. Lower avoidant coping scores were associated with lower anxiety, in addition to higher wellbeing at 6 months. Whilst lower avoidant coping scores

were associated with lower anxiety, lower depression and higher wellbeing at 13 months, suggesting that not having an avoidant coping style over time enhances psychological wellbeing. Higher task focused coping was associated with lower anxiety and higher wellbeing at baseline, in addition to higher wellbeing at 6 months and 13 months. Being able to express emotions was helpful in increasing wellbeing at all time points, as well as lowering depression at 6 months, but did not influence anxiety.

The depression and wellbeing scores were significantly different between overall coping groups, with lower depression and higher wellbeing amongst those that were in the coping well group at baseline, 6 and 13 months. In relation to anxiety, lower anxiety scores were amongst those that were in the coping well group at 6 and 13 months.

### ***Resilience***

Higher resilience scores were associated with lower anxiety, depression and higher wellbeing scores at all time points, suggesting that being more resilient enhances psychological wellbeing.

### ***Effect of time***

Depression and wellbeing improve after 6 months with little further enhancement at 13 months; anxiety levels however remain heightened up to 13 months post miscarriage.

### ***Strongest predictors of psychological wellbeing***

Self-blame was the strongest predictor of anxiety and depression caseness at baseline, whilst avoidant focused coping and self-blame were the strongest predictors of anxiety caseness at 6 and 13 months respectively. Resilience was the strongest predictor of depression at 6 and 13 months, in addition to wellbeing at all three time points.

This study has identified the impact of miscarriage on psychological wellbeing over time and identified the factors that moderate its impact. The next chapter of the thesis employs a qualitative approach using semi-structured interviews, to further explore how these factors influence women's wellbeing and determine how women enhance psychological wellbeing over time.



## **CHAPTER 6**

### **PHASE 2: THE QUALITATIVE STUDY – AN IN DEPTH EXPLORATION OF THE MODERATORS OF WELLBEING FOLLOWING MISCARRIAGE**

#### **6.1 Introduction**

This Chapter presents the results from Phase 2, the qualitative study, which explores the protective factors that predict lower anxiety, depression and higher wellbeing from Phase 1, to further understand how women enhance health and psychological wellbeing following miscarriage.

##### **6.1.1 Phase 2 Study Aims and Research Objectives**

In order to address the study aims and research objectives for Phase 2, as described in Chapter 1 Section 1.6, the following areas were explored during the semi-structured interviews. The interview started with an exploration of how participants experienced miscarriage, events leading up to it, their feelings and emotional reactions following their miscarriage, who was around, and what they felt helped at the time. Participants were encouraged to discuss their experiences of healthcare provision, who was involved in their care, ease of access to care, how information was communicated, influences on decision making, support offered/received and their overall experience of healthcare provision. Healthcare provision after discharge from hospital was also explored, with participants views obtained of what helped, in addition to what they felt hindered their adjustment.

To explore health locus of control, participants were asked about how they made sense of miscarriage, their views on what controls their health in addition to health care practices and behaviours which they felt influenced their wellbeing since the miscarriage. Questions relating to whether the experience changed their views on health or health behaviours were explored.

To explore social support, participants were asked about their views of support they received from their Significant Other, Family and Friends at the time of miscarriage, after they went home and since the miscarriage, and what helped. Questions relating to other avenues of social support were further explored, who they spoke to or turned to for help, including online sources of support and social support networks such as The Miscarriage Association.

To explore coping styles, participants were asked how they felt they coped following miscarriage, including which coping styles they used and what helped or hindered their adjustment to cope with miscarriage. These coping styles were compared to how they usually cope with other challenging life situations, to identify what helped them cope following miscarriage, compared to coping strategies used in general.

To explore resilience, participants were asked what gave them strength, influencing their ability to adjust and bounce back after their miscarriage. In essence, Phase 2 explored how participants comprehend and deal constructively with miscarriage, to identify the protective factors as resources at their disposal to strengthen their ability to cope.

Given the aim of Phase 2 was to explore women's experiences of miscarriage, a qualitative approach is appropriate. It facilitates an understanding of women's experience in the social world, including their use of language and data collection techniques are participant led, in the sense that they (as in the researcher) enable participant-generated meanings to be heard (Willig 2013). This part of the study also takes a salutogenic perspective i.e. the theory of health, in contrast to the deficit model, which focuses on ill-health and disease. This was done by further exploring the findings from Phase 1, the protective factors that enhance psychological wellbeing, in an attempt to uncover assets for health. Whilst exploring what helped participants, which may enhance their psychological wellbeing, participants also described what did not help, which may decrease their psychological wellbeing.

### **6.1.2 Biographical Characteristics**

#### ***Age***

The mean age of those who were interviewed (n= 9) was 33.22 (SD=4.89).

#### ***Marital status***

Marital status at 13 months for those who were interviewed was 1 single participant (1.11%), 1 living with a partner (11.11%) and 7 married (77.78%).

#### ***Total number of years in education***

The total number of years in education for those who were interviewed was 15.56 (SD=3.68).

#### ***Scottish Index of Multiple Deprivation Score (SIMD)***

The participants who were interviewed had a mean socio-economic status of 3575.22 (SD=1266.30) as measured by their SIMD score.

#### ***Ethnicity***

All women who were interviewed (100%) described their ethnic origin as 'White British'. Table 6.1 describes the participants' marital status, SIMD quintile, ethnicity and reproductive status for those who were interviewed.

**Table 6.1: Demographic details for MG at Interview**

Interviews (n=9)		n (%)
<b>Marital Status</b>	Single	1 (11.11)
	Living with partner	1 (11.11)
	Married	7 (77.78)
<b>SIMD Quintiles</b>	Most deprived	0 (0)
	2 <sup>nd</sup> most deprived	3 (33.33)
	Middle	2 (22.22)
	2 <sup>nd</sup> least deprived	3 (33.33)
	Least deprived	1 (11.11)
<b>Ethnicity</b>	White British	9 (100)
<b>Reproductive Status</b>	Not actively trying for a baby	2 (22.22)
	Actively trying for a baby	1 (11.11)
	Pregnant	1 (11.11)
	Had a baby	5 (55.56)

### 6.1.3 Psychological wellbeing of participants: anxiety, depression and wellbeing

Table 6.2 reports interviewees' marital status, number of children previously, total number of miscarriages, their current reproductive status (not trying for a baby, actively trying for a baby, currently pregnant with number of weeks gestation, delivered a baby since miscarriage). In addition, the table includes participant's wellbeing, anxiety and depression status at baseline, 6 and 13 months, and whether they increased, decreased or remained stable over time (i.e. within 3 points across all time points).



**Table 6.2: Characteristics of Participants**

	<b>Marital status</b>	<b>Previous No. of children</b>	<b>Total No. of m/c</b>	<b>Reproductive status since m/c</b>	<b>Wellbeing status @ B, 6, 13</b>	<b>Anxiety status @ B, 6, 13</b>	<b>Depression status @ B, 6, 13</b>
<b>Interview 1</b>	Married	1	2	Baby	59, 60, 57 ↔	5, 6, 8 ↔ non-caseness	1, 0, 0 ↔ non-caseness
<b>Interview 2</b>	Married	1	3	Baby	54, 55, 63 ↑	2, 7, 5 ↔ non-caseness	3, 3, 2 ↔ non-caseness
<b>Interview 3</b>	Married	3	3	6/52 pregnant	70, 70, 70 ↔	0, 13, 18 ↑ Increased to caseness at 6 and 13 months	0, 1, 3 ↔ non-caseness
<b>Interview 4 Telephone</b>	Married	0	3	Baby	42, 57, 45 ↓	17, 10, 11 ↓ caseness at baseline and 13 months	8, 2, 5 ↔ non-caseness
<b>Interview 5</b>	Married	1	2	Trying	50, 44, 55 ↑	5, 4, 2 ↔ non-caseness	0, 2, 0 ↔ non-caseness

	Marital status	Previous No. of children	Total No. of m/c	Reproductive status since m/c	Wellbeing status @ B, 6, 13	Anxiety status @ B, 6, 13	Depression status @ B, 6, 13
<b>Interview 6</b>	Separated	2	1	Not trying	39, 39, 30 ↓	10, 10, 7 ↔ non-caseness	7, 3, 7 ↔ non-caseness
<b>Interview 7</b>	Living Together	0	1	Baby	35, 53, 50 ↑	10, 8, 10 ↔ non-caseness	15, 1, 5 ↓ caseness at baseline reduced to non-caseness at 6 & 13 months
<b>Interview 8</b>	Married	0	1	Not trying	53, 50, 55 ↑	8, 11, 6 ↓ Non-caseness at baseline and 13 months caseness at 6 months	4, 6, 1 ↓ non-caseness
<b>Interview 9</b>	Married	0	2	Baby	52, 61, 65 ↑	3, 3, 2 ↔ non-caseness	2, 1, 0 ↔ non-caseness

**Key for Table 6.2: B = Baseline, 6 = 6 months, 13 = 13 months, ↑ = increased, ↓ = decreased, ↔ = stable.**

Within the extracts presented in italics, are the quotes representing either the participant's own experience or thoughts, or somebody else's talking, as they recalled their words and incorporated these in their own recollections. Participants' psychological status at 13 months is also documented.

## ***Findings***

The process of analysing the interview data was based on The Framework Method's (Ritchie and Lewis's 2003) 'Analytical Hierarchy' which is matrix-based, as described in Chapter 3. The justification for this approach was that it provides transparent results through the use of an audit trail, improving dependability (Bazeley and Jackson 2013) offering conclusions that relate back to the original data (Rubin and Rubin 2011). An audit trail of data collection was maintained to provide a chain of evidence to allow thought processes and interpretations to be followed. The quotes were linked back to the transcript, by the use of a participant interview number and line number within the transcript, maintaining a clear audit trail.

Two broad dimensions that influence women's psychological wellbeing emerged during data analysis: positive experiences and behaviours which enhance psychological wellbeing and negative experiences which have a detrimental effect on psychological wellbeing. There were six main themes relating to these two broad dimensions, which are displayed in Table 6.3, along with the categories and sub-categories within each theme.

**Table 6.3: Themes relating to psychological wellbeing**

<b>Themes</b>	<b>Categories and sub-categories – positive experiences and behaviours</b>	<b>Categories and sub-categories – negative experiences</b>
<b>1. Experience of healthcare provision</b>	1.1 Compassionate care 1.1.1 Informed choice 1.1.2 Supportive & responsive care 1.1.3 Sensitive care	1.2 Poor care provision 1.2.1 Lack of follow up 1.2.2 Insensitive care
<b>2. Health locus of control</b>	2.1 Internal HLOC 2.1.1 Being in control 2.1.2 Proactive in seeking healthy behaviors	2.2 External HLOC 2.2.1 Fate 2.2.2 Powerful others
<b>3. Social Support</b>	3.1 Support from Significant Other 3.1.1. Physical presence 3.1.2 Emotional presence 3.1.3 Increases optimism 3.1.4 Reduces self-blame 3.2 Family: Women's work 3.2.1 Physical presence 3.2.2 Reduces self-blame 3.2.3 Normalise the experience 3.3 Friends: Women's work 3.3.1 Shared experience 3.3.2 Emotional presence 3.3.3 Physical presence 3.3.4 Increases task focused coping 3.3.5 Reduces self-blame 3.3.6 Normalise experience	3.4 Lack of support Significant Other 3.4.1 Lack of physical presence 3.4.2 Lack of emotional presence 3.4.3 His needs unmet 3.5 Lack of support Family 3.5.1 Lack awareness 3.5.2 It's their loss too 3.6 Lack of support Friends 3.6.1 Lack awareness 3.6.2 Lack of physical presence
<b>4. Coping Style</b>	4.1 Emotion focused coping 4.2 Task focused coping	4.3 Self-blame 4.4 Avoidant focused coping
<b>5. Resilience</b>	5.1 Acceptance facilitates personal growth 5.2 Stress reduction increases strength 5.3 Catalyst for personal growth 5.4 New perspective strengthens relationship	
<b>6. Other Factors</b>	6.1 Time to heal 6.2 Taking part in research	

### **6.2.1 Theme 1: Experience of healthcare provision**

Women were asked to elaborate on their experience of healthcare provision at the time of their miscarriage and since. What emerged were positive experiences and behaviours which participants described as helpful in their adjustment enhancing psychological wellbeing and negative experiences which were felt to hinder their adjustment, influencing psychological wellbeing in a detrimental way.

#### **Experience of Healthcare Provision - Positive experiences and behaviours**

Positive experiences and behaviours within the experience of healthcare provision theme were described by participants as helpful, resulting from a salutogenic perspective in compassionate care as an overarching category, which is important in enhancing psychological wellbeing.

##### **Compassionate Care**

###### ***Informed choice***

Participants in this study expressed that they felt informed about their choices in relation to their care whilst they were in the hospital, which was felt to be helpful.

Interview 8: "I liked the explanation of the choices that I had," (moderate but increasing wellbeing, anxiety and depression non-caseness).

###### ***Supportive and responsive care***

Participants with higher wellbeing were mainly satisfied, describing healthcare professionals as understanding, responsive and supportive, with ease of access to care described as helpful and important.

Interview 1: "They were just so friendly and understanding and asking if I was okay and there wasn't anything specific they said it was just, I just felt they were very nice to me. You know, if you needed them – they were there," (high wellbeing, anxiety and depression non-caseness).

Informational support when needed from healthcare professionals was valued, which women found helpful. Some participants also valued the opportunity for healthcare professionals to explain everything with their partner present, which may be particularly useful for women with lower psychological wellbeing.

## ***Sensitive care***

In this study, participants who felt they had received sensitive care from their healthcare providers, described how it left them feeling protected and comforted, and they tended to have higher wellbeing.

Interview 1: “one of them was holding my hand,” (high wellbeing, anxiety and depression non-caseness).

There was evidence of midwifery care that was sensitive and gentle, which participants described as being helpful and comforting within a trusting relationship, which may have been influential in enhancing wellbeing.

Interview 2: (during the scan) “She took ages, and she was just very gentle, and just saying, ‘I’m sorry, but it’s not good news’, and then she said ‘do you want to see the screen?’ And she showed me on the screen, and then we went through to the other room, and she just came through and sort of sat beside me, and she was just nice, just a lovely lady,” (increasing to high wellbeing, anxiety and depression non-caseness).

Providing woman-centred care by listening and responding to women’s views and respecting them as individuals was important. There was evidence that midwives were understanding and responsive in providing individualised care within a trusting relationship, and that continuity of carer was valued, which may be particularly important for women with lower wellbeing, (about the midwife).

Interview 6: “because you kind of get attached I think, even in that short period of time when you’re going through something and you’re so vulnerable and you’re so low anyway, you kind of latch on to that person, that someone don’t you that you kind of feel like, is going to be like, that understands you and just exactly, who’s sympathetic, doesn’t feel sorry for you but is sympathetic for what you’re kind of going through,” (low wellbeing, anxiety and depression non-caseness).

Healthcare professionals were sensitive and enabled the partner to stay with the participant, which was described as helpful.

Interview 8: “They were lovely and you know, (name of partner) could stay with me, and that was, that was really good,” (moderate but increasing wellbeing, anxiety and depression non-caseness).

Follow up support at the recurrent miscarriage clinic, was described as helpful.

Interview 2, “But I liked just knowing, because I think it was, I think, maybe three months after having the miscarriage that I’ve got the appointment, so just knowing that I was going to be going to this clinic, and there was going to be somebody there,” (increasing to high wellbeing, anxiety and depression non-caseness).

## **Experience of Healthcare Provision - Negative experiences**

Participants described some negative experiences of healthcare provision, which may have a detrimental effect and decrease psychological wellbeing, resulting in poor care provision within this theme as an overarching category.

### ***Poor Care Provision***

#### ***Lack of Follow up***

Poor care provision was mainly in relation to lack of follow up, resulting in concerns remaining unaddressed.

Interview 9: “I think I was more surprised, more than anything that there wasn’t any follow-up,” (increasing to high wellbeing, anxiety and depression non-caseness).

The lack of follow up means that some still struggle to make sense of what had happened over time, and those who are still struggling to understand may have lower psychological wellbeing.

Interview 6: “you don’t understand it, you really don’t understand it,” (low wellbeing, anxiety and depression non-caseness).

Participants expressed a desire for follow up support after discharge from hospital, describing the need for further support and information, alongside leaflets about miscarriage.

Interview 8: “the miscarriage leaflets, I don’t think they should be thrown out, I think that they’re a tool but they’re one tool that can be used in conjunction with others,” (moderate but increasing wellbeing, anxiety and depression non-caseness).

One participant described how information leaflets were not felt to be adequate and informative enough.

(About the leaflets) Interview 3: “they don’t really tell you a lot,” (high wellbeing, anxiety caseness and depression non-caseness).

Some participants searched for information about miscarriage using the internet, the quality of material accessed, however, was not always found to be helpful.

Interview 4: “we all google on the internet, which sometimes is your worst enemy, you sometimes get some really horrendous answers, and you just think, I wish I’d never googled it now,” (low wellbeing, anxiety caseness and depression non-caseness).

One participant described how the internet enables women who have been through the same experience to share their experiences; however this was not felt to be adequate, with a desire for support in the form of counselling or a support group.

Interview 3: “I think there should be like support groups, I think that’s what it lacks, I think because it would be handy to go to a meeting or counselling or something.....because I think there is really nothing,...so I think there could be a lot more done.” (high wellbeing, anxiety caseness and depression non-caseness).

Follow-up support once discharged was mainly absent, despite evidence of a need for professional support.

Interview 6: “I lost a lot of weight, like, through this. I didn’t sleep. So yeah, I think to do with the professional help, I think it needs to be kicked up a lot to be honest,” (low wellbeing, anxiety and depression non-caseness).

Whilst all participants would have liked follow up support, only one of the participants in this study recalls being offered follow up, and she had experienced the three miscarriages that resulted in a referral to the recurrent miscarriage clinic.

One participant with lower psychological wellbeing found miscarriage difficult and shocking at the time, which resulted in her not feeling able to ask questions whilst in hospital.

Interview 7: “I was too busy trying to take in what on earth had actually happened to be able to contemplate asking questions at that point because I was too busy thinking ‘Woah, woah woah. What are you telling me?’ I’ve lost the baby, you know, and I was obviously really upset and I just thought I actually probably wouldn’t have been able to ask her questions,” (low but increasing wellbeing, anxiety and depression non-caseness).

The offer of follow up support prior to discharge may be too soon for women, as the emotional distress experienced may make them unaware of their needs, unable to comprehend information and unable to make well informed decisions. The busyness of the ward also left participants feeling that the healthcare professionals who provided their care, would be too busy to supply follow up support, as they would be providing care to women who took their place, once they were discharged.



One participant described how she had wanted further support, but did not feel able to access it, as an anonymous person on the end of a phone was not what she felt would help.

Interview 8: “I didn’t feel strong enough to pick up the phone to a call centre, an anonymous person, to share my experience,” (moderate but increasing wellbeing, anxiety and depression non-caseness).

There were variances in this study in the type of support suggested, with one participant stating that the midwife was not the appropriate person to provide follow up support. However, another participant felt continuity of carer was important, as they would already have a relationship with the midwife after their hospital experience.

Interview 5: “one of the midwives at the hospital would have been better because they were the ones that I saw on the day of it,” (increasing wellbeing, anxiety and depression non-caseness).

The findings indicate that participants were aware of the busy-ness of the hospital ward setting, and the limited time that the healthcare professionals could spend with them. Women were unhappy with the lack of follow-up support describing situations in which they felt healthcare professionals failed to recognise the significance of miscarriage for women.

Interview 5: “but even just a follow up phone call or something,” (increasing wellbeing, anxiety and depression non-caseness).

Although miscarriage is a common event, it is often frightening and unexpected for women. All participants described miscarriage as an emotionally painful experience.

Interview 1: “I was numb, shocked and obviously just very upset,” (high wellbeing, anxiety and depression non-caseness).

Interview 6 “our whole world had just been turned upside down,” (low wellbeing, anxiety and depression non-caseness).

In this study, some participants described how they knew they were miscarrying, by the amount of pain and bleeding they were having, and how this had an emotional impact.

Interview 4: “you know in yourself by the pain and the amount of blood that you’re losing that you just think, yeah, this is a miscarriage, and it’s devastating when it all goes wrong,” (low wellbeing, anxiety caseness and depression non-caseness).

Indeed, the emotional burden was still evident 14 months later, as demonstrated in the following quotes:

Interview 2: “I went to the toilet and there was blood, and it was horrible. Oh, I’m sorry, I’m going to cry,” (increasing to high wellbeing, anxiety and depression non-caseness).

Interview 3: “There’s only so much heartache you can take, hopefully there is light at the end of the tunnel after all my losses,” (crying) (high wellbeing, anxiety caseness and depression non-caseness).

One woman suggested that her Significant Other was finding it difficult to cope with her distress, with a belief that lack of follow up support for her partner and herself played a part in their relationship breakdown.

Interview 6: “it must’ve been really difficult for him to see me going through what I was going through,” (low wellbeing, anxiety and depression non-caseness),

### **Insensitive Care**

Despite influential social policies that recommend woman-centred care that is sensitive to meet the needs of the individual woman (Scottish Government 2011), one participant felt she was not treated as an individual.

Interview 8: “I would have liked them to have said ‘we know you’re going to have different ways of dealing with this because everyone is different.’ I would’ve listened. I would’ve thought ‘Oh, you’re recognising something,’” (moderate but increasing wellbeing, anxiety and depression non-caseness).

One participant described how she felt the GP was not sensitive to her need for emotional support, resulting in her feeling unsupported.

Interview 8: “my experience with my GP immediately in the aftermath of my miscarriage was limited, he never offered any emotional support,” (moderate but increasing wellbeing, anxiety and depression non-caseness).

In this study, there was evidence that participants were dissatisfied with their healthcare provision experience, as it was not sensitive to their needs. For example, participants who were less satisfied with the healthcare environment described how being cared for next to labouring and newly delivered women was felt to be insensitive.

Interview 6: “Babies crying. I could hear them crying,” (low wellbeing, anxiety and depression non-caseness).

Interview 7: “I don’t think it’s separated enough for my liking,” (low but increasing wellbeing, anxiety and depression non-caseness).

Some participants described how informational support during the waiting period at home for a diagnosis of miscarriage was limited and the waiting time was the most difficult.

Interview 5: "So you have to wait another week and then get scanned again and sometimes you have to wait another week and then you get told one way or the other, so that's the hardest bit," (increasing wellbeing, anxiety and depression non-caseness).

One participant described how a healthcare professional did not use terminology that was sensitive for the individual woman, like '*fetus*', where for them it was '*a baby*', which may negatively impact on psychological wellbeing.

Interview 4: "they don't refer to it as a baby, which, I suppose, I don't know if that's right or wrong, but you know, to me, if it's got a heartbeat, that's a baby in there, you know. That's a living thing," (low wellbeing, anxiety caseness and depression non-caseness).

There was some evidence that participants felt that the emotional effects of miscarriage were not addressed, which may have left women with high anxiety, feeling unsupported and vulnerable.

Interview 8: "it was almost like the doctors, were scared to come in the room because of the emotional tidal wave, that's not what they deal with," (moderate but increasing wellbeing, anxiety and depression non-caseness).

One participant in this study described her dissatisfaction with and distress caused by miscommunication between services, whereby a community midwife had called her to discuss her antenatal appointment, not knowing they had experienced a miscarriage.

Interview 1: "I did get a call from a midwife locally to ask if I was still coming to my appointment and I was quite annoyed that there hadn't been communication between the ward and the local midwives and I had to ring back and tell her, I left a message, they're never there and they never called me back so I just assumed it was sorted at that point, but that made me angry and they didn't bother calling back after that," (high wellbeing, anxiety and depression non-caseness).

She went on to describe how she felt the midwives should have made contact with her to acknowledge that she had experienced a miscarriage, and to apologise for the phone call.

Participants felt that there should be a greater awareness of the impact of miscarriage amongst health professionals on women's health and the need for more sensitive healthcare provision.

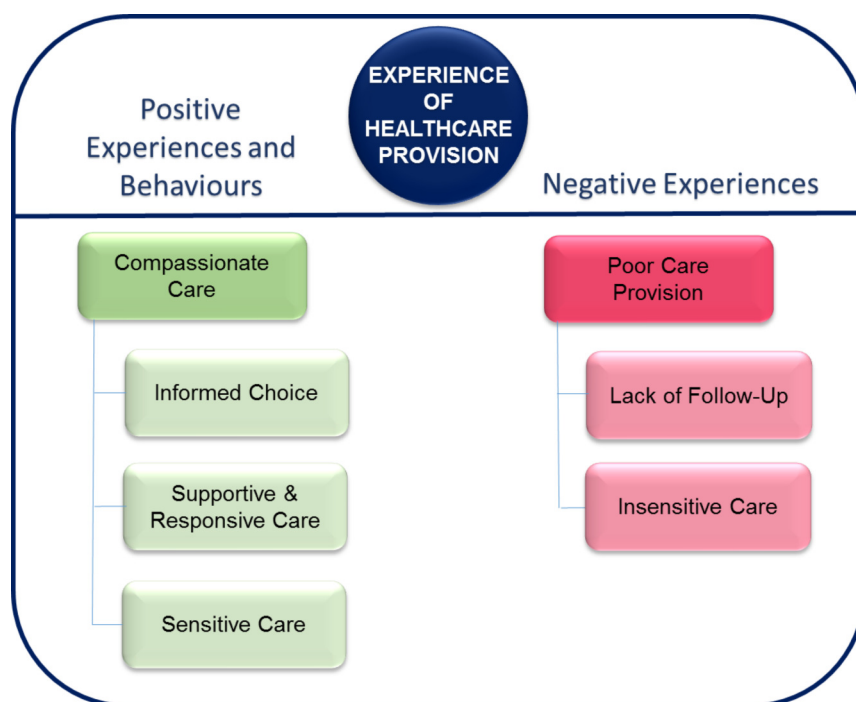
Interview 6: “I just kept thinking ‘that’s my baby, like, in a sick bowl.’ That’s what she had it in, it was like a sick bowl,” (low wellbeing, anxiety and depression non-caseness)

The opportunity to see their baby was considered an important choice but they found this idea very frightening and some wanted to avoid it.

Anxiety in the next pregnancy was evident, which did not seem to dissipate even in later pregnancy, leaving one participant fearful of childbirth and requesting an elective caesarean section. Care during booking in the next pregnancy needs to be more sensitive as there was evidence that midwives lack awareness of miscarriage, when women recall their miscarriage experience, which they may find unhelpful.

Interview 7: “Well it’s when they’re going through just the form and ‘Have you had a pregnancy?’ and I’m like ‘Well, yeah. I lost it.’ And they’re like ‘Oh, okay.’ And just filling it all in to the notes. And I just thought ‘Well, why do you not know that I’ve lost a baby?’” (low but increasing wellbeing, anxiety and depression non-caseness).

Figure 6.1 summarises the experience of healthcare provision theme, and the categories and sub-categories within it that influence women’s psychological wellbeing.



**Figure 6.1: Experience of Healthcare Provision Influences Psychological Wellbeing**

## **6.2.2 Theme 2: Health locus of control**

Women were asked to elaborate on their health and beliefs about what controls it. What emerged were positive experiences and behaviours within the health locus of control theme which were described as helpful, which enhance psychological wellbeing and negative experiences which were felt to hinder adjustment, with a detrimental effect on psychological wellbeing.

### **Health Locus of Control - Positive experiences and behaviours**

Positive experiences and behaviours within the health locus of control theme were described by participants as helpful, resulting from a salutogenic perspective in internal health locus of control as an overarching category, which is important in enhancing psychological wellbeing.

#### **Internal health locus of control**

##### **Being in Control**

Participants with an internal health locus of control may have enhanced psychological wellbeing.

Interview 9: "it's your body, you're the one who looks after it and controls what you put in it and what you do with it," (increasing to high wellbeing, anxiety and depression non-caseness).

However, some participants described how whilst they normally have an internal health locus of control, having a baby was felt to be out of their control.

Interview 9: "I like to be in control of things and you know, you totally are out of control when it comes to planning a baby, it's just kind of going to happen when it happens, I think," (increasing to high wellbeing, anxiety and depression non-caseness).

In this study, women who had an internal health locus of control also tended to have health information-seeking behaviours and employed task-focused coping styles. Some participants were proactive in seeking information in an attempt to search for causality, and took measures to enhance their health, for example some participants described how they maintained control by avoiding caffeine, achieving an optimum weight, had thyroid checks, took more exercise and slowed down, particularly in the work place, in an attempt to avoid stress.

## **Being proactive in seeking healthy behaviours**

Being able to control their health was something positive that they could do, which some thought was helpful.

Interview 1, “I was eating healthily, taking vitamins and doing exercise,” (high wellbeing, anxiety and depression non-caseness).

Taking control of the situation, whereby women are proactive in focusing on improving their health, may have the potential to enhance psychological wellbeing. This study indicated that miscarriage encouraged one woman to re-evaluate her beliefs about her health, as she adopted a healthier diet and took time off, suggesting a change from an external to more of an internal health locus of control.

Interview 8: “I eat vegetables from the garden and I give myself a weekend off, which I didn’t do before,” (before the miscarriage); (moderate but increasing wellbeing, anxiety and depression non-caseness).

One participant described how she had left her employment as she felt the environment at work was too stressful for her. Another described how she felt that she was overworking by doing two jobs, and she described how she decided to give up one of her jobs, as two jobs were too stressful.

Interview 4: “but I did say that I was overworking myself, when it came to the next pregnancy, I stopped the second job straight away, but I literally just did my full-time job, I didn’t do my bar work as well, because I thought, maybe I was burning myself out,” (low wellbeing, anxiety caseness and depression non-caseness).

## **Health Locus of Control - Negative experiences**

Negative experiences within the health locus of control theme were described by participants as unhelpful and have a detrimental effect on psychological wellbeing, resulting in an external health locus of control within this theme as an overarching category.

### **External Health Locus of Control**

#### ***Fate***

Participants with an external health locus of control and believed in fate tended to have lower wellbeing.

Interview 4: “I do believe in fate,” (low wellbeing, anxiety caseness and depression non-caseness).

Interview 8: “you’ve got to play the hand you’re dealt with and no matter how rubbish that hand is, they’re still your cards and you’ve got to play them to the best of your ability,” (moderate but increasing wellbeing, anxiety and depression non-caseness).

There was also evidence that healthcare professionals attempt to influence participant’s lifestyles by encouraging them to slow down, or eat healthier diets or achieve an optimal weight, but some may require more support to do this.

Interview 3: “then he told me (the doctor) not to be in a hurry, let my body take it’s time, but I’m not that person,” (high wellbeing, anxiety caseness and depression non-caseness).

Interview 4: “they say, ‘you shouldn’t drink, you shouldn’t be overweight’ but you only have to look on the maternity ward to see the kind of clientele, so I don’t see much truth in that,” (low wellbeing, anxiety caseness and depression non-caseness).

There was some evidence that the social support network of participants was also influential in encouraging either an internal or external health locus of control.

The health behaviours of the participant’s partner were not included in healthcare provision, as one participant described how she felt her partner was left not knowing how he could influence his health to reduce their chances of another miscarriage.

## **Powerful Others**

One participant described how she felt God was responsible for her miscarriage.

