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# An exploration of student experiences and perceptions of a physiotherapy student-led clinic.

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## An Exploration of Student Experiences and Perceptions of a Physiotherapy Student-led Clinic

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# An Exploration of Student Experiences and Perceptions of a Physiotherapy Student-led Clinic

## Abstract

**Purpose:** Student-