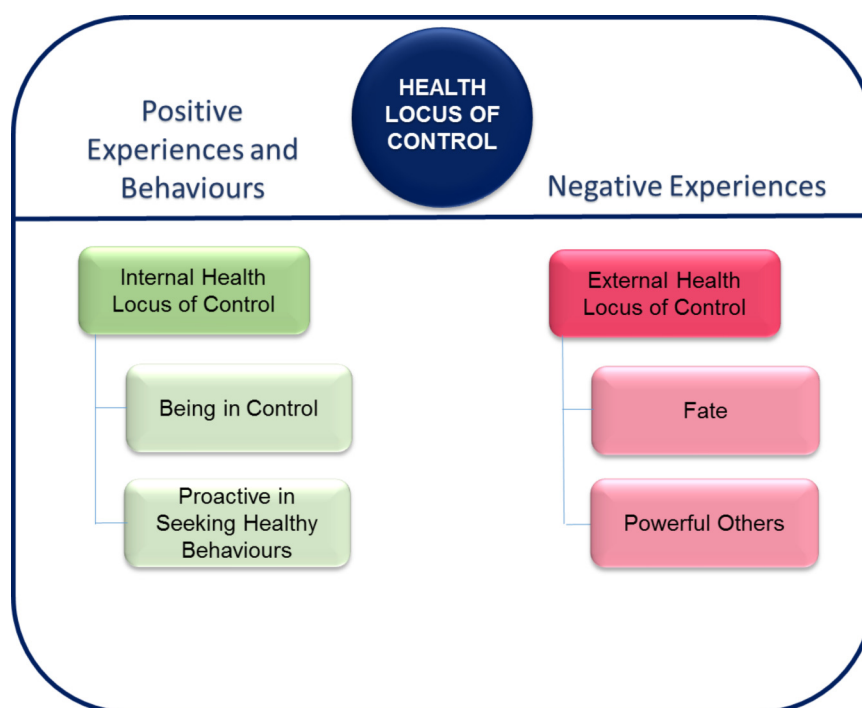
Interview 2: “I thought ‘why have you (GOD) done this in the first place?’” (increasing to high wellbeing, anxiety and depression non-caseness).

Miscarriage may be perceived as an experience representing diminished personal control. However, some participants with an external health locus of control also felt more helpless than those who had an internal health locus of control, and who were more proactive in seeking informational support.

Interview 4: “I literally don’t know what’s out there, because I was never told anything,” (low wellbeing, anxiety caseness and depression non-caseness).

One participant described how because of her unhealthy behaviours, she was more inclined to self-blame, in her search for causality, which may impact on psychological wellbeing

Figure 6.2 summarises the health locus of control theme, and the categories and sub-categories within it that influence women's psychological wellbeing.



**Figure 6.2: Health locus of control influences psychological wellbeing**

### 6.2.3 Theme 3: Social support

Participants were asked to elaborate on their social support network. What emerged were positive experiences and behaviours which enhance psychological wellbeing and negative experiences which were felt to hinder adjustment, influencing psychological wellbeing in a detrimental way.

#### **Social Support - Positive experiences and behaviours**

Positive experiences and behaviours within the social support theme were described by participants as helpful and may enhance psychological wellbeing, resulting from a salutogenic perspective in three overarching categories which are important in enhancing psychological wellbeing; Support from Significant Other, Family: Women's work and Friends: Women's work.

Social support played a vital part in women's ability to successfully adjust following miscarriage. In this study, being able to talk about their experiences of miscarriage amongst their social support network was viewed as beneficial.



Interview 7: "I just find talking about it makes it so much easier," (low but increasing wellbeing, anxiety and depression non-caseness).

### **Support from Significant Other**

Participants in this study believed that support from their Significant Other was very important.

#### ***Physical presence***

In terms of social support, participants spoke about their Significant Other and how it was important for them to be physically present.

Interview 2: "I phoned my husband and he came home from work,....he was absolutely there for me and supported me all the way," (increasing to high wellbeing, anxiety and depression non-caseness).

#### ***Emotional presence***

Whilst physical presence was important, emotional presence was also found to be important for enhanced psychological wellbeing. Participants, who were comforted when they shared their emotions with their Significant Other, had higher wellbeing.

Interview 1: "just generally holding me. I mean, when I cried and that kind of thing, he was brilliant, very supportive," (high wellbeing, anxiety and depression non-caseness).

However, one participant spoke about how she encouraged her husband to share his emotions, giving him permission to grieve for his loss, thus enabling emotional presence.

Interview 1, "we talked through a lot of stuff and I was like 'you can be upset as well', you're not going to make me any worse if you're upset, so you kind of have to make them come out," (men's feelings), (high wellbeing, anxiety and depression non-caseness).

One participant described how their Significant Other was protective, which helped her to see that he cared for her emotional wellbeing.

Interview 8: "He wrestled with telling me my friend was in the maternity ward across the way," (moderate but increasing wellbeing, anxiety and depression non-caseness).

#### ***Increases optimism***

Participants described how their Significant Other was influential in keeping them optimistic about their future, leaving them with a sense of hope.

Interview 9: (her partner said) “it’s just one of those things, chances are we will be fine,” (increasing to high wellbeing, anxiety and depression non-caseness).

One participant described how optimism was a joint endeavour, and was helpful in their plan for trying for a baby.

Interview 4: “we were very positive, we always said that we would never give up, we vowed we would stick together and we would get there in the end,” (low wellbeing, anxiety caseness and depression non-caseness).

### ***Reduces self-blame***

Participants sometimes described how their Significant Other was influential in their not blaming themselves for what had happened and how they kept them positive, which may enhance psychological wellbeing.

Interview 1: “just telling me that it would be okay and we would get a baby and not to blame myself,” (high wellbeing, anxiety and depression non-caseness).

### **Family: Women’s Work**

Female family members were also influential in supporting women following miscarriage, which may suggest that social support from family members is women’s work.

### ***Physical presence***

The woman’s family’s physical presence was viewed as physically comforting, and was viewed as supportive, which may enhance wellbeing.

Interview 3: “It’s just being there isn’t it?” (high wellbeing, anxiety caseness and depression non-caseness).

### ***Reduces Self-blame***

There was evidence that family members also try to reduce self-blame.

Interview 7: “I mean they were just, you know, trying to like, it wasn’t my fault, I hadn’t done anything wrong. It just wasn’t meant to be,” (low but increasing wellbeing, anxiety and depression non-caseness).

### ***Normalise the experience***

Women described how family members sometimes spoke about miscarriage as a common event, which helped them normalise the experience. One woman found that family members who acknowledged the loss, but did not dwell on it, as being helpful.

Interview 9: “didn’t dwell on the fact, so that was good,” (increasing to high wellbeing, anxiety and depression non-caseness).

### **Friends: Women’s Work**

In line with previous research (Conway and Russell 2000), women in this study received much of their support from friends, which may influence women’s psychological wellbeing.

### ***Shared Experience***

In this study, women found that sharing their experiences with friends who had personal experience of miscarriage was particularly supportive, as they understood how they felt and they were influential in increasing self-confidence and self-esteem. Being able to talk to women who understand that miscarriage is difficult, and difficult feelings are a normal part of the grieving process, was found to be helpful. This suggests that direct personal experience may promote more sensitive support through their greater understanding of the emotional impact.

Interview 1: “my friends were very supportive, they’ve both had miscarriages themselves in the past so they actually were really helpful and just told me not to worry, because I kept saying I felt useless and they were saying I wasn’t useless,” (high wellbeing, anxiety and depression non-caseness).

Being able to talk about miscarriage may help in enhancing the shared experience, thereby increasing social support and this may impact positively on psychological wellbeing. Women who feel they can talk about miscarriage amongst their friends are more able to access social support from friends who had shared that experience.

Interview 1, “twelve people sat round a table and out of twelve of you finding about eight had had a miscarriage, if not more,” (high wellbeing, anxiety and depression non-caseness).

Interview 7: “I feed off support that I get from other people. I don’t think I’d cope with it myself,” (low but increasing wellbeing, anxiety and depression non-caseness).

There was evidence of enhanced social support amongst work colleagues and the shared experience.

Interview 2: “when I came back to work everybody was lovely, and out of, I think there was maybe, twenty staff, about five of them came up and said ‘I’ve had a miscarriage as well,’” (increasing to high wellbeing, anxiety and depression non-caseness).

### ***Emotional Presence***

The theme of 'Friends: Women's work' included the importance of emotional presence amongst friends and they described how this provided great comfort, which may have enhanced their psychological wellbeing. Women described how their shared experience of miscarriage with friends, brought back their friends' emotions too, which may have validated the emotional impact of miscarriage, as they used an emotional focused coping style together, thus strengthening relationships.

Interview 2: "she had really experience of the same sort of thing, we even became stronger friends through it, just being able to talk about things, but it kind of brought back all her emotions as well," (increasing to high wellbeing, anxiety and depression non-caseness).

### ***Physical Presence***

'Friends: Women's work' included the importance of friends physical presence, which may influence psychological wellbeing.

Interview 3: "I have everyone there if I want to speak to them," (high wellbeing, anxiety caseness and depression non-caseness).

### ***Increases Task Focused Coping***

Friends: Women's work included friends who help women stay optimistic and encouraged task focused coping styles. Doing activities together and planning future social events provided opportunities to talk about their experiences.

Interview 1: "She made me do stuff and kept me positive," (high wellbeing, anxiety and depression non-caseness).

Participants described how their friends were caring and protective. This suggests that the quality of friendship support is important in enhancing women's confidence, knowing that someone who cares, and is able to provide assistance to help them to cope with miscarriage, enhancing their psychological wellbeing.

### ***Reduces Self-blame***

Friends: Women's work includes friends who are influential in reducing self-blame, which may enhance psychological wellbeing. There was evidence that friends increase self-esteem and keep you optimistic about future chances of another pregnancy.

Interview 1: “saying I wasn’t useless, you know, I would get pregnant again,” (high wellbeing, anxiety and depression non-caseness).

### ***Normalise experience***

Many women described how friends said that miscarriage was common, which may have normalised their experience, which in turn helps them to cope, enhancing psychological wellbeing. There was evidence that some women were not aware of how common it was, until they had a miscarriage.

Interview 1: “I’d be quite honest that it’d happened and it’s quite bizarre when you say it a lot of women are like ‘I did too.’ And I think you’d be hard pushed to find a woman at the toddler’s group that hasn’t had a miscarriage. They’re definitely in the minority which is something that really surprised me because I think nearly everybody had had one,” (high wellbeing, anxiety and depression non-caseness).

### **Social Support - Negative experience**

Negative experiences within the social support theme were described by participants as unhelpful and have a detrimental effect on psychological wellbeing, resulting in lack of support from their Significant Other, Family and Friends as overarching categories.

#### **Lack of support from Significant Other**

##### ***Lack of physical presence***

One woman with low wellbeing, whose husband was working away at the time of the miscarriage, felt unsupported by her Significant Other, and found his lack of physical presence made the experience more difficult.

Interview 6: “But when you’re actually having a miscarriage yourself you don’t understand like how hard and difficult that it actually is. Like really, really difficult. I just felt ‘You should be here,’ Even if we didn’t say anything,” (low wellbeing, anxiety and depression non-caseness).

This participant also described how she thought he was not aware that she needed him, and she felt unable to tell him about her need for his physical presence.

### ***Lack of emotional presence***

One participant, who did not talk with her Significant Other about miscarriage and was unable to express her emotions with him, described how she felt isolated and this left her feeling like she had failed him.

Interview 6: “we didn’t really talk about it. I felt abandoned by him. I felt lonely. I felt like I failed him,” (low wellbeing, anxiety and depression non-caseness).

In this study, women described how men failed to share their feelings with them, with many believing this was done not only to protect them, but also to allow the focus of attention to be on the woman.

Interview 4: “he was upset, but he’s very good at hiding his – not hiding his feelings but putting his feelings aside and worrying about me,” (low wellbeing, anxiety caseness and depression non-caseness).

One participant described how she felt her Significant Other was not able to show his emotions because his feelings were not felt to be as important as her feelings. She also comments that this makes it harder for them, because they cannot express how upset they feel.

Interview 3: “he never likes to show his emotions, like a typical bloke, because he thinks his feelings like don’t matter, so I think it’s harder for the men,” (high wellbeing, anxiety caseness and depression non-caseness).

However, there was evidence that for one woman with low wellbeing and high anxiety levels, her feelings of self-blame were so strong, that her Significant Other felt anxious himself, as he was unable to reduce her self-blame.

Interview 4: “he used to get a bit stressed out with me, because I would focus most of the time on blaming myself, because I felt like I was letting him down, he’s done his bit, it’s my body that doesn’t want to carry,” (low wellbeing, anxiety caseness and depression non-caseness).

Women with lower wellbeing and higher anxiety, therefore, may require professional support to reduce self-blame. In addition, their partners may need support too, and as they are often the main supporter, it may be beneficial to ensure their Significant Other feels there is someone to turn to if they are feeling out of their depth.

### ***His needs unmet***

Participants describe how their Significant Other was also emotionally affected by the loss, but was not in a position to express his emotions.

Interview 7: “he was devastated but he didn’t show it at all because he was being strong for me and he never really spoke much about it and how he was feeling. He just let me be the main focus of everything,” (low but increasing wellbeing, anxiety and depression non-caseness).

One participant described how her Significant Other lacked informational support during their hospital stay, leaving him with unanswered questions, which may have meant that he found it more difficult to support his vulnerable partner.

Interview 8: “You are so vulnerable. Your husband is going crazy, climbing the walls. They want answers, they have questions,” (moderate but increasing wellbeing, anxiety and depression non-caseness).

One participant described how she felt her partners’ health was affected, which was apparent in the next pregnancy.

Interview 2, “this has affected my husband more than anything, he couldn’t come into the scans when I was pregnant with him (subsequent child), he was shaking, he couldn’t speak properly, he’d got himself into such a state,” (increasing to high wellbeing, anxiety and depression non-caseness).

One woman described how her Significant Other was less likely to speak to his friends about miscarriage, which suggests there may be a silence amongst men following miscarriage.

Interview 2: “I don’t think he spoke to any of his friends or anything about it,” (increasing to high wellbeing, anxiety and depression non-caseness).

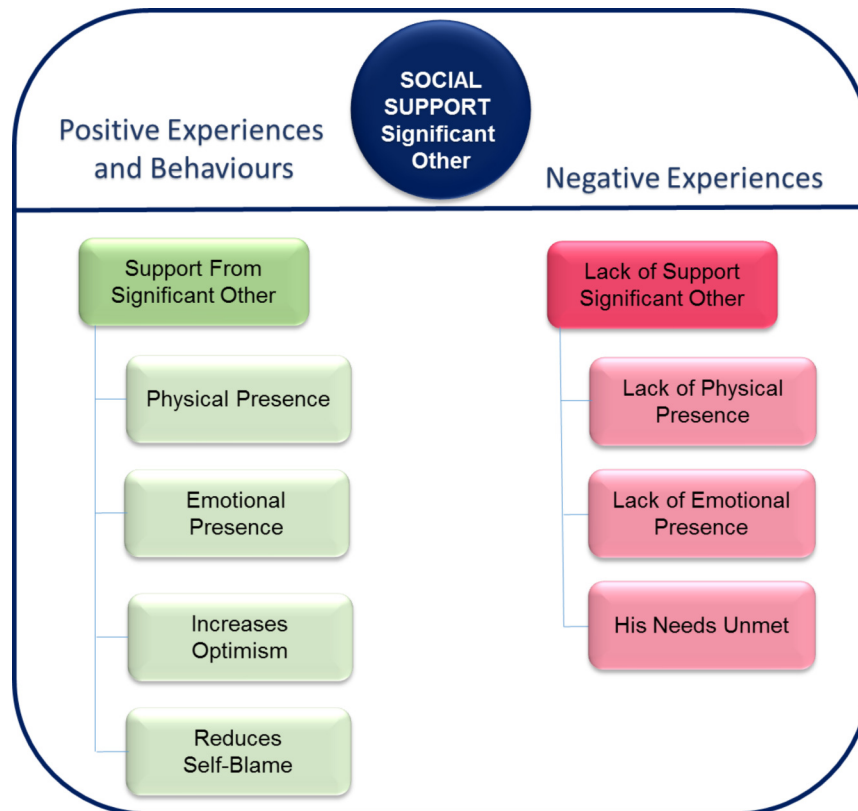
Participants described how distressed their Significant Other was; with evidence that they felt their Significant Other was not always sure how to help.

Interview 2: “but I think he kind of didn’t know what to do,” (increasing to high wellbeing, anxiety and depression non-caseness).

In this study, the way their Significant Other coped with the miscarriage had a profound influence on women’s own ability to come to terms with the loss. This highlights the need for greater follow up support for both women and their partners, especially for women with lower

psychological wellbeing, to assist their partner in their role as an important source of social support.

Figure 6.3a summarises the social support Significant Other theme, and the categories and sub-categories within it that influence women's psychological wellbeing.



**Figure 6.3a: Significant Other influences psychological wellbeing**

### **Lack of support from Family**

#### ***Lack awareness***

Personal experience amongst family members may not be as influential as friends who have personal experience of miscarriage, suggesting that peer support maybe more influential in enhancing psychological wellbeing than family.

Interview 2: "she had gone through miscarriages, but she had no understanding whatsoever of what this actually meant to me," (increasing to high wellbeing, anxiety and depression non-caseness)

However, one woman with lower wellbeing indicated that her family lacked understanding as they did not have personal experience of miscarriage, which may mean they are unable to help them understand that their feelings are not 'abnormal'.



Interview 6, “My mum was, ‘you know you can talk to me about anything?’ and yeah, I mean I did speak to my mum a lot about it and how I was feeling but like everyone says, you don’t understand it until you go through it. That’s the reality; nobody will ever, ever understand it,” (low wellbeing, anxiety and depression non-caseness).

One woman with low wellbeing and high anxiety described how her mother lacked insight into her distress, and how what her mother said in a text (suggesting a lack of physical presence), was inadequate and not what she wanted to hear. Lack of physical presence may mean that family members are not able to see how the woman is emotionally affected by miscarriage, and say inappropriate things, which may decrease psychological wellbeing.

Interview 4: “My mum sort of said in a text, you know, that it would happen one day, you know, and again, you and X are going to make great parents one day and all that, but at the time, you just think, well, that’s not really what I want to hear, the last thing you want to hear,” (low wellbeing, anxiety caseness and depression non-caseness).

One woman described that older family members may find talking about miscarriage more difficult, as if it is a taboo subject, resulting in a lack of support.

Interview 1: “It just wasn’t something they spoke about so my mum found it much more difficult,” (high wellbeing, anxiety and depression non-caseness).

It was also suggested by one participant that having a baby was a difficult struggle, and that older generations within the family social support network are not always as understanding as they should be.

Interview 5: “but they don’t realise the process that you go through to try and have that family,” (increasing wellbeing, anxiety and depression non-caseness).

### ***It’s their loss too***

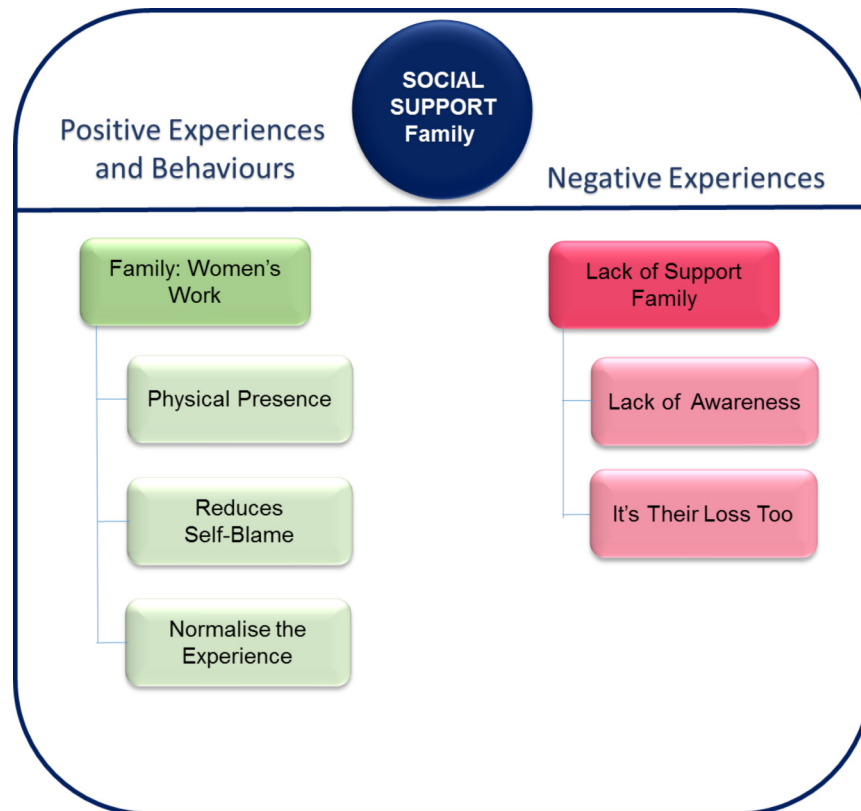
There was evidence that supporting parents were also emotionally affected by miscarriage, demonstrating that it is their loss too.

Interview 9: “she was upset as well so seeing her upset made me more upset I think because it’s like, obviously their first grandchild,” (increasing to high wellbeing, anxiety and depression non-caseness).

The emotional impact on family members may affect their ability to support women, leaving women feeling emotionally isolated. One participant described how they felt there wasn’t anyone there for her to express her emotions to,

Interview 6: “even just to have somebody to cry to, I mean, I cried on my own a lot,” (low wellbeing, anxiety and depression non-caseness).

Figure 6.3b summarises the social support Family theme, and the categories and sub-categories within it that influence women’s psychological wellbeing.



**Figure 6.3b: Family influence psychological wellbeing**

### **Lack of support from Friends**

#### ***Lack awareness***

Women felt that friends who had no personal experience of miscarriage were not as understanding, and they described how they did not know what to say to make things easier to help them cope with the experience. Amongst friends without personal experience of miscarriage, there was a sense of silence, whereby there was a reluctance to talk about miscarriage. They were not as helpful as women who had personal experience of miscarriage, and were less easy to listen to.

Interview 6: “if they haven’t been through it, they don’t know what to say, they don’t know how to act around you,” (low wellbeing, anxiety and depression non-caseness).

Interview 7: “whereas if someone hasn’t experienced it, it’s not as easy to listen to them as much,” (low but increasing wellbeing, anxiety and depression non-caseness).

One participant described how she felt less able to talk about miscarriage amongst her friends for fear of losing them as friends.

Interview 5: “you don’t say ‘Oh actually I had a miscarriage six months ago’, they wouldn’t want to speak to you after that,” (increasing wellbeing, anxiety and depression non-caseness).

However, there were variances around who women talk to, for example not everyone wanted to tell work colleagues about their miscarriage.

Interview 8: “My work colleagues don’t know. Not even my direct line manager knows. I didn’t want to share that, I hid behind a smokescreen of high blood pressure. I didn’t expand,” (moderate but increasing wellbeing, anxiety and depression non-caseness).

One participant described how her reason for not wishing to share her miscarriage with work colleagues, was because she felt she would get too upset, and she did not wish to cry in front of her work colleagues.

Interestingly these quotes illustrate that miscarriage is not spoken about, as others do not share their own experience of miscarriage, until women reveal to them that they have experienced a miscarriage.

### ***Lack of physical presence***

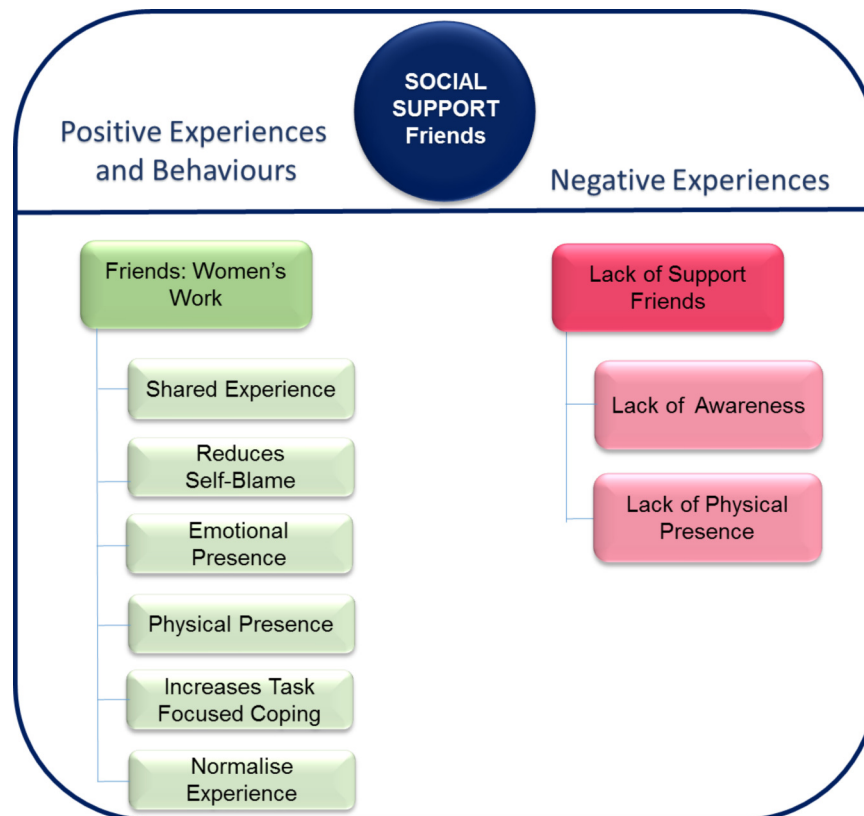
Indeed, one participant described how her friends would send text messages or phone; however these may not be as beneficial as physical presence, as the friend cannot visualise the woman’s body language or see how upset she was, and this may negatively influence wellbeing levels.

Interview 6: “Emm, we did a lot of text messaging and things like that but again what can she say? It’s like when somebody dies, isn’t it? Like, a person dies and you’re just like ‘I’m really sorry’ and then that’s it. It’s a bit like that, like people don’t know what to say or ‘How are you?’, ‘Well, what do you think? That’s a silly question, how do you think I am?’ kind of thing you know, and she was the same, even though me and her have been mates for years and years and years it’s just that something like ‘oh well I’m not sure if I’d say the right thing’ or ‘I’m not quite sure what to say to make her better’ or, you know, things like that. That’s the big problem about it, is that people just don’t know what

to say if they haven't been through it, they don't know what to say," (low wellbeing, anxiety and depression non-caseness).

Friends do not always know what to say, especially when they have no personal experience of miscarriage, so texting maybe easier and more controlled for them.

Figure 6.3c summarises the social support Friends theme, and the categories and sub-categories within it that influence women's psychological wellbeing.



**Figure 6.3c: Friends influence psychological wellbeing**

#### **6.2.4 Theme 4: Coping styles**

Participants were asked to elaborate on their coping strategies that they used at the time and since their miscarriage. What emerged were positive experiences and behaviours which were described as helpful, enhancing psychological wellbeing and negative experiences which were felt to hinder adjustment, influencing psychological wellbeing in a detrimental way.

##### **Coping Styles - Positive experiences and behaviours**

There was no 'universal' coping style response to miscarriage in the study, as women used a diverse variety of coping styles to help them enhance their psychological wellbeing. Positive experiences and behaviours within the coping style theme were described by participants as

helpful and may enhance psychological wellbeing, resulting from a salutogenic perspective in two overarching categories which are important in enhancing psychological wellbeing; emotion focused coping, whereby women share their emotions with their social support network; and task focused coping, including searching for information, planning and positively reappraising the situation and seeking out social support as overarching categories within this theme.

### **Emotion focused coping**

In this study, participants used different coping styles, with many describing emotion focused coping as comforting and stress relieving.

Interview 3: "She was comforting me and I was bubbling away and I was bosieing into her," (high wellbeing, anxiety caseness and depression non-caseness).

### **Task focused coping**

Participants who employed task focused coping; whereby they actively seek out a plan of action in an attempt to cope with their miscarriage experience, tended to have higher wellbeing.

Interview 9: "I just set myself that deadline (to try and get pregnant again) to work towards," (increasing to high wellbeing, anxiety and depression non-caseness).

A task focused coping style also meant that some had an internal health locus of control and were proactive in planning for example, planning a future pregnancy, with powerful others influential in providing evidence of a possible cause for the miscarriage, which may enhance wellbeing.

Interview 9: "I went to my GP again, and they agreed to blood tests, and I found out then that I had an underactive thyroid," (increasing to high wellbeing, anxiety and depression non-caseness).

There was evidence that a visit to their Doctor was helpful in providing informational support, thereby reducing self-blame. One woman, who was proactive in the next pregnancy and described how she actively sought out an ultrasound scan, using a task focused coping style, described how she felt this helped her to relax more, thinking that early confirmation of pregnancy would reassure her and enhance her wellbeing.

Interview 1: "I asked him (GP) if I could have an early scan and I was told 'no I didn't need one', so I ummm, we booked one privately," (high wellbeing, anxiety and depression non-caseness).

One participant described how having a kitten, and the task of caring for her pet helped her to focus on caring for him in place of her baby, which was felt to help in her adjustment.

Interview 6: “we got him when he was six weeks old and he wasn’t weaned, he wasn’t anything so yeah, we literally had to sit and feed him by syringe for a good few weeks so to me that was my baby. Do you know what I mean? I was still having to feed him and bring him up and look after him and take care of him and yeah, obviously yeah, he kind of got me through quite a lot I think as well.” (low wellbeing, anxiety and depression non-caseness).

### **Coping Styles - Negative experiences**

Negative experiences within the coping style theme were described by participants as unhelpful and have a detrimental effect on psychological wellbeing. Some women used an avoidant style coping, for example keeping busy so that they avoided talking or thinking about miscarriage, whilst others cope by blaming themselves for the miscarriage. This resulted in self-blame and avoidant focused coping as overarching categories within this theme.

#### ***Self-blame***

In this study, participants described how it was important for them to have an explanation as to why the miscarriage had happened, however some were searching for understanding. Knowing which life style behaviours are more likely to influence the likelihood of miscarriage, may result in feelings of self-blame, influencing psychological wellbeing. One participant stated that knowing that her diet was poor may increase the likelihood of self-blame.

Interview 7: “that’s why I think you blame yourself for losing the baby because you think it’s something you’ve done or not done. Because I’ve got a really bad diet. I’m not a very healthy eater by any stretch of the imagination. But that’s one of the reasons you think ‘Oh my god, I didn’t eat enough proper food,’” (low but increasing wellbeing, anxiety and depression non-caseness).

One woman with low wellbeing and high anxiety, who self-blamed, also questioned her reproductive ability.

Interview 4: “I was convinced I was going to have problems having babies,” (low wellbeing, anxiety caseness and depression non-caseness).

Women who were still searching for a cause, tended to have lower wellbeing.

Interview 7: “maybe something would have been wrong with the baby,” (low but increasing wellbeing, anxiety and depression non-caseness).

One participant recognised pregnancy as a complex process that is likely to go wrong at times.

Interview 9: “if you think of everything that’s got to happen in the body to make a baby, of course things go wrong,” (increasing to high wellbeing, anxiety and depression non-caseness).

### ***Avoidant Focused Coping***

Participants sometimes used an avoidant coping style as a protective mechanism, describing how they wanted to avoid pregnant women and babies, and suggested that they had a heightened awareness, noticing pregnant women and women with babies more after their miscarriage.

Women who found it more difficult to express their emotions with friends, and avoided expressing emotions amongst friends, tended to have lower wellbeing.

Interview 6: “I mean, you don’t want to put all these feelings and emotions on your friends, do you know what I mean?” (low wellbeing, anxiety and depression non-caseness).

One woman, who avoided talking to her friends about her miscarriage, had lower wellbeing, despite her knowing that it would be good for her to talk.

Interview 7: “maybe the support group is the way to go because more people would feel more open about talking about it,” (low but increasing wellbeing, anxiety and depression non-caseness).

One participant with low wellbeing described how she adopted an avoidant coping style, whereby she avoided going out.

Interview 6: “I hid myself in the house, literally. I just didn’t want to go out,” (low wellbeing, anxiety and depression non-caseness).

This participant also avoided any treatment for her miscarriage, resulting in a 4 week wait until bleeding started naturally, with evidence to suggest that she was struggling to come to terms with that fact that she had actually experienced a miscarriage.

Interview 6: “I remember saying to people that ‘I just want to get so drunk but I can’t because to me, I’m still carrying my baby,” (low wellbeing, anxiety and depression non-caseness).

Some participants described how they avoided talking about it because it would be too emotionally painful. Some women in their next pregnancy spoke about how they avoided thinking about the pregnancy as a potential baby, in case it happened again. One participant described how she wanted to avoid an early scan in the next pregnancy, in order to see her pregnancy at a later stage, giving her confidence in a greater chance of establishing viability, rather than see something that may result in a heavy period, and then having to think about it as another miscarriage.

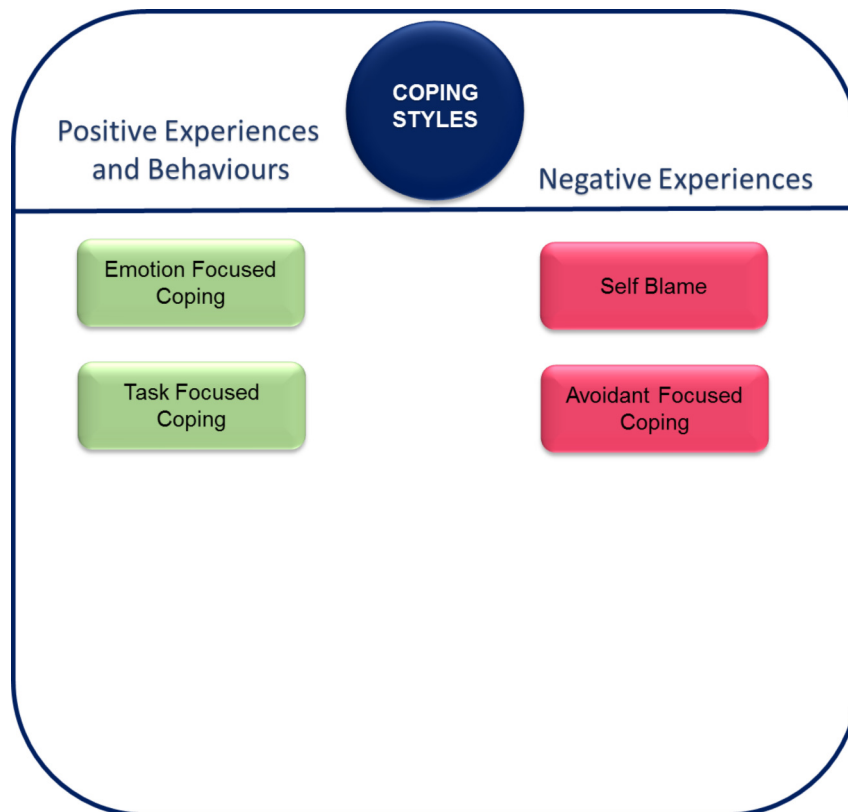
Interview 9 “well you know it could go either way again, I think I would rather have got further along and they’ll be able to, you know have a better idea, if this is good or not,” (increasing to high wellbeing, anxiety and depression non-caseness).

Generally, participants with higher wellbeing knew it was better for them not to use an avoidant focused coping style, and women who avoided talking to others tended to have lower wellbeing and higher anxiety.

Interview 4: “you don’t want to hinder people with your own problems,” (low wellbeing, anxiety caseness and depression non-caseness).

Figure 6.4 summarises the coping styles theme, and the categories and sub-categories within it that influence women’s psychological wellbeing.





**Figure 6.4: Coping styles influence psychological wellbeing**

### 6.2.5 Theme 5: Resilience

Participants were asked to elaborate on what gave them strength to influence their ability to adjust and bounce back after their miscarriage. What emerged were positive experiences and behaviours within the resilience theme which participants described as helpful, enhancing psychological wellbeing.

#### **Resilience - Positive experiences and behaviours**

Positive experiences and behaviours within the resilience theme were described by participants as helpful and enhance psychological wellbeing, resulting from a salutogenic perspective in four overarching categories; acceptance facilitates personal growth, stress reduction increases strength, catalyst for personal growth and new perspective strengthens relationship for this theme.

#### ***Acceptance facilitates personal growth***

Participants described a need for positive steps to help them come to terms with their loss, something in acknowledgement of their loss and having a memorial to say goodbye to the baby they had lost through miscarriage.

Interview 6: "I blew up some balloons and just wrote on them like stuff and just let them go out the back, like that was my kind of way of like, saying, like 'I know you should've been here but you're not,'" (low wellbeing, anxiety and depression non-caseness).

Interview 3: "I still think there should be like a, I don't know, a memorial thing or something," (high wellbeing, anxiety caseness and depression non-caseness).

Care should be taken to do what is right for the individual woman, as not all will want to acknowledge their loss in this way.

Participants valued empathic social support, which often strengthened their self-esteem and increased their optimism about the future. Optimism was a key cognitive strategy that women's social support network such as their Significant Other, Family and Friends use, which may influence how women build resilience to adjust following miscarriage. One woman who felt she had left it too late in life to have children, focused on other positives in her life and avoided counterfactual thinking, which may have increased her ability to cope.

Interview 8: "There's a lot of other things that are really good in my life and I have to concentrate on the positives and not look at what might have been," (moderate but increasing wellbeing, anxiety and depression non-caseness).

Women often describe how they felt it was important to remain positive and how it was helpful to remain hopeful, which may enhance wellbeing.

Interview 2, "there's always hope, people do have children after they've had miscarriages," (increasing to high wellbeing, anxiety and depression non-caseness).

One woman who was less optimistic, also had lower wellbeing and higher anxiety, and the woman's family attempted to help her adopt more of a positive outlook.

Interview 4: "she gave me a cuddle when she arrived and sort of said, 'you know, you'll get there eventually,' she said. 'it will happen for you', and it's almost like they try to give you that little bit of hope, just to keep you going, but you start thinking, well if this is going to happen every time, how many times can I go through this? It's upsetting, you know, because it's absolutely emotionally draining," (low wellbeing, anxiety caseness and depression non-caseness).

### ***Reducing stress increases strength***

Participants described some common processes in their trajectories over time, including self-awareness of stress as a negative emotion. A proactive approach, in which women recognise stress as a negative emotion and take action before it becomes an issue, was a protective self-management strategy, as described in the health locus of control construct.

There was evidence that some participants could see their own strength, and this was helpful in developing one's own resilience, which for one participant meant giving support to her partner as adding to resilience, not just in receiving support.

Interview 1: "I think he found it difficult at first because he didn't want to be upset himself because he didn't want to upset me but then we do talk, we've talked through a lot of stuff, so we did in the end just talk it through," (high wellbeing, anxiety and depression non-caseness).

Doing something positive may reduce stress, and helping others was felt to be a positive action, which may enhance psychological wellbeing.

### ***Catalyst for personal growth***

The experience of resilience appeared complex. Participants described strategies which offered emotional comfort, hope and empowerment.

Hope was important for enhanced psychological wellbeing, as participants accept what is lost and cannot be changed, and direct efforts towards seizing opportunities to regain hope as a strategy for personal growth and for future possibilities. One participant thought it was important for her and her partner to grieve together, that way she would know that he was also going through exactly what she was going through, which was important for her to know. She described how having a miscarriage was a catalyst for personal growth as a couple, where it strengthened their relationship and where they actually became more grateful for what they had.

Participants showed resilience in terms of getting on with their lives, and that their miscarriage would not be forgotten, but was something to move on from, whilst retaining a positive outlook.

Interview 5 "I had to get back to normal because physically I was fine. You just think about it now and again. I guess that the positive thing out of having a miscarriage is that you know you can fall pregnant which is, in some cases for people, they can't even get that to that stage," (increasing wellbeing, anxiety and depression non-caseness).

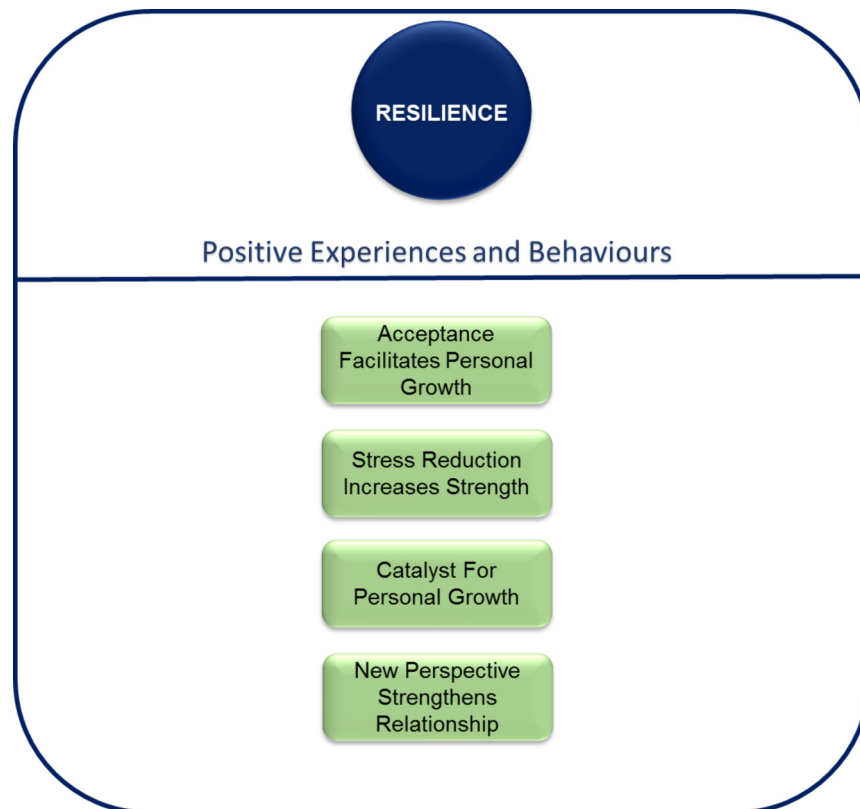
## New perspective strengthens relationship

One participant felt that although the experience was difficult, it helped her to realise how much she was loved, which gave her a new perspective and she felt this strengthened their relationship.

Interview 4: “But we vowed we’d stick together and we would get there in the end. I would definitely say that it’s made myself and (name of partner) stronger as a couple,” (low wellbeing, anxiety caseness and depression non-caseness).

A strong relationship with their Significant Other was protective and enhanced psychological wellbeing over time.

Figure 6.5 summarises the resilience theme, and the categories within it that influence women’s psychological wellbeing.



**Figure 6.5: Resilience influences psychological wellbeing**

### 6.2.6 Theme 6: Other Factors

Participants were asked to elaborate on what else they felt may have helped their adjustment after their miscarriage. What emerged were positive experiences which participants described as helpful in enhancing psychological wellbeing.

### ***Other Factors - Positive experiences***

Positive experiences within the other factors theme were described as helpful and may enhance psychological wellbeing, resulting from a salutogenic perspective in two overarching categories; time to heal and taking part in research within this theme.

#### ***Time to heal***

Participants in this study described how time was a healing factor. One participant described how she felt more able to talk and share her experience of miscarriage without getting upset, with the passing of time.

Interview 9: "I can speak about it now and I don't get upset," (increasing to high wellbeing, anxiety and depression non-caseness).

One participant with lower wellbeing described how she felt it had taken her longer than she had expected to adjust.

Interview 6: "Time is a healer but I think it is has taken longer than what I ever expected," (low wellbeing, anxiety and depression non-caseness).

There was evidence to suggest that time is an important factor in reducing self-blame for some women, which may have enhanced wellbeing.

#### ***Taking Part in Research***

The therapeutic effect of taking part in the research was evident in this study.

Interview 8: "The research questions, I dunno, they really made me think about what I'd gone through and I think that helped, I would say that's probably been one of the key things in my way of dealing with it," (moderate but increasing wellbeing, anxiety and depression non-caseness).

One participant described how completing the questionnaires helped her to see how she was coping.

Interview 9, "I think it was helpful to be like, oh I'm actually coping with things," (increasing to high wellbeing, anxiety and depression non-caseness).

One participant described how taking part in the research meant she felt useful as she was helping others with the same experience.

Interview 8: “taking part in the research, I felt quite strongly that I wanted to help other people who had gone through this,” (moderate but increasing wellbeing, anxiety and depression non-caseness).

In addition, one participant suggested that being asked questions was a form of follow up for them, and how she felt everyone should have access to this type of support.

Interview 7: “I actually found that me doing the questionnaire helped me, because it was asking me questions that I felt like maybe someone should be doing that for everyone,” (low but increasing wellbeing, anxiety and depression non-caseness).

One participant described being able to see positive responses whilst completing the questionnaires, which she described as being supportive, as she was able to see that she was coping well.

Interview 9: “I was still kind of answering truthfully and I could see how positive I was feeling about it and how I didn’t, I don’t think I felt like too negative about things so, I think that was helpful to be like, oh, I’m actually coping with things and you know, it’s okay,” (increasing to high wellbeing, anxiety and depression non-caseness).

Some participants described how taking part in the research, allowed them to discuss their feelings, demonstrating that taking part in research may have a therapeutic effect.

Interview 7: “I was in floods of tears filling it in and stuff but it was, it was nice because I thought ‘someone’s actually interested in me,’” (low but increasing wellbeing, anxiety and depression non-caseness).

One participant suggested that the questions asked in the questionnaires, enabled her to express her emotions, and how the research validated miscarriage as an important issue.

Interview 7: I went upstairs to the bedroom, yeah, I spoke to (name of partner) and I said ‘Right I’m away to do this questionnaire’ and I went and took it upstairs and just sat on my own and just did it myself and ..... I found it really helpful,” (low but increasing wellbeing, anxiety and depression non-caseness).

Figure 6.6 summarises the other factors theme, and the categories within it that influence women’s psychological wellbeing.



**Figure 6.6: Other factors influence psychological wellbeing**

### **6.3 Discussion of Phase 2**

Phase 2, the qualitative study, explored the protective factors that predict lower anxiety, depression and higher wellbeing from Phase 1, to further understand how women enhance health and wellbeing following miscarriage. In total, six themes emerged from the data which participants described as helpful or unhelpful, influencing psychological wellbeing.

#### **6.3.1 Theme 1: Experience of healthcare provision**

It was clear that women want compassionate care from health care providers who not only support women but also their partners. Healthcare that is individualised, genuinely empathic and supportive, whereby staff are compassionate and sensitive, provide clear explanations and information in both written and verbal form, has been highlighted as important for participants, which may enhance psychological wellbeing. Previous studies confirm these findings (Stratton and Lloyd 2008). High quality communication between healthcare professionals, women and their families, must be central to the provision of excellent maternity care (Scottish Government 2011). Informed choice in relation to their care whilst in hospital, in line with The Code (NMC 2015), was described as helpful. Participants in this study valued effective, informative communication which is individualised, responsive and person-centred.

Participants describe that healthcare professionals need to be more aware of the impact on women's psychological wellbeing. The importance of a midwife who is there for them, for informational and emotional support was valued by participants. Clearly the hospital experience was important in influencing women's experiences of care, in line with previous studies (Murphy and Merrell 2009).

Follow-up was helpful and wanted, confirming previous research findings (Jackman, McGee and Turner 1991). Indeed, a lack of follow up left participants feeling isolated and vulnerable. It is clearly needed by some, to help clarify misunderstandings and for informational support, especially for those that feel they were personally responsible for the miscarriage. Many of the reasons given by women for dissatisfaction with maternity services include insensitive care, lack of informational and emotional support, inadequate explanations, inflexibility of hospital routines and poor communication (Redshaw and Heikkila 2010), all of which were apparent in this study. This study confirms previous studies that women's dissatisfaction with healthcare has not been adequately addressed in the UK (Simmons et al. 2006; Geller, Psaros and Kornfield 2010).

There is evidence that some women describe miscarriage as being so emotionally painful, it becomes unspeakable, with previous research describing a silent environment within which women experience miscarriage (Bansen and Stevens 1992; Rowlands and Lee 2010a). As in other studies (Harvey, Moyle and Creedy 2001; Wong et al. 2003), women expressed a desire for follow up support after discharge from hospital in this study. In line with previous studies, there were some participants who actually needed professional follow-up support (Sejourne et al. 2010; Nikcevic et al. 1998), with clinical caseness as an indicator of psychological distress.

Previous studies indicate that women search for meaning in their miscarriage, which is common and important (Ogden and Maker 2004), often entailing an attributional search (Simmons et al. 2006). The lack of follow up care means that some women continue to search for possible causes for their miscarriage; this affects their adjustment to the miscarriage and was related to lower wellbeing. Nikcevic and Nicolaides (2014) also identified the need for follow up support for women who continue to search for a potential cause of miscarriage, as their distress is greater, to help them to adjust. Previous studies have shown that women describe how they want specific answers regarding the cause of the miscarriage (Wong et al. 2003), and in this study, over time there was the realisation that with miscarriage there is often no known cause. Insensitive care and lack of awareness of the impact of miscarriage on women's psychological wellbeing, results in some participants feeling isolated.



An improvement in the diagnosis and management of early pregnancy loss, in order to reduce the incidence of psychological morbidity, has been called for (NICE 2012). The first NHS guideline on miscarriage care raises the importance of the need for compassionate and supportive care, placing considerable emphasis on the need for effective emotional support, quality information giving and the offer of follow-up for women (NICE 2012). As in other studies (Harvey, Moyle and Creedy 2001; Wong et al. 2003), women expressed a desire for follow up support after discharge from hospital in this study. Previous studies have shown that there are varying views about the optimal timing, location, structure and professional to deliver follow-up support (Sejourne, Callahan and Chabrol 2010; Adolfsson, Bertero and Larsson 2006). In this study, there was evidence that follow up support needs to be offered at a different time point than is currently the case.

### **6.3.2 Theme 2: Health locus of control**

Rotter (1975) states that those with higher internal health locus of control tend to seek ways of improving their health status and of finding effective ways of controlling stress levels. In this study, participants, who have an internal health locus of control, make healthy lifestyle choices increasing a sense of control, which helps to enhance psychological wellbeing. Some describe how they re-evaluated their lifestyle to reduce stress. Healthcare professionals and their social support network increase internal health locus of control.

Previous studies support these findings in health locus of control following pregnancy loss, demonstrating that women who view 'oneself' as having more control over pregnancies as in an internal health locus of control, had less distress (Shreffler, Greil and McQuillan 2011).

Bodecs et al. (2011) found that internal health locus of control was associated with healthy behaviours such as pregnancy planning and folic acid intake, whilst external health locus of control was related to unhealthy behavioural tendencies such as continued smoking and alcohol consumption during pregnancy.

Supporting women to adopt an internal health locus of control following miscarriage may enhance psychological wellbeing, however great care should be taken to ensure that this does not increase self-blame and a heightened sense of responsibility. Furthermore, interventions aimed at reducing self-blame would have to be applied with discretion, so as not to undermine the importance of self-management of various beneficial health behaviours for example smoking cessation.

### **6.3.3 Theme 3: Social support**

Similar to the findings of Abboud and Liamputtong (2005), women in this study believed that support from their Significant Other was very important. They rely on interactions with their Significant Other, family members and friends to help them cope with their distress, confirming previous findings (Conway and Russell 2000). A protective Significant Other who is present both emotionally and physically was described as helpful, enhancing psychological wellbeing. A Significant Other who is protective, emotionally and physically present to talk to, and who enables participants to share their feelings, increases their optimism giving them hope for the future.

Abboud and Liamputtong (2005) also found that their Significant Other supports and encourages them to change negative thoughts in order to have a more positive perspective. Talking to their social support network reduces self-blame and increases sense of control, especially their Significant Other, in addition to close Family and Friends with personal experience of miscarriage. Previous studies show that women report a higher quality of support provided by others who have also had a pregnancy loss (Hutti 2005), suggesting that direct personal experience may promote more sensitive support through their greater understanding of the emotional impact.

Making positive plans together with their Significant Other was beneficial in enhancing psychological wellbeing. Talking to and spending time with Friends with personal experience of miscarriage was particularly helpful, as they normalise miscarriage which reduces self-blame. Reducing women's feelings of personal responsibility is thought to lessen the negative emotional impact of miscarriage (Nikcevic and Nicolaides 2014). In this study, reducing personal responsibility helped to enhance psychological wellbeing.

As in this study, previous studies have shown that women's Significant Other often feels invisible during and after miscarriage, with many keeping their real feelings hidden from their wife or girlfriend for fear of saying the wrong thing and causing more distress (Boynton 2015).

One woman described how she did not inform her brother that she had miscarried, which resulted in him feeling excluded when he found out. Yet until women speak to male family members about their experiences, the opportunity to raise awareness of the impact of miscarriage on women's psychological wellbeing is lost. Roose and Blanford (2011), evaluated a perinatal bereavement programme offering intergenerational services, and found that when siblings and grandparents utilised the service, that it was useful to the entire family.

In this study, positive social support enhanced psychological wellbeing. Receiving social support is a very powerful 'buffer' against miscarriage, and can moderate the negative influence of a miscarriage on mental health outcomes (Swanson et al. 2009). Bereaved parents often perceive that support is inadequate in quantity and or quality (Wojnar, Swanson and Adolfsson 2011). Women in this study, who perceived that they received less social support than they desired, had lower wellbeing, higher anxiety and higher depression, thus confirming previous research findings (McGreal, Evans and Burrows 1997). Brier (2008) identified that support providers can fail to appreciate the level of distress caused by miscarriage, and especially the profound, sustained feeling of loss felt by some women. In many cases, women described adequate perceived social support; however there was evidence that Significant Other, Family and Friends lacked understanding and the relevant resources to enhance psychological wellbeing, particularly in individuals with lower wellbeing, higher anxiety and depression.

Participants who are able to talk about their miscarriage amongst friends, particularly friends who have the shared experience, is important in enhancing psychological wellbeing over time. It has been suggested that if their naturally occurring social networks do not contain such individuals, accessing support groups may help to fill perceived gaps in the shared experience (MacGeorge and Wilkum 2012). However, whilst some participants described how they would like to attend a support group to discuss their feelings with fellow sufferers, there was no evidence of any of the participants doing this in the current study.

This study is supported by previous research who found that few women tell the story of their loss to others (Cecil 1996). In line with previous research, the findings in this study demonstrate that miscarriage is a hidden event, which is not spoken about with friends until they themselves experience miscarriage (Rowlands and Lee 2010a). In this study, participant's descriptions of how sharing their experiences with women who had experienced miscarriage, was beneficial and may have been influential in ensuring them that what they were feeling was not 'abnormal' as they attempted to normalise their experience.

Social support was influential in reducing self-blame, which may have been beneficial in terms of wellbeing, where women accept the explanations and reassurance that family and friends provide, and that they were not to blame. A continued sense of self-blame and failure over time, which was not reduced through social support networks, resulted in lower wellbeing and higher anxiety. Social support was not always enough to reduce self-blame, highlighting the need for reassurance from a healthcare professional, that they were not to blame.

It has been suggested that friends with personal experience who focus excessively on their own emotions and perceptions may impede their comforting efforts for the woman (Burleson and Planalp 2000). This finding is in contrast to this study, as participants did not describe this.

#### **6.3.4 Theme 4: Coping styles**

Task focused coping refers to efforts at solving or managing the problem that is causing distress. It includes strategies for gathering information, planning action and includes acquiring resources such as knowledge, to help deal with the underlying problem (Lazarus and Folkman 1984), and accessing social support to talk about their experience.

Participants describe how being able to express their emotions, and share feelings with their Significant Other, Family and Friends was helpful in enhancing psychological wellbeing. Lazarus and Folkman (1984) proposed that emotion-focused coping was more likely if the stressful situation has been appraised as uncontrollable or unchangeable, whereas problem-focused coping was more likely when events are appraised as controllable or amenable to change.

Having a plan and being proactive in seeking informational support was also felt to be beneficial. By understanding that miscarriage is common and statistically likely to occur, helps to enhance psychological wellbeing. Participants know that an avoidant focused coping style whilst useful initially, is not protective over time, and neither is self-blame.

Studies have found that it was very important for women to have an explanation as to why the miscarriage happened (Nikcevic, Tunkel and Nicolaides 1998). In most cases the cause of miscarriage is unknown and some women attribute it to their own behaviour, (Nikcevic et al. 2000). Knowing which life style behaviours are more likely to influence the likelihood of miscarriage, has shown in previous studies to result in feelings of self-blame, impacting on psychological wellbeing (Adolfsson et al. 2004; Defrain, Millspaugh & Xie 1996). Participants, who continued to search for meaning and were unable to make sense of their loss, were more likely to have poorer psychological wellbeing, which concurs with other studies (Nikcevic and Nicolaides 2014; Simmons et al. 2006). Nikcevic and Nicolaides (2014) found that searching for a cause is common, but there was a significant decline in women's preoccupation and thinking about the cause for miscarriage over time. Women who have found meaning for their miscarriage have less distress (Nikcevic and Nicolaides 2014).

In line with previous research the findings in this study suggest that for some women, more support and information is needed to assist their search for meaning (Simmons et al. 2006), reduce self-blame and the sense of failure (Adolfsson et al. 2004).

### **6.3.5 Theme 5: Resilience**

Resilience can be defined as an individual's ability to thrive despite the experience of a stressful life event (Connor and Davidson 2003). Resilience is a process of dynamic adaption to adversity, without any lasting significant psychological or physiological disruption (Seery et al. 2010). In essence, it is where women thrive despite miscarriage.

It was clear that women who respond positively following miscarriage, used effective coping strategies and social support to enhance psychological wellbeing, which may have increased their resilience. Resilient women, who have enhanced psychological wellbeing following miscarriage, typically described enhanced social support, used task and emotion focused coping styles, had an internal health locus of control, as well as an optimistic outlook.

An empathic social support network to talk miscarriage through with, increases optimism and hope and helps participants to focus on the positives that builds resilience. Coping styles that reduce stress also promote resilience, and internal health locus of control increases self-control and resilience. Following miscarriage, some describe how they had a stronger relationship with their Significant Other, which enabled them to develop deeper meaning in their relationship together. A simple ritual-memorial may help some, who feel they want to acknowledge their loss. Some hospitals offer regular memorial services that are especially designed for families following early pregnancy loss. A study that examined whether Scottish EPAU offer a memorial service for those who experience miscarriage found 13 of the 20 EPAU offered such a dedicated service (Irvine and Cumming 2015).

### **6.3.6 Theme 6: Other factors**

Time was an important healing factor, and participants described how over time, they felt more able to cope, enhancing psychological wellbeing.

Research participation was described as helpful, as some participants described how they could see improvements in their psychological wellbeing over time as a result of participation, supporting previous study findings (Lee, Slade and Lygo 1996). In line with Capitulo (2004), there was evidence to suggest partaking in research can in itself have a therapeutic effect on participants.

### ***Summary***

This Chapter explored what creates health and psychological wellbeing within a sample of women who have experienced miscarriage, in order to further understand factors that promote health and psychological wellbeing despite adversity. The next Chapter of the thesis will discuss the results and findings from the three studies in the thesis.



## **CHAPTER 7**

### **DISCUSSION AND CONCLUSION**

The overall aim of this PhD thesis was to examine the impact of miscarriage on women's psychological wellbeing and identify and further explore the predictors of enhanced psychological wellbeing, from a salutogenic perspective. By taking a salutogenic perspective it brings originality to the area, as it examines the factors that promote health and psychological wellbeing despite adversity.

This Chapter will discuss the three studies in the thesis, each addressing aspects of the overall aim. Phase 1 included two stages, Stage 1: a comparative study, which examined differences between women with recent miscarriage compared to women without experience of miscarriage; and Stage 2: a prospective study which examined the impact of miscarriage on women's psychological wellbeing and the factors related to enhanced psychological wellbeing over time. The third study, Phase 2, involved semi-structured interviews with women who completed the prospective study, and further explored the predictors of enhanced psychological wellbeing identified during Phase 1.

The discussion explores the success of the research in answering the thesis aims and research objectives; it identifies the limitations of the study and assesses its contribution to knowledge. In addition, the implications for future research, education and practice are discussed. This research contributes to previous work in the field by providing new insights into a paucity of research that has used a salutogenic perspective within this population.

#### **7.1 Impact of Miscarriage on Psychological Wellbeing**

In order to determine the need for interventions to enhance psychological wellbeing post miscarriage, the effects of miscarriage on psychological wellbeing need to be established. Previous studies have indicated the impact of miscarriage on levels of anxiety and depression are significant and enduring, however studies are limited by non-random selection, small sample sizes, data collected retrospectively resulting in potential recall bias, use of non-standardised measures, differences in definitions of miscarriage across studies, inappropriate control groups e.g. psychiatric out patients and potential difficulties with when the assessments took place. Some studies have used mixed samples which include women with miscarriage and other types of perinatal loss e.g. stillbirth and neonatal death, whose psychological wellbeing may be affected in a different way by these events; whilst there is a paucity of research into wellbeing amongst this population.



## ***Anxiety***

Results from Stage 1 indicated that women without miscarriage (CG) had significantly lower levels of anxiety and were significantly less likely to be classed as anxiety caseness, compared to the women who experienced miscarriage (MG). These findings are in line with previous comparative studies; who have also found that women who experience miscarriage have higher levels of anxiety following miscarriage (Sejourne, Callahan and Chabrol 2010; Woods-Giscombe, Lobel and Crandell 2010; Murphy and Merrell, 2009; Bergner et al. 2008; Adolfsson et al. 2004; Janssen et al. 1996; Beutel et al. 1995; Franche and McKail 1992; Thapar and Thapar 1992).

Indeed, the levels of caseness (30.30%) amongst the women with miscarriage in the current study are very similar to those reported by Cumming et al. (2007); who found that 28% of women with miscarriage had anxiety caseness. Given that Breeman et al. (2014) reported the UK norm for anxiety caseness using the HADS to be 19%, levels of anxiety caseness (having moderate-to-severe) are clearly heightened. This can also be seen when comparing levels to the comparative group in the current study, with only 14.08% being classed as having moderate to severe anxiety.

Results from Stage 2 indicate that there is no significant improvement in anxiety at 6 or 13 months, with 28.53% of the women still classed as caseness 13 months post-miscarriage. This supports the findings of previous longitudinal studies that anxiety remains heightened up to 6 months (Dingle et al. 2008; Cumming et al. 2007; Swanson et al. 2007; Broen et al. 2006) and 13 Months (Cumming et al. 2007; Nikcevic et al. 1998). In contrast, Swanson et al. (2007) found the proportion of women healing steadily increased over the year; however women's responses at 6 weeks were a good indicator of reactions at one year, suggesting that for some the impact is enduring.

## ***Depression***

Results from Stage 1 indicated that women without miscarriage (CG) have significantly lower levels of depression and are significantly less likely to be classed as depression caseness, compared to the MG. These findings support previous research (Neugebauer et al. 1992; 1997; 2003; Geller, Klier and Neugebauer 2001; Klier et al. 2000; Beutel et al. 1995; Janssen et al. 1996; Thapar and Thapar 1992), which shows that women who experience miscarriage have higher depression scores in comparison to women without miscarriage. In relation to depression, UK normative data using the HADS in a large population based study (Breeman et al. 2014) reported lower depression scores amongst women than found in the current MG.

Indeed, the levels of caseness (13.64 %) classified as having 'moderate-to-severe' depression (depression score  $\geq 11$ ) amongst the women with miscarriage in the current study are very similar to those reported by Cumming et al. (2007); who found that 10% of women with miscarriage had depression caseness. Given that Breeman et al. (2014) reported the UK norm for depression caseness using the HADS to be 6.9%, levels of depression caseness (having moderate-to-severe) are clearly heightened. This can also be seen when comparing levels to the current comparative group, with only 1.41% being classed as having moderate to severe depression.

Depression levels in the CG appear to be lower than that reported in previous normative studies, which may be explained by restrictions in the age and composition of the CG. The current CG was restricted to women of reproductive age, whereas the normative data reported by Breeman et al. (2004) also included women from older age groups. Research has indicated that women over the age of 66 are at higher risk of depression (Sutin et al. 2013); therefore studies including such women will have elevated depression scores. Elevated depression scores in normative studies may also result from the inclusion of women with miscarriage. Given its prevalence, it is likely that normative samples will include women who have recently experienced miscarriage (Brier 2004).

Results from Stage 2 indicate that there is a significant improvement in depression at 6 and 13 months, with no caseness at 6 months, and only 2.04% of the women with caseness at 13 months post-miscarriage. This supports the findings of previous longitudinal studies that depression scores steadily improve over time (Cumming et al. 2007; Broen et al. 2006). These findings indicate that the majority of miscarriage women do not experience depression, however for some, there is an initial negative impact on depression levels, but over time this dissipates.

### ***Wellbeing***

Results from Stage 1 indicated that women without miscarriage (CG) have significantly higher levels of wellbeing compared to the MG. In relation to wellbeing, the current CG reported a similar wellbeing score (CG mean=52.38, SD=7.61), to UK normative data where the population mean is 50.65 (SD=8.82; Scottish Government Social Research 2009), whilst the MG had a lower wellbeing score, (MG mean=46.14, SD=9.85). There is limited literature in relation to WEMWBS, with no studies found in the miscarriage population.

Results from Stage 2 indicate that there is a significant improvement in wellbeing over time, whereby wellbeing improves by 6 months and again at 13 months, at which point scores, were comparable with both normative data and the CG. These findings clearly indicate that

miscarriage has an initial negative impact on women's wellbeing but over time wellbeing increases to normal levels.

Overall, these results support previous study findings and impact that miscarriage has a negative on women's psychological wellbeing, (Robinson 2011; Gaudet et al. 2010; Brier 2008; Bryant 2008; Carter, Misri and Tomfohr 2007; Geller, Kerns and Klier 2004; Swanson et al. 2003; Klier, Geller & Ritsher 2002; Athey and Spielvogel 2000; Jannsen et al. 1997; Neugebauer 1997; Thapar and Thapar 1992), which can be present for several months to over a year after the event (Lok et al. 2010; Swanson et al. 2009; Cumming et al. 2007). The findings also support previous research that miscarriage has a more significant and long lasting impact on anxiety rather than depression (Brier 2004).

Given the impact on psychological wellbeing, follow up care to enhance psychological wellbeing post miscarriage is therefore warranted. For follow up care to be effective however, development work is needed to expand our understanding of the protective factors that moderate the impact of miscarriage on psychological wellbeing.

## **7.2 Potential Moderators of Psychological Wellbeing**

Establishing the predictors of enhanced psychological wellbeing allows for the identification of targets for follow up care. Few studies however, have used the salutogenic perspective to determine moderators, as most have focused on the pathological perspective. The following section will discuss the potential moderators of psychological wellbeing.

### **7.2.1 Demographic characteristics**

In line with the majority of previous research (Brier 2008; Lok & Neugebauer 2007; Klier et al. 2002), a woman's age, education and socio-demographic status were not related levels of anxiety, depression or wellbeing.

### **7.2.2 Major life events**

In line with previous research, findings from Stage 2 indicated that a lower number of major life events were significantly associated with lower anxiety, lower depression and higher wellbeing amongst women with miscarriage (Lee and Rowlands 2015). Swanson (2007) found that women who were grieving at one year were more likely to have experienced further negative life events, suggesting that heightened distress could be a result of MLE as opposed to miscarriage. Findings from Stage 1, however, indicated that women without miscarriage still experience lower levels of anxiety, depression and higher wellbeing, even when MLE is controlled for.

### **7.2.3 Reproductive history and reproductive status**

Experience of previous miscarriage or having children did not influence anxiety, depression or wellbeing at baseline. In contrast, Neugebauer et al. (1997) found that depression was higher amongst those miscarriage women who were childless compared to women with children. Whilst Blackmore (2011) found previous prenatal loss was associated with depression and anxiety up to 3 years after the birth of a baby.

In line with the findings of Sejourne, Callahan and Chabrol (2010), being pregnant, having given birth, experiencing further miscarriage, actively trying for a baby or no longer trying at 6 and 13 months post miscarriage had no effect on levels of anxiety, depression or wellbeing. These findings suggest that the impact of miscarriage on psychological wellbeing is not influenced by reproductive status.

Previous studies have found inconsistent effects when examining reproductive factors and the impact on psychological wellbeing amongst women post miscarriage (Adolfsson, Bertero and Larsson 2006; Swanson 2000). Whilst previous miscarriage history (Statham and Green 1994; Thapar and Thapar 1992) and presence of living children (Neugebauer et al. 1997), have also been found to negatively influence anxiety and depression, with higher anxiety amongst those with previous miscarriage and higher depression amongst childless women.

Anxiety appeared to remain heightened regardless of reproductive stats at 13 months, indeed some who were pregnant or had given birth by 13 months reported feeling anxious in their next pregnancy. This provides evidence that support is needed for those who do not receive follow up for high anxiety, in the next pregnancy, in line with previous findings (Gaudet et al. 2010).

### **7.2.4 Health locus of control**

In relation to HLOC, there was no statistically significant difference between the comparative group and miscarriage group on internal, chance or powerful others health locus of control, whilst scores were in line with normative data from the MHLOC in a female adult population (Wallston, Wallston and Devellis 1978).

#### ***Anxiety, depression and wellbeing with health locus of control (HLOC)***

Although, HLOC did not differ between the two groups, HLOC was found to be associated with anxiety and wellbeing in both groups.

In line with previous research that found low IHLOC and high external HLOC (POHLOC and CHLOC) predicted higher scores on measures of anxiety (Barlow et al. 2002); those in the MG with a higher IHLOC, who believe their health is contingent on what they do, had lower anxiety

levels and higher wellbeing. However, in contrast to previous research (Barlow et al. 2002), women in the CG with higher scores on the CHLOC, who believe their health is down to chance or fate, i.e. outside of their personal control, had lower levels of anxiety. In relation to HLOC and depression, none of the subscales correlated with depression in either of the groups. These findings suggest that HLOC is a moderator of anxiety and wellbeing levels.

In the MG, the findings suggests that women who believe their health is within their own control, experience less anxiety and increased wellbeing over the first 6 months post miscarriage. At 6 months, lower anxiety is found amongst women who are less likely to explain their health as down to chance. Whilst at 13 months health locus of control did not influence psychological wellbeing suggesting that this becomes less influential over time. This may be because those with an IHLOC feel more control resulting in enhanced psychological wellbeing initially and at 6 months post miscarriage, but because participants made changes to enhance their health and wellbeing, by 13 months health locus of control becomes less influential over time, which concurs with other findings (Shreffler, Greil and McQuillan 2011; Bergner 2008).

#### **7.2.5 Perceived social support**

In this study, the MG and CG did not differ in terms of levels of perceived social support, with their Significant Other being the most important in both groups. As time passed, however, the source of support increased with Family and Friends becoming increasingly important for the MG.

#### ***Anxiety, depression and wellbeing with perceived social support (MPSS)***

Social support has been linked empirically to levels of anxiety, depression and wellbeing (Decker et al. 2007) with higher levels of social support related to lower anxiety and depression and higher wellbeing. In this study, higher levels of perceived support from their Significant Other and family were significantly related to higher wellbeing in both the MG and CG; whilst those in the CG also have lower depression scores. This supports previous research, which found an association between a lack of social support and higher depression (Swanson 2000), and poorer psychological adjustment (Nikcevic, et al. 2007) in the miscarriage population.

In relation to wellbeing, studies in the general population concur with these findings, where women who have a well-integrated social support network have higher wellbeing, with increasing mean WEMWBS scores dependent on increasing social network size from both relatives and friends (Cable et al. 2013).

There was no relationship between perceived social support and anxiety or depression initially; there was however higher levels of wellbeing associated with higher levels of Significant Other and family scores at baseline, 6 and 13 months.

Support from Significant Other related to anxiety, depression and wellbeing at 6 and 13 months. In relation to family, those with higher scores had lower levels of depression and higher levels of wellbeing at 6 months and 13 months, in addition to lower levels of anxiety at 13 months. In relation to friends, those with higher scores had lower levels of depression and higher levels of wellbeing at 6 and 13 months. Overtime, the influence of and source of support drawn upon appears to increase. These results suggest that participants' Significant Other is crucial in enhancing psychological wellbeing across time, whilst perceived social support received from Friends and Family is more influential at a later stage.

In line with previous research, it seems that increased social support, from a Significant Other, Family and Friends was very important for women after miscarriage in terms of psychological wellbeing (Sejourne, Callahan and Chabrol 2010; Abboud and Liamputtong 2005; Conway and Russell 2000; Cecil 1994), which helps them to cope (Conway and Russell 2000). Lasker and Toedter (1991) found that poor support from family was the best predictor of grief.

### ***Significant Other***

Although a wide range of support is important, the support from a Significant Other appears to be most salient. Indeed, Hutti et al. (2015) found higher pregnancy-specific anxiety and depression was linked to the quality of the intimate partner relationship amongst women with perinatal loss in the next pregnancy. Whilst Goldback et al. (1991) found that incongruent grief reactions between partners add to distress following miscarriage. Defrain (1991) proposed that health carers should help couples' identify differences in grieving to improve communication, facilitate grief and support the couple's relationship, which concurs with these study findings. By acknowledging that everyone is an individual with variability in response, will encourage the couple to talk about how they are feeling, which may help to enhance psychological wellbeing.

Similar to the findings of Abboud and Liamputtong (2005), findings from Phase 2 indicated that a compassionate and supportive relationship with their Significant Other was recognized as something that enhances psychological wellbeing, and makes their experience a shared loss. The quality of the relationship appears to be more important in enhancing psychological wellbeing, supporting previous findings (Lok and Neugebauer 2007).

Where partners were perceived as offering only minimal support and fail to understand the depth of the woman's experience, there was evidence that this impacted negatively on

psychological wellbeing, and is supported by previous study findings (Wiebe and Janssen 1999; Goldback et al. 1991). The participant's Significant Other needs to be considered in his supportive role, as there was evidence that he was also psychologically distressed, rendering him unable to support, in line with previous study findings (Kagami et al. 2012; Swanson et al. 2009; Johnson & Baker 2004; Franche 2001; Murphy 1998; Beutel et al. 1996).

Support to improve knowledge, skills and ability to better manage bereavement care following miscarriage for women, their partner and healthcare professionals should therefore be promoted (Montero et al. 2011).

Participants described how their Significant Other was influential in reducing self-blame and increasing optimism, leaving them with a sense of hope, which reduces anxiety and increases wellbeing. There is increased interest in optimism and its relationship with psychological wellbeing (Carver, Scheier and Segerstrom 2010). Participants, who were able to make sense of why they had miscarried, or had come to terms with their miscarriage, had enhanced psychological wellbeing. These findings support other research of meaning-making in the experience of bereavement and coping with loss (Park 2010).

Distress amongst participants' Significant Other was reported, suggesting the requirement for informational and emotional support from healthcare professionals for their Significant Other. Given the key role their Significant Other plays in supporting their partner after miscarriage, there is a need for more informational and emotional support from healthcare professionals for those who need it, supporting previous findings (Conway and Russell 2000; Beutel et al. 1996; Cordle and Prettyman, 1994).

### ***Family and Friends***

Reluctance to seek support from friends and family early on, may relate to the findings that women feel some friends and family members do not understand how to help women, or are unaware of the impact of miscarriage on psychological wellbeing; especially those with no experience of miscarriage. However, over time participants find support from family/friends with previous experience of miscarriage to share their feelings and experiences with, as they were more understanding of the experience.

Being able to talk to friends who have personal experience of miscarriage helps to reduce anxiety and increase psychological wellbeing in women over time, supporting previous findings (Gerber-Epstein et al 2009; Hutti 2005), suggesting that they provide more sensitive support through greater insight and understanding.

Although levels of depression were low at 13 months, participants described the importance of their Significant Other, family and friends in lowering depression levels, by getting them to talk about their feelings and taking part in everyday activities. Where there were lower levels of perceived social support, especially in relation to an absent Significant Other and for those who avoided social events, feelings of depression were higher, supporting previous study findings (Bergner et al. 2008). Participants, who feel unable to talk about their miscarriage amongst their social support network, have less availability of emotional and social support (Simmons et al. 2006), reducing psychological wellbeing.

Clearly social support is a protective factor that can buffer the impact of miscarriage on psychological wellbeing in women, in line with previous studies (Rowlands and Lee 2010a). This study found that having someone to talk to, who listened was helpful, as did Lee and Slade (1996) where participants consistently reported “just having someone to talk to, someone who listened was helpful” (p. 56).

#### **7.2.6 Coping style**

In this study, the MG and CG did not differ in terms of avoidant, emotion or self-blame coping styles. However, task focused coping style differed between the groups, with the MG significantly less likely to (or are less able to) employ a task focused coping style, in comparison to the CG. This suggests that participants in the CG are more likely to attempt to find solutions to problems (e.g. action planning, problem solving), to alter a stressful event. Research, however, has identified that task focused coping is more beneficial in reducing psychological distress when the stressor is perceived as controllable, whereas an emotion focused or avoidance focused coping strategy, may be more beneficial when the stressor is uncontrollable (Park 2011). The fact that miscarriage is an uncontrollable event may help to explain the difference in coping styles employed.

#### ***Anxiety, depression and wellbeing with coping style***

Most empirical studies view effective coping as a buffer that mediates the relationship between the stressor and the outcome (Endler and Parker 1990). Research suggests certain coping strategies promote positive psychological wellbeing, whilst others promote negative psychological wellbeing (Endler and Parker 1994). In terms of task focused coping, it has been widely regarded as adaptive for psychological wellbeing, and has a positive association with state anxiety and depression (McWilliams, Cox and Enns 2003). However, most coping strategies are not unequivocally positive or negative in terms of their effects on psychological wellbeing (Somerfield and McCrae 2000).



In this study, women in the MG and the CG, who score lower on the self-blame coping style scale and therefore do not have a tendency to blame themselves or self-criticise, also have lower anxiety and depression scores, in addition to higher wellbeing scores. These findings support previous findings of links between coping style and psychological wellbeing in the miscarriage literature, with higher depression linked to avoidant coping styles (Bergner et al. 2008), and higher anxiety and depression linked to self-blame (Franché and Mikail 1999; Nikcevic et al. 1998). Participants who are self-critical and self-blame may be more likely to construe miscarriage as a personal failure, which impacts negatively on psychological wellbeing.

In line with Adolfsson et al. (2004) the qualitative study indicated that women who had feelings of self-blame and guilt after miscarriage had anxieties around their search for a cause.

In the miscarriage literature, being able to ascribe a reason for miscarriage, may help women cope with their experience (Maker and Ogden 2003; Athey and Spielvogel 2000) and reduce feelings of self-blame by promoting acceptance that nothing could have been done to prevent it (Nikcevic et al. 1999). However, in 50% of cases the cause is unknown (Regan and Rai 2000), therefore a specific clinical cause is not always possible. To help women cope with miscarriage and seek resolution of the experience, being informed that they were not to blame, may not be enough (Simmons et al. 2006).

Women who have a task focused coping style have lower anxiety scores, whilst those with emotional and task focused coping styles have higher wellbeing scores. This supports Freud's (1957) suggestion that employment of an emotion focused coping style following loss is cathartic, and is a necessary ingredient of healthy adjustment. Being able to develop and carry out plans, being able to communicate and find solutions to problems together, as well as being capable of sharing their feelings whilst remaining positive, enhances wellbeing.

These findings were also mirrored in the CG, with women who are less likely to use a self-blame coping style also having lower anxiety, depression and higher wellbeing. Women who employ less avoidant focused coping styles have lower depression; whereas women who use emotional and task focused coping have lower depression and higher wellbeing scores. Swanson (2000) found that women who use passive coping strategies, such as self-blame, avoidant focused coping by ignoring the situation, and report lower emotional strength; have an increased risk of depressive symptoms. Being able to discuss why miscarriage might have occurred requires sensitive staff to help them cope with miscarriage, whilst recognizing that the individuals' knowledge of her own body needs to be valued (Simmons et al. 2006).

Enhanced psychological wellbeing was found amongst those who employ a task and emotion focused coping style. Participants who do not have an avoidant focused coping style have enhanced psychological wellbeing scores at 6 and 13 months. Those who do not self-blame have enhanced psychological wellbeing across time. In terms of overall coping, those who feel they are coping well have enhanced psychological wellbeing compared to those who are not, or just, coping. This is in line with previous research, whereby those who report a difficulty in coping following miscarriage, may have more difficulty in adjusting (Adolfsson, Bertero and Larsson 2006).

In Phase 2, there was evidence that some participants were proactive in reducing stress, in particular in their employment and made decisions to actively deal with them, which may have enhanced psychological wellbeing.

In the qualitative study, those with lower anxiety tended to have come to terms with the miscarriage and were less likely to blame themselves for their miscarriage. Participants, who felt they were to blame for the miscarriage, feel like a failure, supporting previous studies (Adolfsson et al. 2004; Cecil 1994). Participants described being proactive in health information seeking behaviours to search for causality e.g. seeing GP for thyroid tests, healthier dietary choices, exercising more and avoiding stressors; such as reducing employment, which they described as helpful in enhancing psychological wellbeing. Participants' social support network in some instances helped to increase internal health locus of control and motivated them to feel more empowered to make healthier lifestyle choices which may enhance psychological wellbeing, rather than leave life choices to fate leading to a feeling of disempowerment and psychological distress.

In addition to social support influencing health locus of control, there was evidence in Phase 2, that social support also influences coping style. In particular their Significant Other and Friends with personal experience of miscarriage attempted to reduce self-blame, and encourage women to employ task and emotion focused coping styles.

Certain tasks were deemed as supportive in enhancing psychological wellbeing. For example, participation in memorial rituals for some may facilitate healing, for those who want to express meaning and significance by acknowledging their loss. Studies have demonstrated that bereft parents who participate in rituals find support, meaning and facilitation of their grief (Capitulo 2005).

Discovered during Phase 2, participants found taking part in the research helped them feel their opinions and views were valued, whilst demonstrating that miscarriage was an important issue, therefore validating their experiences. Research participation was described as helpful,

as some participants described how they could see improvements in their psychological wellbeing over time as a result of participation, and supports previous study findings (Lee, Slade and Lygo 1996). Brown and Augusta-Scott (2006) suggests that the sharing and writing down of life experiences can help ascribe meaning to them, which may be useful in enhancing psychological wellbeing following miscarriage. In line with Capitulo (2004), there was evidence to suggest partaking in research can in itself have a therapeutic effect on participants.

By examining adaptive coping styles, it was possible to identify those coping styles that were related to enhanced psychological wellbeing in women following miscarriage. Self-blame was found to be the most salient moderator of anxiety and depression at baseline. Women who do not self-blame have lower anxiety and depression initially post miscarriage. Self-blame and an avoidant coping style were the strongest predictors of anxiety caseness at 6 months.

### **7.2.7 Resilience**

In this study, the MG and CG did not differ in terms of resilience scores. In relation to resilience, normative data using the 10-item CD-Risc scale reported a mean resilience score of 27.21 (5.84) (Campbell-Sills and Stein 2007), which is similar but marginally lower than that found in both the MG and CG.

#### ***Anxiety, depression and wellbeing with resilience***

In this study, higher resilience scores were significantly correlated with lower anxiety and depression scores and higher wellbeing scores for women in the CG and MG. Women with higher resilience across time have enhanced psychological wellbeing, supporting the literature that higher resilience supports positive mental health (Steinhardt and Dolbier 2008; Bradshaw et al. 2007; Waite and Richardson 2004). Indeed, higher resilience was significantly associated with higher wellbeing, lower anxiety and depression across time, and was the strongest predictor for depression and wellbeing across time.

Given that research on the measurement of resilience is in the early stages, further studies are needed to validate the questionnaire used in the miscarriage population, as no studies on resilience were found in the literature. There is a growing body of evidence to suggest that resilient individuals, defined as those with maintained or improved mental health in the face of stressful life events, return to normal functioning (Bonanno, 2005; Rutter, 1999), and those who are more able to weather a stressful situation, in a more positive manner than others, would be viewed as resilient (Zautra, Hall and Murray 2010). This indicates that resilience is an outcome after exposure rather than a psychological trait (Norris et al. 2008).

The current study findings support the literature, in that higher resilience scores are significantly correlated with lower anxiety and depression scores and higher wellbeing scores for women in both groups. Previous research out with the miscarriage literature has found that higher resilience scores were associated with a decrease in depression and anxiety (Prince-Embury 2013; Bonanno 2004), and is protective in reducing psychiatric symptoms amongst adults (Campbell-Sills, Cohan and Stein 2006).

Zullov and Seligman (1990) identified that resilient people show more optimistic thinking and, in the qualitative study, women indicated that their Significant Other and Friends with personal experience of miscarriage attempted to increase optimistic thinking, strengthening resilience.

Taken together these findings indicate that resilience, self-blame and coping style can moderate the impact of miscarriage on psychological wellbeing. These findings suggest that reducing self-blame and avoidant coping strategies may lower anxiety and depression levels, whilst increasing resilience may be beneficial in improving psychological wellbeing for women who experience miscarriage, thus informing the future research agenda.

Timely interventions based on evidence which has the potential to enhance psychological wellbeing and support individuals in adjustment, may constitute prevention. In order for such interventions to be effective however, it is also important to understand health professionals' practice. Intervention work may also be needed to change health professionals' behaviour and attitudes in order to bring about changes to the advice and support provided to women. Using theoretical domains framework (TDF) to explore the factors that influence provision of and uptake of support following miscarriage, to inform recommendations/guidance to change practice (Michie et al. 2005) may be beneficial.

#### **7.2.8 Satisfaction with and experience of healthcare provision**

Satisfaction with and experience of healthcare provision is an important factor in influencing psychological wellbeing. The majority of women were satisfied with their experience of healthcare provision. In contrast, dissatisfaction with care following miscarriage is noted in the literature (Corbet-Owen and Kruger 2001; Thorstensen 2000; Evans et al. 2002).

The current study showed that the few women who were dissatisfied with care received from hospital staff at time of miscarriage, had lower anxiety and higher wellbeing at 13 months, suggesting that being able to express dissatisfaction may enhance psychological wellbeing. Or that those with higher anxiety/depression receive more care so are more satisfied. In contrast to these findings, previous research shows that the care provided in hospital can have

a negative significant effect on depression, with depression amongst those who were dissatisfied with care (Klier, Geller and Neugebauer 2000).

In the quantitative study, participants may have been reluctant to express dissatisfaction with their care, due to that fact that there is limited choice about future maternity care provision within the locality of the research. Where there is a lack of choice, expectations can be low and women may report higher satisfaction because of this (van Teijlingen et al. 2003). Whilst participants returned the questionnaires directly to the researcher, it is possible that involvement of health care professionals in data collection may have resulted in socially desirable responses (Sitzia and Wood 1997).

The qualitative findings however, report both positive and negative aspects of care; using a questionnaire survey approach alone to detect patients' satisfaction with healthcare provision therefore may be problematic and demonstrates the importance of the mixed method design employed. Indeed, Lee and Rowlands (2015) proposed that patient satisfaction surveys in isolation are inadequate for exploring dissatisfaction with healthcare provision for women following miscarriage, and are less able than qualitative studies to elicit perceptions of care. One of the main findings in relation to satisfaction was the receipt of compassionate care, whilst dissatisfaction was mainly in relation to a lack of follow up. Previous studies have identified that care for women could be improved to better meet their psychological needs (Washbourne and Cox 2002), including a lack of follow up (Paton et al. 1999; Cecil 1994; Thapar and Thapar 1992; Friedman and Gath 1989).

The following section will detail the aspects of care that women were most and least satisfied with:

### ***Compassionate Care***

In Phase 2, participants described compassionate care as helpful; women expressed a desire for and received sensitive, empathic and supportive healthcare professionals who provide effective communication in an individualised and responsive way, and this was thought to be invaluable in enhancing psychological wellbeing. Knowing that there was someone who cared about them and with whom they were able to build a trusting relationship with, was valued by women. These findings concur with previous studies (Stratton and Lloyd 2008; Bansen and Stevens 1992), and current guidelines (NICE 2012).

In Phase 2, women valued the emotional and physical presence of a midwife who has time to care. Women also valued having a midwife who has time to explain the choice of treatments. The importance of choice has been associated with positive life outcomes (RCOG 2006), and

is part of the role of the midwife as described in The Code (NMC 2015) where care prioritises women's needs, including informed choice.

Compassionate sensitive midwifery care with informed choice was clearly evident, and demonstrates the importance of emotional support; supporting previous literature (Hunter 2001). Participants appear to want a caring relationship with their healthcare professional and one that acknowledges them as an individual, and to feel that they are listened to.

In support of previous research by Marquardt (2011), women who had visited their GP found it was helpful, as it was someone to talk to for informational support, helping them realise they were not to blame, especially where the GP had an awareness of the impact on the woman's psychological wellbeing.

The relationship between the healthcare professional and the woman was important in the provision of compassionate care, which may enhance women's psychological wellbeing. The qualitative study emphasises the importance of a holistic and person-centred approach to support women and their partners post miscarriage, supported by NICE Guidelines (2012) and The Code (NMC 2015) where care and compassion are at the centre of practice, prioritising women's needs.

### ***Poor experience of care***

In contrast to high levels of satisfaction reported in the quantitative results, there was evidence of poor experiences of care within the qualitative responses. This was in relation to lack of follow up, poor communication and insensitive care brought about by a lack of awareness amongst healthcare professionals of the impact of miscarriage on women's and their Significant Other's psychological wellbeing, confirming other findings (Nikcevic 2003). Such lack of care and awareness left women feeling uncared for and supports previous findings of isolation where women want more interaction with healthcare professionals on an emotional level (Murphy and Philpin 2010; Adolfsson et al. 2004; Harvey et al 2001; Wiebe and Janssen 1999; Cecil 1994; Bansen and Stevens 1992). There is a need to ensure all episodes of care strengthen relationships between the individual woman, her Significant Other and the healthcare professionals to enhance psychological wellbeing. Previous literature has identified that in practice that there is little attention given to improving these aspects of care (Hunter et al. 2008).

### ***Follow up care***

Although follow up is recommended in current guidelines (NICE 2012) a low proportion of women received follow up care at 6 and 13 months; even women meeting clinical caseness

for anxiety or depression are not being followed up. In terms of receiving follow up care, less than 20% received it at baseline, 6 or 13 months, whilst 30-51% indicated a desire for it. In line with Wong et al. (2003), there is a clear gap between the provision of and the need for follow up care. Although follow-up may not be imperative for all women (Adolfsson, Bertero and Larsson 2006), almost half wanted it at 13 months. The low provision of follow up care may in part be due to lack of guidance; although follow up to enhance psychological wellbeing is recommended (NICE 2012), there is no guidance on what should be included, who provides it or when it should be provided. There is limited research in this area.

Whilst those working within NHS Scotland share a vision for high quality healthcare service provision (Scottish Government 2010), the lack of follow up for those who wish to receive follow up demonstrate that in terms of healthcare provision for women after miscarriage, quality needs to be improved.

The low number of women reporting receipt of follow up may partly be due to different perceptions of what 'follow up care' actually is, given the range of support available. The different types of follow up support available for women within the NHS are; accessing support from a midwife, GP or health visitor. In addition, many EPAU provide information leaflets about miscarriage provided by the Miscarriage Association, with details to enable women to contact them for support. There are also online resources such as websites like NHS Choices, directing women to relevant information, for those in need of informational support.

Despite evidence of the effectiveness of interventions for psychological distress amongst the general population (NICE 2011), participants with heightened anxiety were not routinely referred to psychological services, or receiving appropriate follow up support.

The lack of follow up provided, may result from the lack of evidence that interventions are indeed effective in reducing psychological distress post miscarriage (Murphy, Lipp and Powles 2012). As noted earlier, however, such evidence is based on research that includes women with a range of distress; it is therefore difficult to identify the benefit for those in need of intervention. In addition, given the limited research aimed at identifying the predictors/moderators of wellbeing following miscarriage; such interventions are neither evidence-based nor grounded in theory. Interventions that are grounded in theory may potentially have a greater effect.

The first NHS guideline on miscarriage care raises the importance of the need for compassionate and supportive care, placing considerable emphasis on the need for effective emotional support, quality information giving and the offer of follow-up (NICE 2012). However,

much of the literature is limited by small numbers of participants and includes all women, rather than a targeted intervention for women who have an increased need for psychological support.

The provision of follow up would provide an opportunity to clarify understanding or misconceptions concerning the cause of miscarriage to help them to adjust (Nikcevic and Nicolaides 2014, Wong et al. 2003). Nikcevic and Nicolaides (2014) in a longitudinal study established that finding meaning was important in many peoples' process of adjustment, and that information about the cause of the loss facilitates finding meaning.

Lack of follow up was evident in the qualitative findings within Phase 1 and Phase 2 and concurs with previous studies (Wong et al. 2003; Harvey, Moyle and Creedy 2001). Women who experience miscarriage want follow up, and women who want follow up actually need it, which is supported by previous studies (Sejourne, Callahan and Chabrol 2010; Stratton and Lloyd 2008; Nikcevic et al. 1998). Many women interpret the lack of follow-up as a failure by healthcare professionals to recognise the significance of the impact of miscarriage on psychological wellbeing. A lack of follow up results in concerns about self-blame remaining unaddressed, leaving some women anxious and with lower wellbeing. This supports previous study findings (Sejourne, Callahan and Chabrol 2010; Nikcevic et al. 1998). A recent survey also found that feelings of guilt and shame are common after miscarriage, where only 45% believed they had received adequate emotional support from healthcare professionals (Williams 2015).

In the qualitative study all participants indicated that they would have liked follow up support; however most do not remember being offered it. Whilst the offer of follow-up for women after miscarriage is recommended (NICE 2012), these findings suggest the offer is too soon for participants to know if they require it or not. Women following miscarriage are in a vulnerable state before leaving hospital, and may not realise the enormity of what has happened until they get home, which may interfere with a woman's ability to receive information clearly (Lee, Slade and Lygo 1996).

This represents a lost opportunity for healthcare professionals to detect and respond to psychological morbidity post miscarriage (Klein et al. 2012) whilst also failing to meet Scottish Intercollegiate Guidelines Network guidance (SIGN; Health Improvement Scotland 2012) that women with or who are at risk of mental health problems, should receive extra support at all stages of pregnancy and beyond.

There was no evidence of women attending support groups following miscarriage, however there was some evidence that participants went online for information, which was not always felt to be helpful. Findings further indicated that those women, who were pregnant or had given



birth by 13 months, want more sensitive and supportive care from healthcare professionals in a new pregnancy, which concurs with the findings of Sejourne, Callahan and Chabrol (2010).

For the few women who did receive follow up however, it does not appear to be enhancing psychological wellbeing, therefore supporting the insufficient evidence base for intervention (Murphy et al. 2012). However, lack of follow up in this study means that there is no opportunity of healthcare professionals to provide informational and emotional support or to reduce self-blame for those that feel responsible for the miscarriage, supported by previous research (Nikcevic and Nicolaides 2014; Marquardt 2011).

### ***Poor communication***

Despite the need for high quality communication between healthcare professionals, women and their families, as central to the provision of excellent maternity care (Nursing and Midwifery Council, The Code 2015; Scottish Government 2011), there was evidence of poor communication. Participants also felt that healthcare professionals need to improve the support provided to their partner, to ensure informational support includes how they can support each other; in addition to which type of support is likely to influence women's psychological wellbeing and who to turn to should they feel they are not coping.

### ***Lack of awareness of impact of miscarriage amongst healthcare professionals***

In support of Lasker and Toedter (1994) women identified the need for the provision of miscarriage care away from maternity wards. Many women felt this indicated a lack of awareness of the impact of miscarriage amongst healthcare professionals. Whilst NHS resources are finite, there is a need to recognise and value women's experiences.

The above findings suggest that health care professionals do not have the necessary skills or confidence to provide effective follow up support and identify women in need of follow up, with limited research examining this.

## **7.3 Implications for Practice**

### ***Creating health and psychological wellbeing***

Salutogenesis is a valuable health promoting resource, which can enhance psychological wellbeing (Eriksson and Lindström 2006) by increasing resilience and reducing self-blame; resulting in an increased sense of coherence to help make miscarriage comprehensible, meaningful and manageable for women. The midwife, together with the woman, needs to focus on finding and exploring these protective factors, to encourage the woman's capacity to enhance her psychological wellbeing.

Comprehensibility could be increased, starting from the individual woman's point of view, by raising awareness of her own coping style, and therefore encouraging her to employ a more adaptive coping style where there is self-blame, such as reducing self-blame or avoidance for those who blame themselves or are avoidant. Previous studies suggest that follow up should focus on guilt and self-blame, to reduce self-blame which may impact on psychological wellbeing (Griebel, Halvorsen, Golemon and Day 2005; Adolfsson et al. 2004; Barr 2004; Franche 2001; Nikcevic et al. 1998). Exploring these types of thoughts and behaviours may significantly reduce levels of anxiety and depression.

The manageability component needs to focus on supporting the woman to find resources to help her adjust in a more supportive environment such as enhancing her social support network. Maker and Ogden (2003) noted that women who were able to compare their situations with others' had improved self-esteem, demonstrating the benefit of speaking to women who have personal experience of miscarriage. By speaking to other women who experience miscarriage, self-blame is also reduced. Helping women to use a task focused coping style, increasing levels of perceived control along with increased positive emotionality (Swanson 2000), may increase resilience to protect the individual. Sejourne, Callahan and Chabrol (2010) found the most frequently used strategy for coping with miscarriage was seeking information, which provides further support for follow up. The meaningfulness component needs to ensure each woman is involved in decision making, so that she feels empowered in a way that increases her capacity and ability to take responsibility for her health, thus increasing her internal health locus of control (Franche and Mikail 1999).

Whilst social support and healthcare provision are important, it seems that a change in the way women cope is most important, particularly in the reduction of self-blame and avoidant coping styles.

Being able to share their experiences with others and express emotions needs a climate of trust and empathic social support over time. Further research is needed to identify those with maladaptive coping strategies and design interventions to help them change. Whilst coping style is influential in positively enhancing psychological wellbeing, the lack of follow up means that those with maladaptive coping strategies are not identified and supported.

Research findings about the desire and need for follow up support should be acted upon, if women's psychological wellbeing is to be enhanced and their experiences are to influence healthcare provision. The lack of follow up care means that those in need of emotional support following miscarriage are currently unmet (Mclean and Flynn 2013; Rowlands and Lee 2010a; Cumming et al. 2007).

The development and testing of theory based intervention strategies are warranted. Evidence based training for healthcare professionals is also needed, to help them address potentially sensitive topics with women and their partners. Healthcare professionals need to help couples gain factual information about miscarriage prevalence and challenge beliefs that foster self-blame, shame and guilt, whilst trying to increase resilience. Luther and Brown (2007) have emphasised that the theory of resilience is about relationships; and in this study social support was important in influencing psychological wellbeing over time. Enhancing the protective factors within the individual (self-help skills, positive self-concepts, strong motivation to achieve); protective factors within the social support network (supportive family including extended family, close bonds with healthcare professionals) and protective factors in the community (e.g. supportive close peer friends), may help to explain individual resilience (Werner 1990).

High feelings of personal responsibility and lowered personal resources results in higher anxiety and depression amongst women following miscarriage (Nikcevic et al. 1998). Nikcevic et al. (2000) found that a follow up appointment improves women's psychological wellbeing and reduced self-blame, as it facilitates women's understanding of and feelings regarding their loss. There is a need for greater sensitivity to what is currently an unmet need for psychological care (Kong et al. 2010).

Resilience training programs may help to enhance psychological wellbeing following miscarriage for women and their partners. Davydov et al. (2010) believe that improving resilience and interpersonal relationships can protect individuals from mental health problems, improving the ability to adapt and cope with adversity. These typically allow participants to establish their own version of their life experience, by identifying, managing and discussing emotions; identifying and building on their strengths, informational support by clarifying misunderstandings and respecting individual opinions, in addition to adaptive coping styles such as problem solving to empower the participant (Nathanson 2014).

Evidence from this study indicates a negative impact on psychological wellbeing following miscarriage; however women in need of follow up are not receiving it. This study shows that anxiety is heightened following miscarriage over time, and whilst there are a number of policy documents and guidelines produced to increase detection and management of mental health issues in pregnancy (i.e. National Institute for Health and Clinical Excellence 2014; Scottish Intercollegiate Guidelines Network 2012), women after miscarriage are not being identified for follow up. There is a crucial window of opportunity to enhance psychological wellbeing for women, their partners and their future pregnancies, which is currently unmet.

Maternity services need to value the relationships within them (Hunter et al. 2008), and Phase 2 found that compassionate care from a midwife was valued by women, therefore these midwifery skills which enhance women's psychological wellbeing following miscarriage, need to be strengthened further. Mander (2006) found that support whilst generally is considered beneficial, ill-informed actions can not only be unsupportive, but also damaging, where unintended positive messages may be hurtful and more damaging. In the midwifery environment, there are lost opportunities to better support women following miscarriage in a way that is individualised, person-centred and likely to enhance psychological wellbeing.

Current practice to identify those in need of follow up is lacking. This may be reflected in the fact that no standard of care exists within the healthcare system for the treatment of and attention to the emotional consequences that women may experience following miscarriage (Geller, Psaros and Kornfield 2010). Using questionnaires to assess wellbeing, resilience and coping style may help identify women in need, however interventions that enhance psychological wellbeing, need to be further researched.

### ***Recommendations for change in practice***

#### ***Screening***

It is important to screen women after miscarriage to assess psychological wellbeing, proactively identifying those who are in need of follow up, and offer follow up in line with current NICE guidelines (2012). Whilst interactions with primary health care professionals are important, referral to psychological services may be more relevant, for those who remain anxious after follow up.

#### ***Subsequent Pregnancy***

The findings also have implications for care in future pregnancies. Anxiety is elevated in some women who experience miscarriage, which may negatively affect the next pregnancy. Hogg (2013) suggests that where perinatal problems are not managed effectively, women suffering from maternal mental illnesses in pregnancy and during the early years of their child's life can have adverse effects on their child's brain development with long term outcomes. As demonstrated in this study, women in the next pregnancy after miscarriage are more anxious, consequently innovative psychosocial services are needed for mothers and support providers to deliver optimal care (Kwee and McBride 2015).

However, if women are anxious, this needs to be addressed pre-conceptually in an attempt to reduce anxiety in the next pregnancy and provide optimal care for women and their partners following miscarriage. Preconception care provides an excellent opportunity for evaluation

regarding reproductive life choices, health issues and behaviours, to increase the health of prospective parents, to ensure that they are at the peak of health potential just prior to and during organogenesis, to enhance the health of the mother as well as the developing fetus (Burden and Jones 2004).

These results emphasize the need for healthcare providers to screen women who experience miscarriage, to decrease anxiety in a subsequent pregnancy. The potential negative impact of high anxiety on future pregnancies and infants (van Dijk., et al. 2012; Cote-Arsenault and Dombeck 2001), however, provides further evidence for the need to intervene and help women enhance psychological wellbeing after miscarriage.

### ***Education and Training***

The results and findings from this study have identified the strongest predictors of psychological wellbeing. There is an increasing level of interest in the potential for a salutogenic perspective and this study is likely to appeal to the NHS, and educational institutions that provide education for professionals who support women following miscarriage, including midwives, nurses, health visitors and GPs.

There are significant training needs for healthcare professionals and other service providers, which has also been identified in a recent systematic review (Radford and Hughes 2015), to increase effective practice in this field. Education needs to include the theories that support the enhancement of psychological wellbeing, as well as women's experiences of miscarriage, to increase knowledge so that the care that is provided enables human flourishing. Healthcare professionals with a high level of knowledge and skill in this area, such as specialist midwives, could share best practice, so that this can be replicated to provide more effective care.

NHS Education Scotland (2012) examined bereavement care training and education across the NHS and Higher Education Institutes in Scotland, and found a need to extend the provision and uptake of bereavement modules for healthcare professionals to include supervision and practice based assessment.

This study suggests that more research is needed to help improve understanding of the complexities associated with psychological care following miscarriage for women and their families.

### ***Recommendations for Training***

- Education and training should include the theories of bereavement and theories that support the enhancement of psychological wellbeing and human flourishing.

- Raise awareness amongst healthcare professionals of the impact of miscarriage on women's psychological wellbeing, which should also include their Significant Other and the wider family.
- Training to enable healthcare professionals to identify those in need of follow up and those in need of psychological services.
- Education to assist healthcare professionals with follow up care, to increase effective practice in this field.

#### **7.4 Recommendations for Future Research**

A number of recommendations for further research emerge from the findings of these studies. There is a need for further research to test the protective factors, to establish if appropriate interventions can be designed to reduce psychological distress for those who want and need follow-up, to minimise the longer term impact for women and their families.

Even if effective interventions were made available, however, the study indicates that women are either not engaging with or being offered follow up care. In order for interventions to work they need to be easily accessible to all women in need of them. A study that examines the current provision of and factors that impact on provision and engagement with follow up care is, therefore needed. In addition to women who experience miscarriage, it is recommended that this work involves key stakeholders in the acute and community settings. Lack of follow up results in lost opportunities to enhance psychological wellbeing, which for some women will impact on health and mental health over time (Cumming et al. 2007).

Failure to offer follow up care may result from a lack of training or understanding amongst health care professionals. If care for women following miscarriage is to improve, midwives need access to education and training to develop the confidence and knowledge to enable them to identify women with psychological distress, to increase identification and thus referral of women to psychological services. Downe et al. (2013) in a qualitative study with women following stillbirth found that healthcare professionals need to be supported and encouraged to recognise and respond to women who have psychological distress, this also has the potential to benefit women after miscarriage. However, it could be argued that by providing training and education to enable health carers to understand the factors that help or hinder adjustment following miscarriage, which is more common than stillbirth, would result in midwives who are more likely to get it right for women and their partners following any pregnancy loss.

Reducing self-blame and avoidant focused coping style are also crucial, as these were the most influential factors in terms of anxiety and depression. Interventions that focus on making

meaning of the loss for women and their partners in order to reduce self-blame (Swanson, Pearsall-Jones and Hay 2002) and avoidant coping strategies warrant further research in the miscarriage population.

The scoping of education and bereavement care identified a paucity of research or evaluation of interventions and resources for education and training for bereavement care in the UK (NHS Education Scotland 2012). No such research, however, has been carried out in the miscarriage population. In addition, a new Bereavement Care Network Website was recently launched (Royal College of Midwives 2015); however it does not include miscarriage or The Miscarriage Association. The importance of competence in the carer to enable effective support to help women and their partners to cope more healthily with miscarriage, especially for those who want and need follow up support, shows that proactive educational resources are needed for healthcare professionals.

In terms of measuring psychological wellbeing from a salutogenic perspective opposed to a pathological perspective, the current findings indicate that the WEMWBS is able to distinguish between women with and without miscarriage, whilst also identifying predictors of enhanced mental wellbeing within these groups. Further research in this population however is needed to test its validity and reliability in evaluating mental wellbeing with women who have experienced early pregnancy loss.

Resilience was the most important factor in enhancing psychological wellbeing over time. The limited research on resilience in this population and the implementation of a resilience strengthening intervention would be worthy of further investigation, particularly for at risk groups (Luthar, Cicchetti and Becker 2000). To date, there is no literature on whether there are differences in terms of resiliency, and the effect this has on psychological wellbeing after miscarriage. Further research is needed to examine levels of support to enhance resilience amongst women after miscarriage.

No controlled studies, however, have assessed the impact of a resilience program for women who are at risk of psychological distress following miscarriage to date.

### **7.5 Limitations of the Study**

There are a number of limitations worthy of note. The low response rate and small sample size may have adversely affected the results of the study, and therefore cannot provide an entirely convincing rationale for the recommendations.

Sensitive topics such as miscarriage, make researching them more complex, especially where participants are examined over a period of time. There is evidence that those who are most

affected by traumatic events do not take part in research about the event (Weisaeth 1989), suggesting that non-participants may be experiencing more rather than less psychological distress (Broen et al. 2006).

In terms of the qualitative study, one participant withdrew consent to take part as she had received a diagnosis of postnatal depression, supporting Broen et al. (2006). Low response rates suggest that there is no certainty that the responses represent the views of the population, and therefore result in a biased response. Generalisations from this group are therefore limited. However, there is not necessarily a relationship between response rate and bias (Asch, Jedrzejewski and Christakis 1997) and the findings are in line with previous research in the area of miscarriage.

The study is focused on one area in Scotland in two hospital settings within the same Health Board; which is not representative of Scotland as a whole. The level of economic deprivation in Grampian is below the national average for Scotland and is considerably lower than other Scottish urban areas (Scottish Government 2013). Therefore it would be beneficial to consider how the findings could be applied to similar contexts and other hospital based EPAU services, but recognises that these findings may not apply to all clinical areas. The sample was not randomly selected and cannot be generalised to the entire population. The participants were white and responses from women from other ethnic groups may differ significantly from those reported here. Recruitment took place in the hospital setting, those who experience outpatient care through their GP, or alternative care including those who do not receive care, may differ. Attrition was low, however the participants, who dropped out before returning all three questionnaires, may have been different from those who did not drop out, however there were no differences reported in terms of age, education and socio-economic status in the quantitative data (see Appendix 9).

## **7.6 Conclusion**

A significant proportion of women following miscarriage experience elevated levels of anxiety and depression and have lower wellbeing scores than women without miscarriage. Over time, however, whilst wellbeing increases and depression appears to lessen, anxiety remains elevated. A number of protective factors were identified, namely a lower number of major life events, higher internal and lower chance health locus of control, higher social support from Significant Other and family, higher task, lower avoidant focused coping and self-blame coping styles, in addition to higher resilience.

The two factors most strongly related to anxiety and depression were self-blame and avoidant coping, whilst wellbeing was most strongly related to resilience. These protective factors



remained relatively constant over time and may offer a means of identifying and supporting women in need of follow up. This study has identified that self-blame and resilience appear to be the most influential in moderating the impact of miscarriage on psychological wellbeing up to 13 months post miscarriage; future work is therefore needed to determine why these are protective and whether interventions based on these findings can make an impact on psychological wellbeing.

The high prevalence of miscarriage makes it an important clinical issue, further research is needed to examine factors that enhance psychological wellbeing in controlled studies; especially self-blame, resilience and coping style. There is a need to further understand how and why they moderate psychological wellbeing, to determine the factors or techniques that can enhance resilience and reduce self-blame in this population and to devise interventions to address this. Even with such interventions however, a process needs to be in place to identify women in need of them and ensure they are followed up. Current identification of those in need and provision of follow up care was shown to vary considerably.

There is increased interest in salutogenesis and human flourishing within government policy documents (Scottish Government, 2009), however it is still in its infancy as regards to practically implementing this approach (Brooks et al. 2012).

This study supports the need for healthcare professionals to identify women in need of follow up to: (1) strengthen resilience thereby making miscarriage more comprehensible, meaningful and manageable (2) encourage adaptive coping strategies to empower couples i.e. to reduce self-blame for those that blame themselves for the miscarriage and to reduce avoidant focused coping for those that are avoidant, (3) provide compassionate care in addition to follow up for those who want and need it, (4) provide informational support about miscarriage for women and their partners, to enhance psychological wellbeing and human flourishing. Whilst all women should be offered follow up, (NICE 2012), the timing of the offer needs to be when women are able to make a decision as to whether they feel they will need it or not.

Midwives are in a good position to use their advocacy role to enhance women's health and wellbeing, and are concerned with the promotion of positive psychological wellbeing, as well as the prevention of psychological distress (Department of Health: Midwifery 2020). For this to happen, salutogenesis and human flourishing need to be a part of contemporary midwifery practice and midwifery education.

This study revealed many novel insights regarding women's experience of miscarriage, identifying the protective factors that buffer the effects of miscarriage on psychological wellbeing over time. Coping theory holds promise for understanding the variability in women's

responses to miscarriage, which supports previous findings (Swanson 2000). The task for the holistic healthcare professional is to support and listen to women's experiences, whilst also exploring these factors that enhance psychological wellbeing, enabling women to make sound informed choices (Lindström and Eriksson 2006). Empowering midwives to transform healthcare provision for women who experience miscarriage should be a key priority, with bereavement care training and education to include supervision and practice based assessment (NHS Education Scotland 2012).

This study makes a unique contribution to the miscarriage literature, firstly because of the salutogenic perspective (Antonovsky 1987), which improves understanding of the factors that predict enhanced psychological wellbeing, rather than focusing on illness. This perspective views health as a resource for life and direct actions to solutions (Eriksson 2014). This supports current health policy, to improve the quality of care and support provided by NHS services, for women who require early psychological intervention (Scottish Government 2011).

This study was successful in determining the prevalence, predictors and levels of psychological wellbeing amongst participants with miscarriage compared to women without miscarriage. It was also successful in identifying levels of psychological wellbeing amongst participants with miscarriage across time, in addition to the predictors of enhanced psychological wellbeing across time. Phase 2, further expanded our understanding of the nature and focus of such wellbeing by exploring the predictors of enhanced wellbeing, as identified in Phase 1, contributing to knowledge. The study aims and research objectives were achieved, and can inform changes in practice and education for healthcare professionals to help enhance psychological wellbeing amongst women who experience miscarriage, as well as inform the future research agenda.



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## APPENDIX 1



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### ***Study Protocol Flow Chart Example of Prospective Group Phase 1 & 2***

#### Step 1: Identification for eligibility:

1. Miscarriage occurs i.e. loss before 23 weeks of completed pregnancy
2. Woman attends Early Pregnancy Assessment Unit
3. Inclusion/exclusion criteria are established by midwife as follows:

##### Include woman if she:

1. Is over 16 years of age
2. Speaks and able to understand written English

##### Exclude woman if she:

1. Has a viable ongoing pregnancy e.g. twin pregnancy, threatened miscarriage
2. Has had an ectopic pregnancy

#### Step 2: Recruitment and informed consent

1. Subject to meeting inclusion criteria above, midwife will provide woman with an envelope containing the information sheet, consent form to be signed and freepost envelope for posting back to RGU.
2. On receipt of the signed consent form, the researcher will issue a unique personal identification number
3. Within 1 month of miscarriage, the researcher will send out the Prospective Group Baseline Questionnaire and freepost envelope to consenting women

#### Step 3: Baseline Assessment

##### Return within 2 weeks

1. On receipt of questionnaire monitor for HADS  $\geq 11$  and refer to Professor Grant Cumming for review
2. GP contacted by Professor Cumming if necessary

##### Non-return within 2 weeks

1. Send out a reminder with freepost envelope
2. If returned, monitor for HADS  $\geq 11$  and refer to Professor Grant Cumming for review
3. GP contacted by Professor Cumming if necessary

#### Step 4: 6 Month Follow Up. Researcher will send out Prospective Group 6 Month Follow Up Questionnaire and freepost envelope to consenting women who returned a completed Prospective Group Baseline Questionnaire

##### Return within 2 weeks

1. On receipt of questionnaire monitor for HADS  $\geq 11$  and refer to Professor Grant Cumming for review
2. GP contacted by Professor Cumming if necessary

##### Non-return within 2 weeks

1. Send out a reminder with freepost envelope
2. If returned, monitor for HADS  $\geq 11$  and refer to Professor Grant Cumming for review
3. GP contacted by Professor Cumming if necessary

#### Step 5: 13 Month Follow Up. Send out Prospective Group 13 Month Follow Up Questionnaire and freepost envelope to consenting women who have returned a completed Prospective Group Baseline Questionnaire and or Prospective Group 6 Month Follow Up Questionnaire.

##### Return within 2 weeks

1. On receipt of questionnaire monitor for HADS  $\geq 11$  and refer to Professor Grant Cumming for review
2. GP contacted by Professor Cumming if necessary

##### Non-return within 2 weeks

1. Send out a reminder with freepost envelope
2. If returned, monitor for HADS  $\geq 11$  and refer to Professor Grant Cumming for review
3. GP contacted by Professor



**Step 6 Phase 2 Qualitative Study: Exploring women's views and experiences**

1. Examine responses to the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS) for criteria for inclusion in Prospective Group Baseline Questionnaire, Prospective Group 6 Month Follow Up Questionnaire and Prospective Group 13 Month Follow Up Questionnaire. Based on the criteria below, and to ensure a broad range of reproductive status represented, choose a random sample of consenting women and invite for interview

Criteria for inclusion based on responses to the WEMWBS choose:

- 2 women who have a high WEMWBS score in the Prospective Group Baseline Questionnaire, Prospective Group 6 Month Follow Up Questionnaire and Prospective Group 13 Month Follow Up Questionnaire
- 2 women who have a low WEMWBS score in Prospective Group Baseline Questionnaire, who demonstrate enhanced wellbeing by a move to a higher WEMWBS score in Prospective Group 6 Month Follow Up Questionnaire and/or Prospective Group 13 Month Follow Up Questionnaire
- 2 women who have high WEMWBS scores in the Prospective Group Baseline Questionnaire whose wellbeing declines by lowering their WEMWBS score in Prospective Group 6 Month Follow Up Questionnaire and/or Prospective Group 13 Month Follow Up Questionnaire
- 2 women who have low WEMWBS scores in the Prospective Group Baseline Questionnaire, Prospective Group 6 Month Follow Up Questionnaire and Prospective Group 13 Month Follow Up Questionnaire

Criteria for exclusion:

- Women with a previous history of mental health issues identified during Phase 1
  - Women who wish not to be contacted for interview stage identified at Phase 1 or 2
2. If consented to be contacted for the interview stage during the consenting procedure at Phase 1 & 2, and they fit the inclusion criteria above, send out the Participant Information Sheet, Consent Form and freepost envelope
  3. On receipt of a signed consent form, researcher makes contact, arranges and conducts the interview at a place and time to suit the interviewee
  4. All interviewees will receive the Debrief Sheet on completion of the interview

## **APPENDIX 2**



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### ***Example of the Participant Information Sheet***

#### **Prospective Group**

#### **Psychological Wellbeing Following Miscarriage**

You are being invited to take part in a research study to investigate the impact of miscarriage on women over time. Before you decide whether or not to take part in it, it is important for you to understand why the research is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. Ask us if there is anything that is not clear or if you would like more information. Take time to decide whether you wish to take part.

#### **What is the purpose of the study?**

Miscarriage can cause emotional reactions and problems of adjustment for some women, and this study aims to gain a deeper understanding of how individuals cope and their support needs during this time. This study will enhance our understanding of how women should be supported following miscarriage and how care can be improved.

#### **Why have I been chosen?**

We are inviting women who have had a recent miscarriage to take part in the study. You have been chosen because you have had a recent miscarriage, and we would like your views and experiences following your miscarriage.

#### **Do I have to take part?**

No. It is up to you to decide whether or not to take part. If you do decide to take part, you will be given this information sheet to keep and be asked to sign a consent form. If you do decide to take part, you are still free to withdraw at any time and without giving a reason. A decision to withdraw at any time, or a decision not to take part, will not affect the standard of care you receive.

#### **What will happen to me if I take part?**

You will need to sign and return the consent form agreeing to participate in the study. You will then receive the first questionnaire to complete, which you should do as soon as possible after your miscarriage and return it in the freepost envelope. You will be sent another two questionnaires to be completed at 6 months and 13 months following your miscarriage.

A small number of participants will also be invited to take part in an interview. If you are interested in taking part in this stage, please complete and sign the additional enclosed consent form. You will be asked to answer questions around your experiences of miscarriage. The interview will last no longer than 60 minutes and will be recorded on audiotape, taking place at a time and location to suit you. The interview will take place after you have completed the final questionnaire at 13 months. Please be aware there is no obligation to take part in the interview. If you decide to volunteer for this now then change your mind and no longer wish to participate in the interview, you can withdraw and your care will not be affected.

#### **What happens if I become pregnant?**

If you become pregnant during the study, you can still take part in the study and there will be a box for you to tick notifying us of your pregnancy.

#### **What are the possible disadvantages and risks of taking part?**

There are no known major risks for you in participating in the study, however if you find that taking part upsets you, please feel free to contact your GP, local midwife or health visitor. There are also support networks such as The Miscarriage Association who are available to provide support for you if necessary online at <http://www.miscarriageassociation.org.uk/> or by phoning their helpline on 01924200799 which is open during office hours - Monday to Friday 9am-4pm.

**What are the possible benefits of taking part?**

This study may not benefit you directly, however very little is known about how best to provide information and support following miscarriage. The information we get from this study may help us to understand more about women's experience of miscarriage, so that support can be tailored to meet their needs, for future women following miscarriage.

**What if something goes wrong?**

In the unlikely event that there is a problem or if you are unhappy at any point in time with regards to any matter during the study, please do not hesitate to contact Anne Marie Rennie on 01224 263065.

If you wish to complain formally, or have any concerns about any aspect of this study, please contact Dr Katrina Forbes-McKay on 01224 263211 or Dr Sarah Henderson 01224 263241.

**Will my taking part in this study be kept confidential?**

All information which is collected about you during the course of the research will be kept strictly confidential. You will be given a unique Personal Identification Number which links you to your name and address, so that we can send you the questionnaires. Any information about you will have your name and address removed, so that you cannot be recognised from it. Your results will be stored electronically in a secure manner on a computer within Robert Gordon University which is user protected by means of a password. Data will also be stored in locked cabinets in a secure office.

Your own GP may be notified of your participation in the study, if the research team have any concerns. Only women who consent to their GP being informed, if necessary, will be included in the study.

**What will happen to the results of the research study?**

The results of the research will be published in a relevant journal and this is likely to be around 2016. If you wish to obtain a summary of the results, please contact Anne Marie Rennie on 01224 263065. You will not be identified in any report or publication.

**Who is organising and funding the research?**

Robert Gordon University have organised and supported the study.

**Who has reviewed the study?**

The North of Scotland Research Ethics Committee has reviewed and granted permission for the study to take place.

**Contact for Further Information**

If you wish further details about this study, our researcher Anne Marie Rennie will be pleased to discuss it with you. Her contact details are Tel: 01224 263065 or email address at [a.m.rennie@rgu.ac.uk](mailto:a.m.rennie@rgu.ac.uk)

You may prefer to contact the academic supervisory team either Dr Katrina Forbes-McKay on 01224 263211 or Dr Sarah Henderson 01224 263241.

Thank you for reading this and for considering taking part in this study.

### **APPENDIX 3**



**ROBERT GORDON  
UNIVERSITY•ABERDEEN**

#### **Psychological wellbeing following miscarriage: Exploring women's views and experiences.**

##### **Debrief Sheet**

Thank you for your participation in this study.

If you have any questions following your participation, please feel free to contact Anne Marie Rennie, whose contact details are given below.

Having shared your views and experiences, you have enhanced our understanding of how women should be supported following miscarriage and how care can be improved.

If you wish to obtain a summary of the results, please contact Anne Marie Rennie on 01224 263065.

If, for any reason, you feel upset, confused or just want someone to talk to about your miscarriage, please feel free to contact your GP, local midwife or health visitor.

There are also support networks such as The Miscarriage Association who are available to provide support for you if necessary online at <http://www.miscarriageassociation.org.uk/> or by phoning their helpline on 01924200799 which is open during office hours - Monday to Friday 9am-4pm.

**Thank you for your participation, we greatly appreciate your time and input.**

##### **Study Contact Details.**

Anne Marie Rennie Tel: 01224 263065 email address: [a.m.rennie@rgu.ac.uk](mailto:a.m.rennie@rgu.ac.uk)

Alternatively, contact the academic supervisory team Dr Katrina Forbes-McKay on 01224 263211 or Dr Sarah Henderson 01224 263241.



**ROBERT GORDON  
UNIVERSITY•ABERDEEN**

# Psychological Wellbeing Following Miscarriage: Comparing women who have never experienced miscarriage

## Comparative Group

Thank you for completing this questionnaire and sharing your views with us. Please answer **all** of the questions that are applicable to you.

You may come across some questions which are phrased in an unfamiliar manner. However, please do your best to answer them. The reason we have not changed their wording is because they derive from scales widely used in other research. Please do not hesitate to contact Anne Marie Rennie if you would like further clarification on tel: 01224 263065 or email: [a.m.rennie@rgu.ac.uk](mailto:a.m.rennie@rgu.ac.uk)

Unique Participant ID:

Today's date: ...../...../.....

## SECTION A: PERSONAL DETAILS

These questions are all about you.

**A1. How old are you?** .....years

**A2. Marital status:**

(Please tick one box only)

Single, never married

☐

Single through divorce / separation

☐

Single, widowed

☐

Living with partner (but not married)

☐

Married

☐

**A3. Time with current partner** (if applicable) .....years .....months

**A4. What is the highest level of education you have gained?**

(Please tick highest level only)

No formal qualification

☐

Standard Grade / GCSE

☐

Higher / A level

☐

Vocational qualification

☐

College (i.e. HNC / HND)

☐

Degree

☐

Higher Degree

☐

**A5. What type of accommodation do you live in?**

(Please tick one box only)

Home owner

☐

Private rental

☐

Council rental

☐

Living with your parents

☐

Other (please state)

☐

.....

**A6. How do you describe your ethnic group?**

The term ethnic origin is to describe where your family originates from, as distinct from where you were born.  
(Please tick one box only)

White British	<input type="checkbox"/>	Indian	<input type="checkbox"/>
White Irish	<input type="checkbox"/>	Pakistani	<input type="checkbox"/>
Chinese	<input type="checkbox"/>	Bangladeshi	<input type="checkbox"/>
White and Black Caribbean	<input type="checkbox"/>	African	<input type="checkbox"/>
White and Black African	<input type="checkbox"/>	Caribbean	<input type="checkbox"/>
White and Asian	<input type="checkbox"/>	<b>Other</b> Asian	<input type="checkbox"/>
<b>Other</b> mixed	<input type="checkbox"/>	<b>Other</b> Black	<input type="checkbox"/>
<b>Other</b> ethnic group not stated	<input type="checkbox"/>	<b>Other</b> White	<input type="checkbox"/>

If **other**, please specify.....

**A7. Your main employment status:**

(Please tick one box only)

Managerial / Professional	<input type="checkbox"/>
Skilled worker	<input type="checkbox"/>
Unskilled worker	<input type="checkbox"/>
Student	<input type="checkbox"/>
Housewife	<input type="checkbox"/>
Unemployed	<input type="checkbox"/>
Other (please state)	<input type="checkbox"/>

.....

If employed, are you: Full-time?	<input type="checkbox"/>
Part-time?	<input type="checkbox"/>

**A8. Your current reproductive status:**

(Please tick one box only)

Not actively trying for a baby	<input type="checkbox"/>
Actively trying for a baby	<input type="checkbox"/>
Pregnant	<input type="checkbox"/>

If pregnant, how many weeks pregnant are you? .....(weeks)

## SECTION B: YOUR PREVIOUS REPRODUCTIVE HISTORY

These next questions are about your previous pregnancies.

**B1. Do you have any living children?**

Yes ☐ No ☐

*If No, please go to question B3.*

*If Yes, how many? .....*

**B2. Did you have any problems with any of the pregnancies resulting in a live child?**

Yes ☐ No ☐

*If Yes, please specify .....*

.....

**B3. Have you had any previous pregnancies that resulted in stillbirth, where the baby has died in the womb after 23 weeks of pregnancy?**

Yes ☐ No ☐

*If yes, how many? .....*

**B4. Have you had any previous pregnancies that resulted in neonatal death, where the baby has died following birth?**

Yes ☐ No ☐

*If yes, how many? .....*

**B5. Have you ever had any treatment to help you get pregnant?**

Yes ☐ No ☐

*If yes, please specify .....*

.....

**B6. How common do you think the risk of miscarriage is in the UK?**

*(Please tick one)*

1 in 2	<input type="checkbox"/>	1 in 3	<input type="checkbox"/>	1 in 4	<input type="checkbox"/>
1 in 5	<input type="checkbox"/>	1 in 6	<input type="checkbox"/>	1 in 10	<input type="checkbox"/>
1 in 15	<input type="checkbox"/>	1 in 20	<input type="checkbox"/>	1 in 50	<input type="checkbox"/>



## SECTION C: YOUR MENTAL WELL-BEING AND SUPPORT

These questions are about your mental well-being and who you turn to for support.

### C1. We are interested in how you feel about the following statements. Read each statement carefully.

Indicate how you feel about each statement. (Please circle number).

Circle the "1" if you **Very Strongly Disagree**

Circle the "3" if you **Mildly Disagree**

Circle the "5" if you **Mildly Agree**

Circle the "7" if you **Very Strongly Agree**

Circle the "2" if you **Strongly Disagree**

Circle the "4" if you are **Neutral**

Circle the "6" if you **Strongly Agree**

	Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree
There is a special person who is around when I am in need	1	2	3	4	5	6	7
There is a special person with whom I can share my joys and sorrows	1	2	3	4	5	6	7
My family really tries to help me	1	2	3	4	5	6	7
I get the emotional help and support I need from my family	1	2	3	4	5	6	7
I have a special person who is a real source of comfort to me	1	2	3	4	5	6	7
My friends really try to help me	1	2	3	4	5	6	7
I can count on my friends when things go wrong	1	2	3	4	5	6	7
I can talk about my problems with my family	1	2	3	4	5	6	7
I have friends with whom I can share my joys and sorrows	1	2	3	4	5	6	7
There is a special person in my life who cares about my feelings	1	2	3	4	5	6	7
My family is willing to help me make decisions	1	2	3	4	5	6	7
I can talk about my problems with my friends	1	2	3	4	5	6	7

(© Scale 1 The Multidimensional Scale of Perceived Social Support.)

**C2. Have you experienced any of the following within the last year?**

Marital / partnership problems	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Personal injury or illness	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Work-related changes	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Financial concerns	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Moved house	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Highly stressed at work	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Death of someone close to you	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
Other significant event	Yes	<input type="checkbox"/>	No	<input type="checkbox"/>

*If other, please state:* .....

**C3. Have you ever had any problems in the past with any mental health issues, including anxiety, panic attacks or depression?**

Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

*If No, please go to C5*

*If yes, provide details here:* .....  
.....

**C4. If yes, have you ever received treatment or help including counselling from the mental health service?**

Yes	<input type="checkbox"/>	No	<input type="checkbox"/>
-----	--------------------------	----	--------------------------

*If yes, provide details here:* .....  
.....

**C5. Below are some statements about your feelings and thoughts.**

Please tick the box that best describes your experience of each over the last **2 weeks**.

	None of the time	Rarely	Some of the time	Often	All of the time
I've been feeling optimistic about the future	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling cheerful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling relaxed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling interested in other people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've had energy to spare	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been dealing with problems well	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been thinking clearly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling good about myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling close to other people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling confident	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been able to make up my own mind about things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling loved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been interested in new things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling useful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**C6. Please read each item below and tick the box that comes closest to how you have been feeling in the past week. Don't take too long over your replies: your immediate reaction to each item will probably be more accurate than a long thought out response.**

**I feel tense or 'wound up'**

- Most of the time ☐
- A lot of the time ☐
- From time to time, occasionally ☐
- Not at all ☐

**I feel as if I am slowed down**

- Nearly all the time ☐
- Very often ☐
- Sometimes ☐
- Not at all ☐

**I still enjoy the things I used to enjoy**

- Definitely as much ☐
- Not quite so much ☐
- Only a little ☐
- Hardly at all ☐

**I get a sort of frightened feeling like 'butterflies' in the stomach**

- Not at all ☐
- Occasionally ☐
- Quite often ☐
- Very often ☐

**I get a sort of frightened feeling as if something awful is about to happen**

- Very definitely and quite badly ☐
- Yes, but not too badly ☐
- A little, but it doesn't worry me ☐
- Not at all ☐

**I have lost interest in my appearance**

- Definitely ☐
- I don't take as much care as I should ☐
- I may not take quite as much care ☐
- I take just as much care as ever ☐

**I can laugh and see the funny side of things**

- As much as I always could ☐
- Not quite so much now ☐
- Definitely not so much now ☐
- Not at all ☐

**I feel restless as if I have to be on the move**

- Very much indeed ☐
- Quite a lot ☐
- Not very much ☐
- Not at all ☐

**Worrying thoughts go through my mind**

- A great deal of the time ☐
- A lot of the time ☐
- Not too often ☐
- Very little ☐

**I look forward with enjoyment to things**

- As much as I ever did ☐
- Rather less than I used to ☐
- Definitely less than I used to ☐
- Hardly at all ☐

**I feel cheerful**

- Never ☐
- Not often ☐
- Sometimes ☐
- Most of the time ☐

**I get sudden feelings of panic**

- Very often indeed ☐
- Quite often ☐
- Not very often ☐
- Not at all ☐

**I can sit at ease and feel relaxed**

- Definitely ☐
- Usually ☐
- Not often ☐
- Not at all ☐

**I can enjoy a good book or radio or TV programme**

- Often ☐
- Sometimes ☐
- Not often ☐
- Very seldom ☐

## SECTION D: COPING STYLES

These questions are about your coping style during stressful times in your life.

### D1. Coping styles that you use during times of stress:

Please read each item below and indicate to what extent you use this coping style when times are stressful (*circle **one** number for each statement*). Rate each item separately in your mind and make your answers as TRUE FOR YOU as you can.

1 – I usually don't do this at all; 2 – I sometimes do this; 3 – I usually do this quite a bit; 4 – I usually do this a lot

	I usually don't do this at all	I sometimes do this	I usually do this quite a bit	I usually do this a lot
I turn to work or other activities to take my mind off things	1	2	3	4
I concentrate my efforts on doing something about it	1	2	3	4
I refuse to believe that it happened	1	2	3	4
I use alcohol or drugs to make myself feel better	1	2	3	4
I try to get emotional support from friends and relatives	1	2	3	4
I pretend that it hasn't really happened	1	2	3	4
I make a plan of action	1	2	3	4
I try to get advice from someone about what to do	1	2	3	4
I talk to someone about how I feel	1	2	3	4
I learn to live with it	1	2	3	4
I keep others from knowing how bad things are	1	2	3	4
I look for something good in what is happening	1	2	3	4
I put my trust in God	1	2	3	4
I try to come up with a strategy about what to do	1	2	3	4
I go on as if nothing had happened	1	2	3	4
I get upset and let my emotions out	1	2	3	4
I try to see it in a different light, to make it seem more positive	1	2	3	4
I make jokes about it	1	2	3	4
I put aside other activities in order to concentrate on this	1	2	3	4
I try to keep my feelings to myself	1	2	3	4
I let my feelings out	1	2	3	4
I seek God's help	1	2	3	4
I ask people who have had similar experiences what they did	1	2	3	4
I try to lose myself for a while by drinking alcohol or taking drugs	1	2	3	4
I make light of the situation, I refuse to get too serious about it	1	2	3	4
I force myself to wait for the right time to do something	1	2	3	4

**D1. continued**

1 – I usually don't do this at all; 2 – I sometimes do this; 3 – I usually do this quite a bit; 4 – I usually do this a lot

	I usually don't do this at all	I sometimes do this	I usually do this quite a bit	I usually do this a lot
I hold off doing anything about it until the situation permits	1	2	3	4
I take additional action to try to get rid of the problem	1	2	3	4
I focus on dealing with the problem and if necessary let other things slide a little	1	2	3	4
I wish that the situation would go away or somehow be over with	1	2	3	4
I've been blaming myself for things that happened	1	2	3	4
I've been criticising myself	1	2	3	4

(© Scale 2 The coping style questionnaire & Brief COPE)

**D2. Please indicate how much you agree with the following statements as they apply to you over the last month. If a particular situation hasn't occurred to you recently, answer according to how you think you would have felt. (Please tick appropriate box)**

	Not true at all	Rarely true	Sometimes true	Often true	True nearly all the time
I am able to adapt when changes occur	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I can deal with whatever comes my way	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I try to see the humorous side of things when I am faced with problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Having to cope with stress can make me stronger	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I tend to bounce back after illness, injury, or other hardships	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I believe I can achieve my goals, even if there are obstacles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Under pressure, I stay focused and think clearly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am not easily discouraged by failure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I think of myself as a strong person when dealing with life's challenges and difficulties	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am able to handle unpleasant or painful feelings like sadness, fear and anger	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(© Scale 3 Connor Davidson Resilience Scale)

## SECTION E: BELIEFS ABOUT YOUR HEALTH AND ASPECTS OF YOUR LIFE IN GENERAL

These next questions will measure your personal beliefs about your health.

- E1.** For each item we would like you to **CIRCLE THE NUMBER** that represents the extent to which you agree or disagree with that statement, using the scale below. The more you agree with a statement, the higher will be the number you circle. Please make sure that you answer **EVERY ITEM** and that you circle **ONLY ONE** number per item. This is a measure of your personal beliefs; obviously, there are no right or wrong answers.

1 – **Strongly Disagree (SD)**

2 – **Moderately Disagree (MD)**

3 – **Slightly Disagree (D)**

4 – **Slightly Agree (A)**

5 – **Moderately Agree (MA)**

6 – **Strongly Agree (SA)**

	SD	MD	D	A	MA	SA
If I get sick, it is my own behaviour which determines how soon I get well again.	1	2	3	4	5	6
No matter what I do, if I am going to get sick, I will get sick.	1	2	3	4	5	6
Having regular contact with my doctor is the best way for me to avoid illness.	1	2	3	4	5	6
Most things that affect my health happen to me by accident.	1	2	3	4	5	6
Whenever I don't feel well, I should consult a medically trained professional.	1	2	3	4	5	6
I am in control of my health.	1	2	3	4	5	6
My family has a lot to do with my becoming sick or staying healthy.	1	2	3	4	5	6
When I get sick, I am to blame.	1	2	3	4	5	6
Luck plays a big part in determining how soon I will recover from an illness.	1	2	3	4	5	6
Health professionals control my health.	1	2	3	4	5	6
My good health is largely a matter of good fortune.	1	2	3	4	5	6
The main thing which affects my health is what I myself do.	1	2	3	4	5	6
If I take care of myself, I can avoid illness.	1	2	3	4	5	6
Whenever I recover from an illness, it's usually because other people (for example, doctors, nurses, family, friends) have been taking good care of me.	1	2	3	4	5	6
No matter what I do, I'm likely to get sick.	1	2	3	4	5	6
If it's meant to be, I will stay healthy.	1	2	3	4	5	6
If I take the right actions, I can stay healthy.	1	2	3	4	5	6
Regarding my health, I can only do what my doctor tells me to do.	1	2	3	4	5	6

(© Scale 6 Multidimensional Health Locus of Control Scale.)

**It may be useful to go back through your answers to make sure you haven't accidentally missed any questions out.**

Because of the type of study we are doing it is very important that we get back as many of these questionnaires as we can. Please return the questionnaire in the freepost envelope provided as soon as you can and **within 2 weeks of receiving it.**

## Thank you very much for your help

If you would like a summary of the research results sent to you when they are available, please contact Anne Marie Rennie either by:

email [a.m.rennie@rgu.ac.uk](mailto:a.m.rennie@rgu.ac.uk) or

Telephone number: 01224 263065

Robert Gordon University  
School of Nursing and Midwifery  
Faculty of Health and Social Care  
Garthdee Campus  
Aberdeen AB10 7QG

If you require this questionnaire in a different format or bigger font size, please contact Anne Marie Rennie on 01224 263065

### Scales

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©Scale 2 =The coping style questionnaire. Carver, C.S. Schier, M.F. & Weintraub, J.K 1989. Assessing coping strategies: A theoretically based approach. Journal of Personality and Social Psychology, 56, 267-283. Carver 1997. "You want to measure coping but your protocols too long: Consider the Brief COPE" International Journal of Behavioural Medicine, 4, 92-100

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© Scale 6 = Multidimensional Health Locus of Control Scale. WALLSTON, K. A., WALLSTON, B. S. & DEVELLIS, R., 1978. Development of the multidimensional health locus of control (MHLC) scales. *Health Education Monographs*, 6, 160-170.



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# Psychological Wellbeing Following Miscarriage

## Prospective Group - Baseline

Thank you for completing this questionnaire and sharing your experiences with us. Please answer **all** of the questions that are applicable to you.

You may come across some questions which are phrased in an unfamiliar manner. However, please do your best to answer them. The reason we have not changed their wording is because they derive from scales widely used in other research. Please do not hesitate to contact Anne Marie Rennie if you would like further clarification on tel: 01224 263065 or email: [a.m.rennie@rgu.ac.uk](mailto:a.m.rennie@rgu.ac.uk)

Unique Participant ID:

Today's date: ...../...../.....

## SECTION A: PERSONAL DETAILS

These questions are all about you.

**A1. How old are you? .....years**

**A2. Marital status:**

(Please tick one box only)

Single, never married

☐

Single through divorce / separation

☐

Single, widowed

☐

Living with partner (but not married)

☐

Married

☐

**A3. Time with current partner (if applicable) .....years .....months**

**A4. What is the highest level of education you have gained?**

(Please tick highest level only)

No formal qualification

☐

Standard Grade / GCSE

☐

Higher / A level

☐

Vocational qualification

☐

College (i.e. HNC / HND)

☐

Degree

☐

Higher Degree

☐

**A5. What type of accommodation do you live in?**

(Please tick one box only)

Home owner

☐

Private rental

☐

Council rental

☐

Living with your parents

☐

Other (please state)

☐

.....

**A6. How do you describe your ethnic group?**

The term ethnic origin is to describe where your family originates from, as distinct from where you were born.  
(Please tick one box only)

White British	<input type="checkbox"/>	Indian	<input type="checkbox"/>
White Irish	<input type="checkbox"/>	Pakistani	<input type="checkbox"/>
Chinese	<input type="checkbox"/>	Bangladeshi	<input type="checkbox"/>
White and Black Caribbean	<input type="checkbox"/>	African	<input type="checkbox"/>
White and Black African	<input type="checkbox"/>	Caribbean	<input type="checkbox"/>
White and Asian	<input type="checkbox"/>	<b>Other</b> Asian	<input type="checkbox"/>
<b>Other</b> mixed	<input type="checkbox"/>	<b>Other</b> Black	<input type="checkbox"/>
<b>Other</b> ethnic group not stated	<input type="checkbox"/>	<b>Other</b> White	<input type="checkbox"/>

If **other**, please specify.....

**A7. Your main employment status:**

(Please tick one box only)

Managerial / Professional	<input type="checkbox"/>
Skilled worker	<input type="checkbox"/>
Unskilled worker	<input type="checkbox"/>
Student	<input type="checkbox"/>
Housewife	<input type="checkbox"/>
Unemployed	<input type="checkbox"/>
Other (please state)	<input type="checkbox"/>

.....

If employed, are you: Full-time?	<input type="checkbox"/>
Part-time?	<input type="checkbox"/>

**A8. Please provide us with details of your GP's name and GP Surgery address.**

Name of your GP.....

Address of GP Surgery.....

.....

.....

**A9. Where were you treated for your miscarriage?**

Name of hospital.....

**A10. What was the type of ward area? (e.g. specialist ward for women with miscarriage)**

.....

## SECTION B: YOUR PREVIOUS REPRODUCTIVE HISTORY

These next questions are about your previous pregnancies, including any previous miscarriages, which resulted in the loss of a baby before 23 completed weeks of pregnancy.

**B1. Was your recent miscarriage your first pregnancy?**

Yes ☐ No ☐

*If Yes, please go to Section C*

**B2. Before your recent miscarriage, have you had any previous pregnancies that resulted in miscarriage?**

Yes ☐ No ☐

*If yes, how many? .....*

*What types of miscarriage/s have you had in the past? (Please insert number in appropriate box/es)*

		How many?
Complete miscarriage	Your pregnancy had been expelled naturally and your womb was empty.	
Incomplete miscarriage	A miscarriage had started but there was still some tissue left in your womb.	
Delayed, silent or missed miscarriage	The fetus had died but you hadn't had any signs, such as bleeding.	
Ectopic pregnancy	Where the pregnancy was developing in your fallopian tube, ovary or abdominal cavity.	
Molar pregnancy	Where the normal fertilization of an egg goes wrong, leading to the growth of abnormal cells which have to be removed surgically.	
Biochemical pregnancy loss of unknown location	Where the pregnancy was never located on a scan, but blood or urine tests indicated a pregnancy.	

**B3. Do you have any living children?**

Yes ☐ No ☐

*If No, please go to question B5*

*If yes, how many? .....*

**B4. Did you have any problems with any of the pregnancies which resulted in a live child?**

Yes ☐ No ☐

*If yes, please specify .....*

.....

.....

.....

**B5. Before your recent miscarriage, have you had any previous pregnancies that resulted in stillbirth, where the baby has died in the womb after 23 weeks of pregnancy?**

Yes ☐ No ☐

*If yes, how many? .....*

**B6. Before your recent miscarriage, have you had any previous pregnancies that resulted in neonatal death, where the baby has died following birth?**

Yes ☐ No ☐

*If yes, how many? .....*

**B7. In relation to any of your previous pregnancies, have you ever had treatment to help you get pregnant?**

Yes ☐ No ☐

*If yes, please specify .....*

.....

**B8. Have you ever had to have any treatment for recurrent miscarriage?**

Yes ☐ No ☐

*If yes, please specify .....*

.....

## SECTION C: ABOUT YOUR RECENT MISCARRIAGE

These questions are about your recent miscarriage, including your experiences of care and support provided during this time.

**C1. What was the date of your recent miscarriage?** ...../...../.....

**C2. Was this pregnancy:** Planned ☐ Unplanned but wanted ☐ Unwanted ☐  
(Please tick one) If unplanned, please go to C5

**C3. If planned, how long had you been trying to fall pregnant?** ..... months ..... years

**C4. Did you seek help to conceive with this pregnancy?** Yes ☐ No ☐

If yes, what form did this take? .....

.....

**C5. Did you have an ultrasound scan?** Yes ☐ No ☐

(a) If yes, was the scan prior to the miscarriage? Yes ☐ No ☐

(b) Was the scan to diagnose the miscarriage? Yes ☐ No ☐

(c) Were you offered a photo of the scan? Yes ☐ No ☐

(d) Do you have a photo of the scan? Yes ☐ No ☐

**C6. Did you experience any of the following?**

(a) Did you see the fetal heart beating? Yes ☐ No ☐

(b) Had you chosen names for the baby? Yes ☐ No ☐

(c) Had you made any preparations for the baby  
e.g. decorated a room? Yes ☐ No ☐

(d) Had you purchased anything for the baby? Yes ☐ No ☐

(Please tick one box for each question)

	Not at all	A little	A lot
<b>C7. Prior to the miscarriage, to what extent did you think about the pregnancy?</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

<b>C8. To what extent were you emotionally prepared for the miscarriage?</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	--------------------------	--------------------------	--------------------------

<b>C9. Immediately after the miscarriage, to what extent were you upset?</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--	--------------------------	--------------------------	--------------------------

<b>C10. How much does your memory of the miscarriage upset you now?</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
---	--------------------------	--------------------------	--------------------------

**C11. Had you had any warning signs of miscarriage (e.g. cramping, spotting)?**

Yes ☐ No ☐

*If yes, please describe.....*

**C12. How many weeks pregnant were you when you had your miscarriage? .....(weeks)**

**C13. What type of miscarriage did you have?**

*(Please tick appropriate box)*

		Tick
Complete miscarriage	Your pregnancy had been expelled naturally and your womb was empty. (Please go to C17)	
Incomplete miscarriage	A miscarriage had started but there was still some tissue left in your womb.	
Delayed, silent or missed miscarriage	The fetus had died but you hadn't had any signs, such as bleeding.	
Biochemical pregnancy loss of unknown location	Where the pregnancy was never located on a scan, but blood or urine tests indicated a pregnancy	
Ectopic pregnancy	Where the pregnancy was developing in your fallopian tube, ovary or abdominal cavity.	
Molar pregnancy	Where the normal fertilization of an egg goes wrong, leading to the growth of abnormal cells which have to be removed surgically.	

**C14. What sort of treatment did you have for your miscarriage?**

*(Please tick all that apply)*

I had to have an operation under general anaesthetic (i.e. put to sleep) ☐

I had to have an operation under local anaesthetic (i.e. I was awake during it) ☐

I had to have tablets / medication to help me pass the pregnancy ☐

I had to wait for the pregnancy to leave my body naturally ☐

*Other, please specify .....*

**C15. Did you feel involved in decisions about your care around how your miscarriage was treated?**

Yes ☐ No ☐

*(e.g. I was offered the choice of an operation or tablets)*

*If no, please explain.....*

**C16. Did you feel fully informed about the care options available?**

Yes ☐ No ☐

**C17. Do you feel that anything could have been done to prevent the miscarriage?**

Yes ☐ No ☐

*If yes, what? .....*

**C18. How common do you think the risk of miscarriage is in the UK?**

(Please tick one)

1 in 2	<input type="checkbox"/>	1 in 3	<input type="checkbox"/>	1 in 4	<input type="checkbox"/>
1 in 5	<input type="checkbox"/>	1 in 6	<input type="checkbox"/>	1 in 10	<input type="checkbox"/>
1 in 15	<input type="checkbox"/>	1 in 20	<input type="checkbox"/>	1 in 50	<input type="checkbox"/>

**C19. Compared with women my age, I believe my chances of a miscarriage in the future**

(Please tick one)

Are greater than others	<input type="checkbox"/>	Are the same as others	<input type="checkbox"/>	Are less than others	<input type="checkbox"/>
----------------------------	--------------------------	---------------------------	--------------------------	-------------------------	--------------------------

**Please indicate your level of satisfaction with the following statements:**

(Please tick one box for each question)

On a scale of 1 to 4, with:

1 = **very satisfied**, 2 = **satisfied**, 3 = **dissatisfied**, 4 = **very dissatisfied** N/A = **not applicable**

	1	2	3	4	N/A
<b>C20. The care I received from hospital staff at the time of the miscarriage.</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>C21. The emotional support I received from hospital staff at the time of the miscarriage.</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>C22. The care I received from healthcare workers once I returned home.</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>C23. The medical or surgical treatment for my miscarriage.</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>C24. The amount of information I received from hospital staff at the time of the miscarriage.</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>C25. The way in which hospital staff gave me information at the time of the miscarriage e.g. leaflets etc.</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>C26. The explanation given by hospital staff for why the miscarriage happened.</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>C27. The way the news of my miscarriage was given by staff at the time.</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<b>C28. The emotional support from community staff that was available to me once I returned home, following my miscarriage.</b>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



(Please tick one)

Very satisfied ☐ Satisfied ☐ Dissatisfied ☐ Very dissatisfied ☐

(If no, please go to C31b)

(Please tick one)

Very satisfied ☐ Satisfied ☐ Dissatisfied ☐ Very dissatisfied ☐

Yes ☐ No ☐

(Please tick one box for each source).

**Yes**, and I found them to be:

[illegible]

**C33. We are interested in how you feel about the following statements. Read each statement carefully.**

*Indicate how you feel about each statement. (Please circle number).*

Circle the "1" if you **Very Strongly Disagree**

Circle the "3" if you **Mildly Disagree**

Circle the "5" if you **Mildly Agree**

Circle the "7" if you **Very Strongly Agree**

Circle the "2" if you **Strongly Disagree**

Circle the "4" if you are **Neutral**

Circle the "6" if you **Strongly Agree**

	Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree
There is a special person who is around when I am in need	1	2	3	4	5	6	7
There is a special person with whom I can share my joys and sorrows	1	2	3	4	5	6	7
My family really tries to help me	1	2	3	4	5	6	7
I get the emotional help and support I need from my family	1	2	3	4	5	6	7
I have a special person who is a real source of comfort to me	1	2	3	4	5	6	7
My friends really try to help me	1	2	3	4	5	6	7
I can count on my friends when things go wrong	1	2	3	4	5	6	7
I can talk about my problems with my family	1	2	3	4	5	6	7
I have friends with whom I can share my joys and sorrows	1	2	3	4	5	6	7
There is a special person in my life who cares about my feelings	1	2	3	4	5	6	7
My family is willing to help me make decisions	1	2	3	4	5	6	7
I can talk about my problems with my friends	1	2	3	4	5	6	7

(© Scale 1 The Multidimensional Scale of Perceived Social Support.)

**C34. Do you have a partner?**Yes ☐ No ☐**(a) If yes, how would you describe your relationship with your partner before the miscarriage?***(Please tick one)*Very close ☐ Close ☐ Distant ☐ Very distant ☐**(b) If yes, how would you describe your relationship with your partner since the miscarriage?***(Please circle one)*Very close ☐ Close ☐ Distant ☐ Very distant ☐**C35. Did you tell people about your miscarriage?**Yes ☐ No ☐*If yes, please indicate all the people you told?**(Please tick boxes)*

Partner	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Immediate family	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Close friends	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
General family and friends	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Work colleagues	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
Employer	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>

*If other, please state: .....***C36. Around the time of the recent miscarriage, did you experience any of the following?**

Marital / partnership problems	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Personal injury or illness	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Work-related changes	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Financial concerns	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Moved house	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Highly stressed at work	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Death of someone close to you	Yes <input type="checkbox"/>	No <input type="checkbox"/>
Other significant event	Yes <input type="checkbox"/>	No <input type="checkbox"/>

*If other, please state: .....*

## SECTION D: COPING SINCE YOUR RECENT MISCARRIAGE

These questions are about how you feel you have been coping since your recent miscarriage, including questions about coping styles you may have been using.

### D1. Overall, how do you feel you are coping following your miscarriage?

(Please tick one)

Coping very well ☐

Coping just ☐

Not coping at all well ☐

### D2. Coping styles that you have used following your recent miscarriage:

Please read each item below and indicate to what extent you have used this coping style following your miscarriage (circle one number for each statement). Rate each item separately in your mind and make your answers as TRUE FOR YOU as you can.

1 – I usually don't do this at all; 2 – I sometimes do this; 3 – I usually do this quite a bit; 4 – I usually do this a lot

	I usually don't do this at all	I sometimes do this	I usually do this quite a bit	I usually do this a lot
I turn to work or other activities to take my mind off things	1	2	3	4
I concentrate my efforts on doing something about it	1	2	3	4
I refuse to believe that it happened	1	2	3	4
I use alcohol or drugs to make myself feel better	1	2	3	4
I try to get emotional support from friends and relatives	1	2	3	4
I pretend that it hasn't really happened	1	2	3	4
I make a plan of action	1	2	3	4
I try to get advice from someone about what to do	1	2	3	4
I talk to someone about how I feel	1	2	3	4
I learn to live with it	1	2	3	4
I keep others from knowing how bad things are	1	2	3	4
I look for something good in what is happening	1	2	3	4
I put my trust in God	1	2	3	4
I try to come up with a strategy about what to do	1	2	3	4
I go on as if nothing had happened	1	2	3	4
I get upset and let my emotions out	1	2	3	4
I try to see it in a different light, to make it seem more positive	1	2	3	4

**D2. continued**

1 – I usually don't do this at all; 2 – I sometimes do this; 3 – I usually do this quite a bit; 4 – I usually do this a lot

	I usually don't do this at all	I sometimes do this	I usually do this quite a bit	I usually do this a lot
I make jokes about it	1	2	3	4
I put aside other activities in order to concentrate on this	1	2	3	4
I try to keep my feelings to myself	1	2	3	4
I let my feelings out	1	2	3	4
I seek God's help	1	2	3	4
I ask people who have had similar experiences what they did	1	2	3	4
I try to lose myself for a while by drinking alcohol or taking drugs	1	2	3	4
I make light of the situation, I refuse to get too serious about it	1	2	3	4
I force myself to wait for the right time to do something	1	2	3	4
I hold off doing anything about it until the situation permits	1	2	3	4
I take additional action to try to get rid of the problem	1	2	3	4
I focus on dealing with this problem and if necessary let other things slide a little	1	2	3	4
I wish that the situation would go away or somehow be over with	1	2	3	4
I've been blaming myself for things that happened	1	2	3	4
I've been criticising myself	1	2	3	4

**D3. Please indicate how much you agree with the following statements as they apply to you over the last month.**

*(Please tick appropriate box)*

	Not true at all	Rarely true	Sometimes true	Often true	True nearly all the time
I am able to adapt when changes occur	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I can deal with whatever comes my way	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I try to see the humorous side of things when I am faced with problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Having to cope with stress can make me stronger	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I tend to bounce back after illness, injury, or other hardships	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I believe I can achieve my goals, even if there are obstacles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Under pressure, I stay focused and think clearly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am not easily discouraged by failure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I think of myself as a strong person when dealing with life's challenges and difficulties	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am able to handle unpleasant or painful feelings like sadness, fear and anger	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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## SECTION E: YOUR MENTAL WELL-BEING

These questions are about your mental wellbeing.

- E1. Have you ever had any problems in the past with any mental health issues, including anxiety, panic attacks or depression?**

Yes ☐ No ☐

*If No, please go to E3*

*If yes, provide details here:* .....

.....

- E2. If yes, have you ever received treatment or help including counselling from the mental health service?**

Yes ☐ No ☐

*If yes, provide details here:* .....

.....

- E3. Below are some statements about your feelings and thoughts.**

Please tick the box that best describes your experience of each over the last **2 weeks**.

	None of the time	Rarely	Some of the time	Often	All of the time
I've been feeling optimistic about the future	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling cheerful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling relaxed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling interested in other people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've had energy to spare	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been dealing with problems well	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been thinking clearly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling good about myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling close to other people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling confident	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been able to make up my own mind about things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling loved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been interested in new things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling useful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**E4. Please read each item below and tick the box that comes closest to how you have been feeling in the past week. Don't take too long over your replies: your immediate reaction to each item will probably be more accurate than a long thought out response.**

**I feel tense or 'wound up'**

- Most of the time ☐
- A lot of the time ☐
- From time to time, occasionally ☐
- Not at all ☐

**I feel as if I am slowed down**

- Nearly all the time ☐
- Very often ☐
- Sometimes ☐
- Not at all ☐

**I still enjoy the things I used to enjoy**

- Definitely as much ☐
- Not quite so much ☐
- Only a little ☐
- Hardly at all ☐

**I get a sort of frightened feeling like 'butterflies' in the stomach**

- Not at all ☐
- Occasionally ☐
- Quite often ☐
- Very often ☐

**I get a sort of frightened feeling as if something awful is about to happen**

- Very definitely and quite badly ☐
- Yes, but not too badly ☐
- A little, but it doesn't worry me ☐
- Not at all ☐

**I have lost interest in my appearance**

- Definitely ☐
- I don't take as much care as I should ☐
- I may not take quite as much care ☐
- I take just as much care as ever ☐

**I can laugh and see the funny side of things**

- As much as I always could ☐
- Not quite so much now ☐
- Definitely not so much now ☐
- Not at all ☐

**I feel restless as if I have to be on the move**

- Very much indeed ☐
- Quite a lot ☐
- Not very much ☐
- Not at all ☐

**Worrying thoughts go through my mind**

- A great deal of the time ☐
- A lot of the time ☐
- Not too often ☐
- Very little ☐

**I look forward with enjoyment to things**

- As much as I ever did ☐
- Rather less than I used to ☐
- Definitely less than I used to ☐
- Hardly at all ☐

**I feel cheerful**

- Never ☐
- Not often ☐
- Sometimes ☐
- Most of the time ☐

**I get sudden feelings of panic**

- Very often indeed ☐
- Quite often ☐
- Not very often ☐
- Not at all ☐

**I can sit at ease and feel relaxed**

- Definitely ☐
- Usually ☐
- Not often ☐
- Not at all ☐

**I can enjoy a good book or radio or TV programme**

- Often ☐
- Sometimes ☐
- Not often ☐
- Very seldom ☐



## SECTION F: BELIEFS ABOUT YOUR HEALTH AND ASPECTS OF YOUR LIFE IN GENERAL

These next questions will measure your personal beliefs about your health, and summarise your views on miscarriage overall.

- F1.** For each item we would like you to **CIRCLE THE NUMBER** that represents the extent to which you agree or disagree with that statement, using the scale below. Please make sure that you answer **EVERY ITEM** and that you circle **ONLY ONE** number per item. This is a measure of your personal beliefs; obviously, there are no right or wrong answers.

1 – **Strongly Disagree (SD)**  
2 – **Moderately Disagree (MD)**  
3 – **Slightly Disagree (D)**

4 – **Slightly Agree (A)**  
5 – **Moderately Agree (MA)**  
6 – **Strongly Agree (SA)**

	SD	MD	D	A	MA	SA
If I get sick, it is my own behaviour which determines how soon I get well again.	1	2	3	4	5	6
No matter what I do, if I am going to get sick, I will get sick.	1	2	3	4	5	6
Having regular contact with my doctor is the best way for me to avoid illness.	1	2	3	4	5	6
Most things that affect my health happen to me by accident.	1	2	3	4	5	6
Whenever I don't feel well, I should consult a medically trained professional.	1	2	3	4	5	6
I am in control of my health.	1	2	3	4	5	6
My family has a lot to do with my becoming sick or staying healthy.	1	2	3	4	5	6
When I get sick, I am to blame.	1	2	3	4	5	6
Luck plays a big part in determining how soon I will recover from an illness.	1	2	3	4	5	6
Health professionals control my health.	1	2	3	4	5	6
My good health is largely a matter of good fortune.	1	2	3	4	5	6
The main thing which affects my health is what I myself do.	1	2	3	4	5	6
If I take care of myself, I can avoid illness.	1	2	3	4	5	6
Whenever I recover from an illness, it's usually because other people (for example, doctors, nurses, family, friends) have been taking good care of me.	1	2	3	4	5	6
No matter what I do, I'm likely to get sick.	1	2	3	4	5	6
If it's meant to be, I will stay healthy.	1	2	3	4	5	6
If I take the right actions, I can stay healthy.	1	2	3	4	5	6
Regarding my health, I can only do what my doctor tells me to do.	1	2	3	4	5	6

**F2. What did you find MOST helpful when you had your miscarriage?**

.....

.....

.....

.....

.....

.....

.....

**F3. What did you find LEAST helpful when you had your miscarriage?**

.....

.....

.....

.....

.....

.....

.....

**F4. Finally, the purpose of this study is to help us understand more about how to support women following miscarriage. Please use the space below if there is anything else you wish to share with us about your own experiences or ideas to help us identify those in need of such support.**

.....

.....

.....

.....

.....

.....

.....

**It may be useful to go back through your answers to make sure you haven't accidentally missed any questions out.**

Please return the questionnaire in the freepost envelope provided as soon as you can and **within 2 weeks of receiving it.**

You will be sent two further questionnaires in the post in 6 months and 13 months time. Because of the type of study we are doing it is very important that we get back as many of these questionnaires as we can.

### **Thank you very much for your help**

If you have been affected by any of the issues raised, please feel free to contact your GP, local midwife or health visitor. There are also support networks such as The Miscarriage Association who are available to provide support for you if necessary online at <http://www.miscarriageassociation.org.uk/> or by phoning their helpline on 01924200799 which is open during office hours - Monday to Friday 9am-4pm.

If you would like a summary of the research results sent to you when they are available, please contact Anne Marie Rennie either by:

email: [a.m.rennie@rgu.ac.uk](mailto:a.m.rennie@rgu.ac.uk) or

Telephone number: 01224 263065

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## Scales

©Scale 1 = Zimet, Dahlem, Zimet & Farley. The Multidimensional Scale of Perceived Social Support. *Journal of Personality Assessment*. 1988.;52:30-41. Reprinted with the permission of the copyright holder.

©Scale 2 =The coping style questionnaire. Carver, C.S. Schier, M.F. & Weintraub, J.K 1989. Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology*, 56, 267-283. Carver 1997. "You want to measure coping but your protocols too long: Consider the Brief COPE" *International Journal of Behavioural Medicine*, 4, 92-100

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© Scale 4 =Tennant R, Hiller L, Fishwick R, Platt P, Joseph S, Weich S, Parkinson J, Secker J, Stewart-Brown S. *The Warwick-Edinburgh Mental Well-being Scale (WEMWBS): development and UK validation*. Reprinted with the permission of the copyright holder.

© Scale 5 = HADS copyright © R.P. Snaith and A.S. Zigmond, 1983, 1992, 1994. Record from items originally published in *Acta Psychiatrica Scandinavica* 67, 361-70. Copyright © Munksgaard International Publishers Ltd, Copenhagen, 1983. This edition first published in 1994 by NferNelson Publishing Company Ltd, 414 Chiswick High Road, London W4 5TE. GL Assessment is part of the Granada Group.

© Scale 6 = Multidimensional Health Locus of Control Scale. WALLSTON, K. A., WALLSTON, B. S. & DEVELLIS, R., 1978. Development of the multidimensional health locus of control (MHLC) scales. *Health Education Monographs*, 6, 160-170.

If you require this questionnaire in a different format or bigger font size, please contact Anne Marie Rennie on 01224 263065



**ROBERT GORDON  
UNIVERSITY•ABERDEEN**



**ROBERT GORDON  
UNIVERSITY•ABERDEEN**

# Psychological Wellbeing Following Miscarriage

## Prospective Group - 6 Month Follow-up

Thank you for completing this questionnaire and sharing your experiences with us. Please answer **all** of the questions that are applicable to you.

You may come across some questions which are phrased in an unfamiliar manner. However, please do your best to answer them. The reason we have not changed their wording is because they derive from scales widely used in other research. Please do not hesitate to contact Anne Marie Rennie if you would like further clarification on tel: 01224 263065 or email: [a.m.rennie@rgu.ac.uk](mailto:a.m.rennie@rgu.ac.uk)

Unique Participant ID:

Today's date: ...../...../.....

## SECTION A: PERSONAL DETAILS

These questions are all about you.

### A1. Current marital status:

(Please tick one box only)

- |                                       |                          |
|---------------------------------------|--------------------------|
| Single, never married                 | <input type="checkbox"/> |
| Single through divorce / separation   | <input type="checkbox"/> |
| Single, widowed                       | <input type="checkbox"/> |
| Living with partner (but not married) | <input type="checkbox"/> |
| Married                               | <input type="checkbox"/> |

### A2. Your main employment status:

(Please tick one box only)

- |                           |                          |
|---------------------------|--------------------------|
| Managerial / Professional | <input type="checkbox"/> |
| Skilled worker            | <input type="checkbox"/> |
| Unskilled worker          | <input type="checkbox"/> |
| Student                   | <input type="checkbox"/> |
| Housewife                 | <input type="checkbox"/> |
| Unemployed                | <input type="checkbox"/> |
| Other (please state)      | <input type="checkbox"/> |

- .....
- |                                  |                          |
|----------------------------------|--------------------------|
| If employed, are you: Full-time? | <input type="checkbox"/> |
| Part-time?                       | <input type="checkbox"/> |

### A3. Your current reproductive status:

(Please tick one box only)

- |                                |                          |
|--------------------------------|--------------------------|
| Not actively trying for a baby | <input type="checkbox"/> |
| Actively trying for a baby     | <input type="checkbox"/> |
| Pregnant                       | <input type="checkbox"/> |
| Suffered another miscarriage   | <input type="checkbox"/> |

If pregnant, how many weeks pregnant are you?.....(weeks)

If you had another miscarriage, how many weeks pregnant were you?.....(weeks)

### A4. Please provide us with details of your GP's name and GP Surgery address.

Name of your GP.....

Address of GP Surgery.....

.....

.....

## SECTION B: ABOUT YOU SINCE YOUR MISCARRIAGE

These questions are about you in relation to your miscarriage and your support over the last 6 months.

### B1. How common do you think the risk of miscarriage is in the UK?

(Please tick one)

1 in 2	<input type="checkbox"/>	1 in 3	<input type="checkbox"/>	1 in 4	<input type="checkbox"/>
1 in 5	<input type="checkbox"/>	1 in 6	<input type="checkbox"/>	1 in 10	<input type="checkbox"/>
1 in 15	<input type="checkbox"/>	1 in 20	<input type="checkbox"/>	1 in 50	<input type="checkbox"/>

### B2. Compared with women my age, I believe my chances of a miscarriage in the future

(Please tick one)

Are greater than others	<input type="checkbox"/>	Are the same as others	<input type="checkbox"/>	Are less than others	<input type="checkbox"/>
----------------------------	--------------------------	---------------------------	--------------------------	-------------------------	--------------------------

Think back to your miscarriage 6 months ago.

Please indicate your level of satisfaction with the following statements:

(Please tick one box for each question)

On a scale of 1 to 4, with:

1 = **very satisfied**, 2 = **satisfied**, 3 = **dissatisfied**, 4 = **very dissatisfied** N/A = **not applicable**

	1	2	3	4	N/A
B3. The care I received from hospital staff at the time of the miscarriage.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B4. The emotional support I received from hospital staff at the time of the miscarriage.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B5. The care I received from healthcare workers once I returned home.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B6. The medical or surgical treatment for my miscarriage.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B7. The amount of information I received from hospital staff at the time of the miscarriage.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B8. The way in which hospital staff gave me information at the time of the miscarriage e.g. leaflets etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B9. The explanation given by hospital staff for why the miscarriage happened.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B10. The way the news of my miscarriage was given by staff at the time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B11. The emotional support from community staff that was available to me once I returned home, following my miscarriage.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**B12. Overall, how satisfied have you been with the care you received from healthcare staff?**

(Please tick one)

Very satisfied ☐ Satisfied ☐ Dissatisfied ☐ Very dissatisfied ☐

**B13. Since your miscarriage 6 months ago, have you received any follow-up care?**

Yes ☐ No ☐

(If no, please go to B14b)

**B14. (a) If yes, how satisfied have you been with follow-up care?**

(Please tick one)

Very satisfied ☐ Satisfied ☐ Dissatisfied ☐ Very dissatisfied ☐

(Please go to B15)

**B14. (b) If no, would you have liked to have received follow-up care?**

Yes ☐ No ☐

**B15. Since your miscarriage 6 months ago, have you sought help from any of the following possible sources of support?**

(Please tick one box for each source).

Yes, and I found them to be:

	No	Very helpful	Quite helpful	Not sure	Quite unhelpful	Very unhelpful
Professional counsellor/therapist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The Miscarriage Association	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The Internet <i>If yes, which website(s)?</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
.....						
Support Group <i>If yes, which group(s)?</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
.....						
Your midwife	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Your health visitor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Your GP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A friend who has experienced miscarriage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other <i>If yes, please state who:</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
.....						



**B16. We are interested in how you feel about the following statements. Read each statement carefully.**

*Indicate how you feel about each statement. (Please circle number).*

Circle the "1" if you **Very Strongly Disagree**

Circle the "3" if you **Mildly Disagree**

Circle the "5" if you **Mildly Agree**

Circle the "7" if you **Very Strongly Agree**

Circle the "2" if you **Strongly Disagree**

Circle the "4" if you are **Neutral**

Circle the "6" if you **Strongly Agree**

	Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree
There is a special person who is around when I am in need	1	2	3	4	5	6	7
There is a special person with whom I can share my joys and sorrows	1	2	3	4	5	6	7
My family really tries to help me	1	2	3	4	5	6	7
I get the emotional help and support I need from my family	1	2	3	4	5	6	7
I have a special person who is a real source of comfort to me	1	2	3	4	5	6	7
My friends really try to help me	1	2	3	4	5	6	7
I can count on my friends when things go wrong	1	2	3	4	5	6	7
I can talk about my problems with my family	1	2	3	4	5	6	7
I have friends with whom I can share my joys and sorrows	1	2	3	4	5	6	7
There is a special person in my life who cares about my feelings	1	2	3	4	5	6	7
My family is willing to help me make decisions	1	2	3	4	5	6	7
I can talk about my problems with my friends	1	2	3	4	5	6	7

*(© Scale 1 The Multidimensional Scale of Perceived Social Support.)*

**B17. In relation to the partner you had at the time of your miscarriage, how would you describe your relationship with him now?**

Very close ☐

Close ☐

Distant ☐

Very distant ☐

## SECTION C: COPING SINCE YOUR MISCARRIAGE 6 MONTHS AGO

These questions are about how you feel you have been coping since your miscarriage 6 months ago, including questions about coping styles you may have been using over the last 6 months.

### C1. Overall, how do you feel you are coping now, since your miscarriage 6 months ago?

(Please tick one)

Coping very well ☐      Coping just ☐      Not coping at all well ☐

### C2. How much does your memory of the miscarriage upset you now?

Not at all ☐      A little ☐      A lot ☐

### C3. Coping styles that you have used over the past 6 months:

Please read each item below and indicate to what extent you have used this coping style following your miscarriage 6 months ago (*circle **one** number for each statement*). Rate each item separately in your mind and make your answers as TRUE FOR YOU as you can.

1 – I usually don't do this at all;    2 – I sometimes do this;    3 – I usually do this quite a bit;    4 – I usually do this a lot

	I usually don't do this at all	I sometimes do this	I usually do this quite a bit	I usually do this a lot
I turn to work or other activities to take my mind off things	1	2	3	4
I concentrate my efforts on doing something about it	1	2	3	4
I refuse to believe that it happened	1	2	3	4
I use alcohol or drugs to make myself feel better	1	2	3	4
I try to get emotional support from friends and relatives	1	2	3	4
I pretend that it hasn't really happened	1	2	3	4
I make a plan of action	1	2	3	4
I try to get advice from someone about what to do	1	2	3	4
I talk to someone about how I feel	1	2	3	4
I learn to live with it	1	2	3	4
I keep others from knowing how bad things are	1	2	3	4
I look for something good in what is happening	1	2	3	4
I put my trust in God	1	2	3	4
I try to come up with a strategy about what to do	1	2	3	4

**C3. continued**

1 – I usually don't do this at all; 2 – I sometimes do this; 3 – I usually do this quite a bit; 4 – I usually do this a lot

	I usually don't do this at all	I sometimes do this	I usually do this quite a bit	I usually do this a lot
I go on as if nothing had happened	1	2	3	4
I get upset and let my emotions out	1	2	3	4
I try to see it in a different light, to make it seem more positive	1	2	3	4
I make jokes about it	1	2	3	4
I put aside other activities in order to concentrate on this	1	2	3	4
I try to keep my feelings to myself	1	2	3	4
I let my feelings out	1	2	3	4
I seek God's help	1	2	3	4
I ask people who have had similar experiences what they did	1	2	3	4
I try to lose myself for a while by drinking alcohol or taking drugs	1	2	3	4
I make light of the situation, I refuse to get too serious about it	1	2	3	4
I force myself to wait for the right time to do something	1	2	3	4
I hold off doing anything about it until the situation permits	1	2	3	4
I take additional action to try to get rid of the problem	1	2	3	4
I focus on dealing with this problem and if necessary let other things slide a little	1	2	3	4
I wish that the situation would go away or somehow be over with	1	2	3	4
I've been blaming myself for things that happened	1	2	3	4
I've been criticising myself	1	2	3	4

**C4. Please indicate how much you agree with the following statements as they apply to you over the last month.**

*(Please tick appropriate box)*

	Not true at all	Rarely true	Sometimes true	Often true	True nearly all the time
I am able to adapt when changes occur	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I can deal with whatever comes my way	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I try to see the humorous side of things when I am faced with problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Having to cope with stress can make me stronger	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I tend to bounce back after illness, injury, or other hardships	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I believe I can achieve my goals, even if there are obstacles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Under pressure, I stay focused and think clearly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am not easily discouraged by failure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I think of myself as a strong person when dealing with life's challenges and difficulties	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am able to handle unpleasant or painful feelings like sadness, fear and anger	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(© Scale 3 Connor Davidson Resilience Scale)

## SECTION D: YOUR MENTAL WELLBEING

These questions are about your mental wellbeing.

- D1. Have you had any problems over the last 6 months with any mental health issues, including anxiety, panic attacks or depression?**

Yes ☐ No ☐

*If No, please go to D3*

*If yes, provide details here:* .....

.....

- D2. If yes, have you received treatment or help including counselling from the mental health service?**

Yes ☐ No ☐

*If yes, provide details here:* .....

.....

- D3. Below are statements about your feelings and thoughts.**

For each statement, please tick the box that best describes your experience of each over the last **2 weeks**.

	None of the time	Rarely	Some of the time	Often	All of the time
I've been feeling optimistic about the future	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling cheerful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling relaxed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling interested in other people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've had energy to spare	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been dealing with problems well	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been thinking clearly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling good about myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling close to other people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling confident	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been able to make up my own mind about things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling loved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been interested in new things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling useful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**D4. Please read each item below and tick the box that comes closest to how you have been feeling in the past week. Don't take too long over your replies: your immediate reaction to each item will probably be more accurate than a long thought out response.**

**I feel tense or 'wound up'**

- Most of the time ☐
- A lot of the time ☐
- From time to time, occasionally ☐
- Not at all ☐

**I feel as if I am slowed down**

- Nearly all the time ☐
- Very often ☐
- Sometimes ☐
- Not at all ☐

**I still enjoy the things I used to enjoy**

- Definitely as much ☐
- Not quite so much ☐
- Only a little ☐
- Hardly at all ☐

**I get a sort of frightened feeling like 'butterflies' in the stomach**

- Not at all ☐
- Occasionally ☐
- Quite often ☐
- Very often ☐

**I get a sort of frightened feeling as if something awful is about to happen**

- Very definitely and quite badly ☐
- Yes, but not too badly ☐
- A little, but it doesn't worry me ☐
- Not at all ☐

**I have lost interest in my appearance**

- Definitely ☐
- I don't take as much care as I should ☐
- I may not take quite as much care ☐
- I take just as much care as ever ☐

**I can laugh and see the funny side of things**

- As much as I always could ☐
- Not quite so much now ☐
- Definitely not so much now ☐
- Not at all ☐

**I feel restless as if I have to be on the move**

- Very much indeed ☐
- Quite a lot ☐
- Not very much ☐
- Not at all ☐

**Worrying thoughts go through my mind**

- A great deal of the time ☐
- A lot of the time ☐
- Not too often ☐
- Very little ☐

**I look forward with enjoyment to things**

- As much as I ever did ☐
- Rather less than I used to ☐
- Definitely less than I used to ☐
- Hardly at all ☐

**I feel cheerful**

- Never ☐
- Not often ☐
- Sometimes ☐
- Most of the time ☐

**I get sudden feelings of panic**

- Very often indeed ☐
- Quite often ☐
- Not very often ☐
- Not at all ☐

**I can sit at ease and feel relaxed**

- Definitely ☐
- Usually ☐
- Not often ☐
- Not at all ☐

**I can enjoy a good book or radio or TV programme**

- Often ☐
- Sometimes ☐
- Not often ☐
- Very seldom ☐

## SECTION E: BELIEFS ABOUT YOUR HEALTH AND ASPECTS OF YOUR LIFE IN GENERAL

These next questions will measure your personal beliefs about your health, and summarise your views on miscarriage overall.

- E1.** For each item we would like you to **CIRCLE THE NUMBER** that represents the extent to which you agree or disagree with that statement, using the scale below. Please make sure that you answer **EVERY ITEM** and that you circle **ONLY ONE** number per item. This is a measure of your personal beliefs; obviously, there are no right or wrong answers.

1 – **Strongly Disagree (SD)**  
2 – **Moderately Disagree (MD)**  
3 – **Slightly Disagree (D)**

4 – **Slightly Agree (A)**  
5 – **Moderately Agree (MA)**  
6 – **Strongly Agree (SA)**

	SD	MD	D	A	MA	SA
If I get sick, it is my own behaviour which determines how soon I get well again.	1	2	3	4	5	6
No matter what I do, if I am going to get sick, I will get sick.	1	2	3	4	5	6
Having regular contact with my doctor is the best way for me to avoid illness.	1	2	3	4	5	6
Most things that affect my health happen to me by accident.	1	2	3	4	5	6
Whenever I don't feel well, I should consult a medically trained professional.	1	2	3	4	5	6
I am in control of my health.	1	2	3	4	5	6
My family has a lot to do with my becoming sick or staying healthy.	1	2	3	4	5	6
When I get sick, I am to blame.	1	2	3	4	5	6
Luck plays a big part in determining how soon I will recover from an illness.	1	2	3	4	5	6
Health professionals control my health.	1	2	3	4	5	6
My good health is largely a matter of good fortune.	1	2	3	4	5	6
The main thing which affects my health is what I myself do.	1	2	3	4	5	6
If I take care of myself, I can avoid illness.	1	2	3	4	5	6
Whenever I recover from an illness, it's usually because other people (for example, doctors, nurses, family, friends) have been taking good care of me.	1	2	3	4	5	6
No matter what I do, I'm likely to get sick.	1	2	3	4	5	6
If it's meant to be, I will stay healthy.	1	2	3	4	5	6
If I take the right actions, I can stay healthy.	1	2	3	4	5	6
Regarding my health, I can only do what my doctor tells me to do.	1	2	3	4	5	6

**E2. What did you find MOST helpful since you had your miscarriage 6 months ago?**

.....

.....

.....

.....

.....

.....

.....

**E3. What did you find LEAST helpful since you had your miscarriage 6 months ago?**

.....

.....

.....

.....

.....

.....

.....

**E4. Finally, the purpose of this study is to help us understand more about how to support women following miscarriage. Please use the space below if there is anything else you wish to share with us about your own experiences or ideas to help us identify those in need of such support.**

.....

.....

.....

.....

.....

.....

.....

**It may be useful to go back through your answers to make sure you haven't accidentally missed any questions out.**



Please return the questionnaire in the freepost envelope provided as soon as you can and **within 2 weeks of receiving it.**

You will be sent a final questionnaire in the post at 13 months following your miscarriage. Because of the type of study we are doing it is very important that we get back as many of these questionnaires as we can.

### **Thank you very much for your help**

If you have been affected by any of the issues raised, please feel free to contact your GP, local midwife or health visitor. There are also support networks such as The Miscarriage Association who are available to provide support for you if necessary online at <http://www.miscarriageassociation.org.uk/> or by phoning their helpline on 01924200799 which is open during office hours - Monday to Friday 9am-4pm.

If you would like a summary of the research results sent to you when they are available, please contact Anne Marie Rennie either by:

email: [a.m.rennie@rgu.ac.uk](mailto:a.m.rennie@rgu.ac.uk) or

Telephone number: 01224 263065

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## Scales

©Scale 1 = Zimet, Dahlem, Zimet & Farley. The Multidimensional Scale of Perceived Social Support. *Journal of Personality Assessment*. 1988.;52:30-41. Reprinted with the permission of the copyright holder.

©Scale 2 =The coping style questionnaire. Carver, C.S. Schier, M.F. & Weintraub, J.K 1989. Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology*, 56, 267-283. Carver 1997. "You want to measure coping but your protocols too long: Consider the Brief COPE" *International Journal of Behavioural Medicine*, 4, 92-100

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© Scale 4 =Tennant R, Hiller L, Fishwick R, Platt P, Joseph S, Weich S, Parkinson J, Secker J, Stewart-Brown S. *The Warwick-Edinburgh Mental Well-being Scale (WEMWBS): development and UK validation*. Reprinted with the permission of the copyright holder.

© Scale 5 = HADS copyright © R.P. Snaith and A.S. Zigmond, 1983, 1992, 1994. Record from items originally published in *Acta Psychiatrica Scandinavica* 67, 361-70. Copyright © Munksgaard International Publishers Ltd, Copenhagen, 1983. This edition first published in 1994 by NferNelson Publishing Company Ltd, 414 Chiswick High Road, London W4 5TE. GL Assessment is part of the Granada Group.

© Scale 6 = Multidimensional Health Locus of Control Scale. WALLSTON, K. A., WALLSTON, B. S. & DEVELLIS, R., 1978. Development of the multidimensional health locus of control (MHLC) scales. *Health Education Monographs*, 6, 160-170.



**ROBERT GORDON  
UNIVERSITY•ABERDEEN**

# Psychological Wellbeing Following Miscarriage

**Prospective Group - 13 Month Follow-up**

Thank you for completing this questionnaire and sharing your experiences with us. Please answer **all** of the questions that are applicable to you.

You may come across some questions which are phrased in an unfamiliar manner. However, please do your best to answer them. The reason we have not changed their wording is because they derive from scales widely used in other research. Please do not hesitate to contact Anne Marie Rennie if you would like further clarification on tel: 01224 263065 or email: [a.m.rennie@rgu.ac.uk](mailto:a.m.rennie@rgu.ac.uk)

Unique Participant ID:

Today's date: ...../...../.....

## SECTION A: PERSONAL DETAILS

These questions are all about you.

### A1. Current marital status:

(Please tick one box only)

- |                                       |                          |
|---------------------------------------|--------------------------|
| Single, never married                 | <input type="checkbox"/> |
| Single through divorce / separation   | <input type="checkbox"/> |
| Single, widowed                       | <input type="checkbox"/> |
| Living with partner (but not married) | <input type="checkbox"/> |
| Married                               | <input type="checkbox"/> |

### A2. Your main employment status:

(Please tick one box only)

- |                           |                          |
|---------------------------|--------------------------|
| Managerial / Professional | <input type="checkbox"/> |
| Skilled worker            | <input type="checkbox"/> |
| Unskilled worker          | <input type="checkbox"/> |
| Student                   | <input type="checkbox"/> |
| Housewife                 | <input type="checkbox"/> |
| Unemployed                | <input type="checkbox"/> |
| Other (please state)      | <input type="checkbox"/> |

.....

If employed, are you: Full-time? ☐  
Part-time? ☐

### A3. Your current reproductive status:

(Please tick appropriate box)

- |                                    |                          |
|------------------------------------|--------------------------|
| (a) Not actively trying for a baby | <input type="checkbox"/> |
| Actively trying for a baby         | <input type="checkbox"/> |
| Had a baby                         | <input type="checkbox"/> |
| Pregnant                           | <input type="checkbox"/> |

Date of delivery.....

If pregnant, how many weeks pregnant are you?.....(weeks)

(b) Have you suffered further miscarriage/s since your miscarriage 13 months ago? Yes ☐ No ☐  
(If no, please go to A4)

If yes, was this within the last 7 months? (ie you have not already notified us of this in the 6 month Follow Up Questionnaire) Yes ☐ No ☐  
(If no, please go to A4)

If yes, how many weeks pregnant were you when you miscarried? .....(weeks)

### A4. Please provide us with details of your GP's name and GP Surgery address.

Name of your GP.....

Address of GP Surgery.....

.....

.....

## SECTION B: ABOUT YOU SINCE YOUR MISCARRIAGE

These questions are about you in relation to your miscarriage and your support over the last 13 months.

### B1. How common do you think the risk of miscarriage is in the UK?

(Please tick one)

1 in 2	<input type="checkbox"/>	1 in 3	<input type="checkbox"/>	1 in 4	<input type="checkbox"/>
1 in 5	<input type="checkbox"/>	1 in 6	<input type="checkbox"/>	1 in 10	<input type="checkbox"/>
1 in 15	<input type="checkbox"/>	1 in 20	<input type="checkbox"/>	1 in 50	<input type="checkbox"/>

### B2. Compared with women my age, I believe my chances of a miscarriage in the future

(Please tick one)

Are greater than others	<input type="checkbox"/>	Are the same as others	<input type="checkbox"/>	Are less than others	<input type="checkbox"/>
----------------------------	--------------------------	---------------------------	--------------------------	-------------------------	--------------------------

Think back to your miscarriage 13 months ago.

Please indicate your level of satisfaction with the following statements:

(Please tick one box for each question)

On a scale of 1 to 4, with:

1 = **very satisfied**, 2 = **satisfied**, 3 = **dissatisfied**, 4 = **very dissatisfied** N/A = **not applicable**

	1	2	3	4	N/A
B3. The care I received from hospital staff at the time of the miscarriage.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B4. The emotional support I received from hospital staff at the time of the miscarriage.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B5. The care I received from healthcare workers once I returned home.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B6. The medical or surgical treatment for my miscarriage.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B7. The amount of information I received from hospital staff at the time of the miscarriage.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B8. The way in which hospital staff gave me information at the time of the miscarriage e.g. leaflets etc.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B9. The explanation given by hospital staff for why the miscarriage happened.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B10. The way the news of my miscarriage was given by staff at the time.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B11. The emotional support from community staff that was available to me once I returned home, following my miscarriage.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**B12. Overall, how satisfied have you been with the care you received from healthcare staff?**

(Please tick one)

Very satisfied ☐ Satisfied ☐ Dissatisfied ☐ Very dissatisfied ☐

**B13. Since your miscarriage 13 months ago, have you received any follow-up care?**

Yes ☐ No ☐

(If no, please go to B14b)

**B14. (a) If yes, how satisfied have you been with follow-up care?**

(Please tick one)

Very satisfied ☐ Satisfied ☐ Dissatisfied ☐ Very dissatisfied ☐

(Please go to B15)

**B14. (b) If no, would you have liked to have received follow-up care?**

Yes ☐ No ☐

**B15. Since your miscarriage 13 months ago, have you sought help from any of the following possible sources of support?**

(Please tick one box for each source).

Yes, and I found them to be:

	No	Very helpful	Quite helpful	Not sure	Quite unhelpful	Very unhelpful
Professional counsellor/therapist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The Miscarriage Association	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The Internet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
.....						
Support Group	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
.....						
Your midwife	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Your health visitor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Your GP	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A friend who has experienced miscarriage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
.....						

If yes, please state who:

**B16. We are interested in how you feel about the following statements. Read each statement carefully.**

*Indicate how you feel about each statement. (Please circle number).*

Circle the "1" if you **Very Strongly Disagree**

Circle the "3" if you **Mildly Disagree**

Circle the "5" if you **Mildly Agree**

Circle the "7" if you **Very Strongly Agree**

Circle the "2" if you **Strongly Disagree**

Circle the "4" if you are **Neutral**

Circle the "6" if you **Strongly Agree**

	Very Strongly Disagree	Strongly Disagree	Mildly Disagree	Neutral	Mildly Agree	Strongly Agree	Very Strongly Agree
There is a special person who is around when I am in need	1	2	3	4	5	6	7
There is a special person with whom I can share my joys and sorrows	1	2	3	4	5	6	7
My family really tries to help me	1	2	3	4	5	6	7
I get the emotional help and support I need from my family	1	2	3	4	5	6	7
I have a special person who is a real source of comfort to me	1	2	3	4	5	6	7
My friends really try to help me	1	2	3	4	5	6	7
I can count on my friends when things go wrong	1	2	3	4	5	6	7
I can talk about my problems with my family	1	2	3	4	5	6	7
I have friends with whom I can share my joys and sorrows	1	2	3	4	5	6	7
There is a special person in my life who cares about my feelings	1	2	3	4	5	6	7
My family is willing to help me make decisions	1	2	3	4	5	6	7
I can talk about my problems with my friends	1	2	3	4	5	6	7

*(© Scale 1 The Multidimensional Scale of Perceived Social Support.)*

**B17. In relation to the partner you had at the time of your miscarriage, how would you describe your relationship with him now?**

Very close ☐

Close ☐

Distant ☐

Very distant ☐

## SECTION C: COPING SINCE YOUR MISCARRIAGE 13 MONTHS AGO

These questions are about how you feel you have been coping since your miscarriage 13 months ago, including questions about coping styles you may have been using over the last 13 months.

### C1. Overall, how do you feel you are coping now, since your miscarriage 13 months ago?

(Please tick one)

Coping very well ☐      Coping just ☐      Not coping at all well ☐

### C2. How much does your memory of the miscarriage upset you now?

Not at all ☐      A little ☐      A lot ☐

### C3. Coping styles that you have used over the past 13 months:

Please read each item below and indicate to what extent you have used this coping style following your miscarriage 13 months ago (*circle one number for each statement*). Rate each item separately in your mind and make your answers as TRUE FOR YOU as you can.

1 – I usually don't do this at all;    2 – I sometimes do this;    3 – I usually do this quite a bit;    4 – I usually do this a lot

	I usually don't do this at all	I sometimes do this	I usually do this quite a bit	I usually do this a lot
I turn to work or other activities to take my mind off things	1	2	3	4
I concentrate my efforts on doing something about it	1	2	3	4
I refuse to believe that it happened	1	2	3	4
I use alcohol or drugs to make myself feel better	1	2	3	4
I try to get emotional support from friends and relatives	1	2	3	4
I pretend that it hasn't really happened	1	2	3	4
I make a plan of action	1	2	3	4
I try to get advice from someone about what to do	1	2	3	4
I talk to someone about how I feel	1	2	3	4
I learn to live with it	1	2	3	4
I keep others from knowing how bad things are	1	2	3	4
I look for something good in what is happening	1	2	3	4
I put my trust in God	1	2	3	4
I try to come up with a strategy about what to do	1	2	3	4



**C3. continued**

1 – I usually don't do this at all; 2 – I sometimes do this; 3 – I usually do this quite a bit; 4 – I usually do this a lot

	I usually don't do this at all	I sometimes do this	I usually do this quite a bit	I usually do this a lot
I go on as if nothing had happened	1	2	3	4
I get upset and let my emotions out	1	2	3	4
I try to see it in a different light, to make it seem more positive	1	2	3	4
I make jokes about it	1	2	3	4
I put aside other activities in order to concentrate on this	1	2	3	4
I try to keep my feelings to myself	1	2	3	4
I let my feelings out	1	2	3	4
I seek God's help	1	2	3	4
I ask people who have had similar experiences what they did	1	2	3	4
I try to lose myself for a while by drinking alcohol or taking drugs	1	2	3	4
I make light of the situation, I refuse to get too serious about it	1	2	3	4
I force myself to wait for the right time to do something	1	2	3	4
I hold off doing anything about it until the situation permits	1	2	3	4
I take additional action to try to get rid of the problem	1	2	3	4
I focus on dealing with this problem and if necessary let other things slide a little	1	2	3	4
I wish that the situation would go away or somehow be over with	1	2	3	4
I've been blaming myself for things that happened	1	2	3	4
I've been criticising myself	1	2	3	4

**C4. Please indicate how much you agree with the following statements as they apply to you over the last month.**

*(Please tick appropriate box)*

	Not true at all	Rarely true	Sometimes true	Often true	True nearly all the time
I am able to adapt when changes occur	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I can deal with whatever comes my way	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I try to see the humorous side of things when I am faced with problems	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Having to cope with stress can make me stronger	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I tend to bounce back after illness, injury, or other hardships	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I believe I can achieve my goals, even if there are obstacles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Under pressure, I stay focused and think clearly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am not easily discouraged by failure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I think of myself as a strong person when dealing with life's challenges and difficulties	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am able to handle unpleasant or painful feelings like sadness, fear and anger	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(© Scale 3 Connor Davidson Resilience Scale)

## SECTION D: YOUR MENTAL WELLBEING

These questions are about your mental wellbeing.

- D1. Have you had any problems over the last 13 months with any mental health issues, including anxiety, panic attacks or depression?**

Yes ☐ No ☐

*If No, please go to D3*

*If yes, provide details here:* .....

.....

- D2. If yes, have you received treatment or help including counselling from the mental health service?**

Yes ☐ No ☐

*If yes, provide details here:* .....

.....

- D3. Below are statements about your feelings and thoughts.**

For each statement, please tick the box that best describes your experience of each over the last **2 weeks**.

	None of the time	Rarely	Some of the time	Often	All of the time
I've been feeling optimistic about the future	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling cheerful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling relaxed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling interested in other people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've had energy to spare	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been dealing with problems well	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been thinking clearly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling good about myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling close to other people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling confident	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been able to make up my own mind about things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling loved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been interested in new things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling useful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**D4. Please read each item below and tick the box that comes closest to how you have been feeling in the past week. Don't take too long over your replies: your immediate reaction to each item will probably be more accurate than a long thought out response.**

**I feel tense or 'wound up'**

- Most of the time ☐
- A lot of the time ☐
- From time to time, occasionally ☐
- Not at all ☐

**I feel as if I am slowed down**

- Nearly all the time ☐
- Very often ☐
- Sometimes ☐
- Not at all ☐

**I still enjoy the things I used to enjoy**

- Definitely as much ☐
- Not quite so much ☐
- Only a little ☐
- Hardly at all ☐

**I get a sort of frightened feeling like 'butterflies' in the stomach**

- Not at all ☐
- Occasionally ☐
- Quite often ☐
- Very often ☐

**I get a sort of frightened feeling as if something awful is about to happen**

- Very definitely and quite badly ☐
- Yes, but not too badly ☐
- A little, but it doesn't worry me ☐
- Not at all ☐

**I have lost interest in my appearance**

- Definitely ☐
- I don't take as much care as I should ☐
- I may not take quite as much care ☐
- I take just as much care as ever ☐

**I can laugh and see the funny side of things**

- As much as I always could ☐
- Not quite so much now ☐
- Definitely not so much now ☐
- Not at all ☐

**I feel restless as if I have to be on the move**

- Very much indeed ☐
- Quite a lot ☐
- Not very much ☐
- Not at all ☐

**Worrying thoughts go through my mind**

- A great deal of the time ☐
- A lot of the time ☐
- Not too often ☐
- Very little ☐

**I look forward with enjoyment to things**

- As much as I ever did ☐
- Rather less than I used to ☐
- Definitely less than I used to ☐
- Hardly at all ☐

**I feel cheerful**

- Never ☐
- Not often ☐
- Sometimes ☐
- Most of the time ☐

**I get sudden feelings of panic**

- Very often indeed ☐
- Quite often ☐
- Not very often ☐
- Not at all ☐

**I can sit at ease and feel relaxed**

- Definitely ☐
- Usually ☐
- Not often ☐
- Not at all ☐

**I can enjoy a good book or radio or TV programme**

- Often ☐
- Sometimes ☐
- Not often ☐
- Very seldom ☐

## SECTION E: BELIEFS ABOUT YOUR HEALTH AND ASPECTS OF YOUR LIFE IN GENERAL

These next questions will measure your personal beliefs about your health, and summarise your views on miscarriage overall.

- E1.** For each item we would like you to **CIRCLE THE NUMBER** that represents the extent to which you agree or disagree with that statement, using the scale below. Please make sure that you answer **EVERY ITEM** and that you circle **ONLY ONE** number per item. This is a measure of your personal beliefs; obviously, there are no right or wrong answers.

1 – **Strongly Disagree (SD)**  
2 – **Moderately Disagree (MD)**  
3 – **Slightly Disagree (D)**

4 – **Slightly Agree (A)**  
5 – **Moderately Agree (MA)**  
6 – **Strongly Agree (SA)**

	SD	MD	D	A	MA	SA
If I get sick, it is my own behaviour which determines how soon I get well again.	1	2	3	4	5	6
No matter what I do, if I am going to get sick, I will get sick.	1	2	3	4	5	6
Having regular contact with my doctor is the best way for me to avoid illness.	1	2	3	4	5	6
Most things that affect my health happen to me by accident.	1	2	3	4	5	6
Whenever I don't feel well, I should consult a medically trained professional.	1	2	3	4	5	6
I am in control of my health.	1	2	3	4	5	6
My family has a lot to do with my becoming sick or staying healthy.	1	2	3	4	5	6
When I get sick, I am to blame.	1	2	3	4	5	6
Luck plays a big part in determining how soon I will recover from an illness.	1	2	3	4	5	6
Health professionals control my health.	1	2	3	4	5	6
My good health is largely a matter of good fortune.	1	2	3	4	5	6
The main thing which affects my health is what I myself do.	1	2	3	4	5	6
If I take care of myself, I can avoid illness.	1	2	3	4	5	6
Whenever I recover from an illness, it's usually because other people (for example, doctors, nurses, family, friends) have been taking good care of me.	1	2	3	4	5	6
No matter what I do, I'm likely to get sick.	1	2	3	4	5	6
If it's meant to be, I will stay healthy.	1	2	3	4	5	6
If I take the right actions, I can stay healthy.	1	2	3	4	5	6
Regarding my health, I can only do what my doctor tells me to do.	1	2	3	4	5	6

**E2. What did you find MOST helpful since you had your miscarriage 13 months ago?**

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**E3. What did you find LEAST helpful since you had your miscarriage 13 months ago?**

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**E4. Finally, the purpose of this study is to help us understand more about how to support women following miscarriage. Please use the space below if there is anything else you wish to share with us about your own experiences or ideas to help us identify those in need of such support.**

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**It may be useful to go back through your answers to make sure you haven't accidentally missed any questions out.**

Please return the questionnaire in the freepost envelope provided as soon as you can and **within 2 weeks of receiving it.**

Because of the type of study we are doing it is very important that we get back as many of these questionnaires as we can.

### **Thank you very much for your help**

If you have been affected by any of the issues raised, please feel free to contact your GP, local midwife or health visitor. There are also support networks such as The Miscarriage Association who are available to provide support for you if necessary online at <http://www.miscarriageassociation.org.uk/> or by phoning their helpline on 01924200799 which is open during office hours - Monday to Friday 9am-4pm.

If you would like a summary of the research results sent to you when they are available, please contact Anne Marie Rennie either by:

email: [a.m.rennie@rgu.ac.uk](mailto:a.m.rennie@rgu.ac.uk) or

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## Scales

©Scale 1 = Zimet, Dahlem, Zimet & Farley. The Multidimensional Scale of Perceived Social Support. *Journal of Personality Assessment*. 1988.;52:30-41. Reprinted with the permission of the copyright holder.

©Scale 2 =The coping style questionnaire. Carver, C.S. Schier, M.F. & Weintraub, J.K 1989. Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology*, 56, 267-283. Carver 1997. "You want to measure coping but your protocols too long: Consider the Brief COPE" *International Journal of Behavioural Medicine*, 4, 92-100

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© Scale 4 =Tennant R, Hiller L, Fishwick R, Platt P, Joseph S, Weich S, Parkinson J, Secker J, Stewart-Brown S. *The Warwick-Edinburgh Mental Well-being Scale (WEMWBS): development and UK validation*. Reprinted with the permission of the copyright holder.

© Scale 5 = HADS copyright © R.P. Snaith and A.S. Zigmond, 1983, 1992, 1994. Record from items originally published in *Acta Psychiatrica Scandinavica* 67, 361-70. Copyright © Munksgaard International Publishers Ltd, Copenhagen, 1983. This edition first published in 1994 by NferNelson Publishing Company Ltd, 414 Chiswick High Road, London W4 5TE. GL Assessment is part of the Granada Group.

© Scale 6 = Multidimensional Health Locus of Control Scale. WALLSTON, K. A., WALLSTON, B. S. & DEVELLIS, R., 1978. Development of the multidimensional health locus of control (MHLC) scales. *Health Education Monographs*, 6, 160-170.



## **APPENDIX 8**

### **Phase 2: Interview Topic Guide: Exploring women's views and experiences**

The interview aims to further explore predictors of wellbeing, including:

- a) resilience
- b) internal health locus of control
- c) coping styles
- d) social support from partner, family, friends, employer, health professionals and others e.g. internet. Overall, how they felt supported following and since to include suggestions for enhancing support
- e) the care they have received at the time of miscarriage and their experiences of care and follow-up support since the time of the miscarriage
- f) factors that were most helpful and least helpful, expanding further the qualitative questions and the quantitative findings that predict enhanced psychological wellbeing within Phase 1
- g) suggestions for enhancing wellbeing after miscarriage

#### **1. Introduction** Aim: to introduce the research and set the context for the proceeding discussion.

- Introduce self and RGU
- Thank them for completing the three questionnaires in stage 1 and agreeing to take part in the interview
- Introduce the study: it is about understanding people's experiences of adjustment after miscarriage and how they coped
- Information sheet, consent form
- Talk through key points:
  - Purpose of the interview
  - Length of the interview will last no longer than 60 minutes
  - Can stop at any time if you need a break
  - Can come back another day to finish
  - Voluntary nature of participation
  - Exploring areas in the questionnaires, and will be like a conversation
  - Recording of the interview
- Confidentiality and how findings will be reported
- No right or wrong answers, just say what you think
- Able to withdraw at any time and the interview will cease
- Questions?

#### **2. Experiences of miscarriage and social support**

Aim: to explore your experiences of miscarriage, events leading up to it, and at the time. Let the participant tell their story.

- When, where, what happened?
- Who was involved at the time (healthcare staff, partner others)?
- How did you find out that you had had a miscarriage?
- Communication of breaking the news
- Were you given an explanation?
- Information and understanding
  - What information was provided (oral/written)?
  - How helpful was the information (whether read, accessibility, discussed with someone else – who?)
- Making the decision around type of treatment (if applicable)
  - How you made decisions around choices for treatment?

- What influenced?
- Who else involved?
- Feelings
- Support offered/received
  - What, who, when, where?
  - Helpfulness of support in relation to who, when, where, what?
  - Experiences of communication between partner, family, others, staff members, or with others including support in the community
  - Building relationships with the carer/s and continuity of carer/s
- After you went home
  - Factors that helped you adjust?
  - Factors that hindered your adjustment?
  - Who you have spoken to since?
  - Explore how these have influenced positive or negative adjustment
  - Open door in relation to information, did you feel you had someone to turn to, to speak to, to share any fears or worries?
  - Were you fully informed about additional support services?
  - Did you use any of these resources? Were they helpful?

### **3. Resilience and coping styles**

Aim: to further explore how you feel you coped with miscarriage, and the factors that helped or hindered your adjustment following miscarriage

- How do you feel you coped following your miscarriage?
- Was there anything that you did following your miscarriage, which helped you to cope?
- What other factors might have happened that helped you cope?
- Did you use similar or different methods of coping as you use during challenging situations in day to day life, such as negative unexpected situations?
- How do you generally cope with challenging and negative unexpected situations in day to day situations?
- Family and friends and contact with them?
- What made the biggest difference in helping you to cope with the miscarriage?
- Other factors?

### **4. Views in relation to health practices which influence wellbeing**

Aim: to further explore changes that may assist our understanding of miscarriage and the influence of health practices and behaviours for women following miscarriage

- Current thoughts and feelings about the whole experience
  - How did you make sense of what happened?
  - Do you feel that you control the events that affect you or do you tend to explain things in terms of luck/fate etc?
  - Did the experience change your views in how you influence your health or health behaviours?
  - Things that make it easier, explore how they would help?
  - What was the hardest thing about miscarriage and your experience?
  - Has there been anything positive following your miscarriage? If yes, most positive thing about miscarriage and your experience?
- Respondent's impressions of service provision, or gaps in the service and how they would like these to be filled?

### **5. Closing the interview**

- Ask the interviewee if they wish to add anything further
- Ask how they found taking part in the study
- Thank them for taking part and for supporting the study
- Offer the interviewee the Debrief Sheet and encourage them to refer to it, if they have any questions or wish to receive support

## **APPENDIX 9**

### **Comparison between responders and non-responders at 6 and 13 months.**

#### **Six Months**

At 6 months, the demographic details for non-responders (n=10) and responders (n=56) to the PG6MQ are displayed in Table 1.

#### ***Age between non-responders and responders***

The mean age between non-responders to PG6MQ at baseline (mean=35.30, SD=7.41, n=10) and responders to PG6MQ at baseline (mean=32.82, SD=5.37, n=56) demonstrated that non-responders were slightly older. However, an independent *t*-test revealed no significant difference in age between responders and non-responders,  $t(64)=-1.27$ ,  $p=0.21$ .

#### ***Scottish Index of Multiple Deprivation Score between non-responders and responders***

Mean socio-economic status scores at baseline as measured by their Scottish Index of Multiple Deprivation (SIMD) score, generated from the woman's postcode showed no significant difference between responders (mean=4869.25, SD=1261.65) and non-responders (mean=4250.90, SD=1173.28),  $t(64)=1.44$ ,  $p=0.15$ , as displayed in Table 1.

**Table 1: Demographics for non-responders and responders to PG6MQ**

	<b>Non-responders (n=10)</b>	<b>Responders (n=56)</b>
<b>Age Mean (SD)</b>	35.30 (7.41)	32.82 (5.37)
<b>SIMD Mean (SD)</b>	4250.90 (1173.28)	4869.25 (1261.65)
	<b>N (%)</b>	<b>N (%)</b>
<b>Marital status</b>		
<i>Single</i>	0 (0)	1 (1.79)
<i>Living with partner</i>	3 (30)	13 (23.21)
<i>Married</i>	7 (70)	42 (75.00)
<b>Highest level of education</b>		
<i>Standard grade</i>	0 (0)	5 (8.93)
<i>Highers/A'level</i>	0 (0)	5 (8.93)
<i>Vocational</i>	0 (0)	3 (5.38)
<i>College</i>	3 (30.00)	13 (23.21)
<i>Degree</i>	4 (40.00)	16 (28.57)
<i>Higher degree</i>	3 (30.00)	14 (25.00)
<b>Type Accommodation</b>		
Home owner	4 (40.00)	49 (87.50)
Private rental	3 (30.00)	3 (5.36)
Council rental	0 (0)	2 (3.57)

Living with parents	1 (10.00)	2 (3.57)
Other (farm tenancy, RAF)	2 (20.00)	0 (0)
<b>Employment status</b>		
Managerial/ professional	5 (50.00)	32 (57.14)
Skilled worker	1 (20.00)	10 (17.86)
Unskilled worker	0 (0)	4 (7.14)
Housewife	3 (30.00)	8 (14.29)
Unemployed / other	1 (10.00)	2 (3.57)
<b>SIMD Quintiles</b>		
Most deprived	0 (0)	0 (0)
2 <sup>nd</sup> most deprived	1 (10.00)	4 (7.14)
Middle	3 (30.00)	9 (16.07)
2 <sup>nd</sup> least deprived	4 (40.00)	16 (28.57)
Least deprived	2 (20.00)	27 (48.21)

### ***Mean anxiety, depression and wellbeing scores for non-responders and responders***

Further analysis involved comparing responders and non-responders in relation to anxiety, depression and wellbeing scores. The mean anxiety scores between non-responders (mean=9.40, SD=5.32, n=10) and responders to PG6MQ at baseline (mean=8.20, SD=5.14, n=56) demonstrated that non-responders were slightly more anxious. However, an independent *t*-test revealed no significant difference in anxiety scores between non-responders and responders,  $t(64) = -0.68$ ,  $p=0.50$ . The mean depression scores between non-responders (mean=6.30, SD=2.95, n=10) and responders to PG6MQ at baseline (mean=5.02, SD=4.13, n=56) demonstrated that non-responders were slightly more depressed. However, an independent *t*-test revealed no significant difference in depression scores between non-responders and responders,  $t(64) = -0.94$ ,  $p=0.35$ . The mean wellbeing scores between non-responders (mean=46.20, SD=9.31, n=10) and responders to PG6MQ at baseline (mean=46.13, SD=10.02, n=56) demonstrated that non-responders had very slightly increased wellbeing. However, an independent *t*-test revealed no significant difference in wellbeing scores between non-responders and responders,  $t(64)=-0.02$ ,  $p=0.98$ .

### ***Anxiety and Depression 'Caseness' between non-responders and responders***

Of the 66 women at baseline, 20 (30.30%) women had anxiety 'caseness', of these, 4 (20%) women with anxiety 'caseness' at baseline did not respond to PG6MQ, and 16 (80%) women did respond to PG6MQ. Of the 66 women at baseline, 9 (13.64%) women had depression 'caseness', of these, 1 (11.11%) woman with depression 'caseness' at baseline did not respond to PG6MQ, and 8 (88.88%) women did respond to PG6MQ.

### **Thirteen Months**

At 13 months, the demographic details for non-responders to the PG13MQ (n=7) and responders (n=49) are displayed in Table 2.

### ***Age between non-responders and responders***

The mean age at baseline between non-responders to PG13MQ (mean=31.86, SD=6.96, n=7) and responders (mean=32.96, SD=5.18, n=49) demonstrated that responders were slightly older. An independent-samples *t*-test revealed no significant difference in age between responders and non-responders,  $t(54)=.50$ ,  $p=.62$ .

### ***Scottish Index of Multiple Deprivation Score between non-responders and responders***

The mean socio-economic status scores at baseline as measured by their Scottish Index of Multiple Deprivation (SIMD) score, generated from the woman's postcode showed that non-responders to PG13MQ were similar (mean=5194.14, SD=833.27) to responders (mean=4822.84, SD=1311.30),  $t(54)=-.73$ ,  $p=.47$ .

**Table 2: Demographics for non-responders and responders to PG13MQ**

	<b>Non-responders (n=7)</b>	<b>Responders (n=49)</b>
<b>Age Mean (SD)</b>	31.86 (6.96)	32.96 (5.18)
<b>SIMD Mean (SD)</b>	5194.14 (833.27)	4822.84 (1311.30)
	<b>N (%)</b>	<b>N (%)</b>
<b>Marital status</b>		
<i>Single</i>	0 (0)	1 (2.04)
<i>Living with partner</i>	4 (57.14)	9 (18.37)
<i>Married</i>	3 (42.86)	39 (79.59)
<b>Highest level of education</b>		
<i>Standard grade</i>	1 (14.29)	4 (8.16)
<i>Highers/A'level</i>	1 (14.29)	4 (8.16)
<i>Vocational</i>	0 (0)	3 (6.12)
<i>College</i>	2 (28.57)	11 (22.45)
<i>Degree</i>	2 (28.57)	14 (28.57)
<i>Higher degree</i>	1 (14.29)	13 (26.53)
<b>Type Accommodation</b>		
Home owner	6 (85.71)	43 (87.76)
Private rental	1 (14.29)	2 (4.08)
Council rental	0 (0)	2 (4.08)
Living with parents	0 (0)	2 (4.08)
Other (farm tenancy, RAF)	0 (0)	0 (0)
<b>Employment status</b>		
Managerial/ professional	5 (71.43)	27 (55.10)
Skilled worker	2 (28.57)	8 (16.33)

Unskilled worker	0 (0)	4 (8.16)
Housewife	0 (0)	8 (16.33)
Unemployed / other	0 (0)	2 (4.08)
<b>SIMD Quintiles</b>		
Most deprived	0 (0)	0 (0)
2 <sup>nd</sup> most deprived	0 (0)	4 (8.16)
Middle	0 (0)	9 (18.37)
2 <sup>nd</sup> least deprived	4 (57.14)	12 (24.49)
Least deprived	3 (42.86)	24 (48.98)
<b>Ethnicity</b>		
White British	7 (100)	46 (93.88)
White other	0 (0)	3 (6.12)

***Mean anxiety, depression and wellbeing scores at baseline for non-responders and responders***

Further analysis involved comparing responders and non-responders at 13 months in relation to anxiety, depression and wellbeing scores at baseline. The mean anxiety scores at baseline between non-responders (mean=9.43, SD=6.37, n=7) and responders to PG13MQ (mean=8.02, SD=4.99, n=49) demonstrated that non-responders were slightly more anxious. However, an independent-samples *t*-test revealed no significant difference in anxiety scores between non-responders and responders, *t* (54)=-.68, *p*=.50. The mean depression scores at baseline between non-responders (mean=6.14, SD=4.71, n=7) and responders to PG13MQ (mean=4.86, SD=4.07, n=49) demonstrated that non-responders scored higher on the depression subscale. However, an independent-samples *t*-test revealed no significant difference in depression scores between non-responders and responders, *t* (54)=-.77, *p*=.45. The mean wellbeing scores at baseline between non-responders (mean=43.43, SD=11.70, n=7) and responders to PG13MQ (mean=46.51, SD=9.83, n=49) demonstrated that non-responders had lower wellbeing scores. However, an independent-samples *t*-test revealed no significant difference in wellbeing scores between non-responders and responders, *t* (54)=.76, *p*=.45.

***Mean anxiety, depression and wellbeing scores at 6 months for non-responders and responders***

Further analysis involved comparing responders and non-responders at 13 months in relation to anxiety, depression and wellbeing scores at 6 months. The mean anxiety scores at 6 months between non-responders (mean=7.57, SD=6.60, n=7) and responders to PG13MQ (mean=8.04, SD=4.25, n=49) demonstrated that non-responders were slightly less anxious. However, an independent-samples *t*-test revealed no significant difference in anxiety scores between non-responders and responders, *t* (54)=.25, *p*=.80. The mean depression scores at 6 months between non-responders (mean=2.29, SD=2.75, n=7) and

responders to PG13MQ (mean=2.59, SD=2.57, n=49) demonstrated that non-responders scored slightly lower on the depression subscale. However, an independent-samples *t*-test revealed no significant difference in depression scores between non-responders and responders, *t* (54)=.29, *p*=.77. The mean wellbeing scores at 6 months between non-responders (mean=53.29, SD=8.50, n=7) and responders to PG13MQ (mean=52.10, SD=8.92, n=49) demonstrated that non-responders had higher wellbeing scores. However, an independent-samples *t*-test revealed no significant difference in wellbeing scores between non-responders and responders, *t* (54)=-.33, *p*=.74.

### ***Anxiety and Depression 'Caseness' amongst non-responders and responders***

Anxiety 'caseness' at baseline was examined for non-responders and responders to the PG13MQ. Of the 17 women who did not respond at 13 months, 7 (35%) women had anxiety 'caseness' and 10 (21.7%) did not have anxiety 'caseness,' at baseline. Amongst the responders at 13 months (n=49), 13 (65%) women had anxiety 'caseness' and 36 (73.3%) did not have anxiety 'caseness,' at baseline. A Chi square test for independence (with Yates Continuity Correction) indicated no significant association between response and anxiety 'caseness' at baseline,  $\chi^2(1, n=66) = 0.68, p=0.41, \phi=0.14$ .

Anxiety 'caseness' at 6 months was examined for non-responders (n=7) and responders (n=49) to the PG13MQ. Of the 7 women who did not respond at 13 months but that had responded at 6 months, 2 (14.3%) women had anxiety 'caseness' and 5 (11.9%) did not have anxiety 'caseness,' at 6 months. Amongst the responders at 13 months (n=49), 12 (85.7%) women had anxiety 'caseness', and 37 (88.1%) did not have anxiety 'caseness,' at 6 months. There was no significant association between response and anxiety 'caseness' at 6 months, (*p*=0.41, (FET)).

Depression 'caseness' at baseline was examined for non-responders and responders to the PG13MQ. Of the 17 women who did not respond at 13 months, 3 (33.3%) women had depression 'caseness' and 14 (24.6%) did not have depression 'caseness,' at baseline. Amongst the responders at 13 months (n=49), 6 (66.7%) women had depression 'caseness', and 43 (75.4%) did not have depression 'caseness,' at baseline. There was no significant association between response and depression 'caseness' at baseline, (*p*=0.68, (FET)).

At 6 months, none of the participants had depression 'caseness.'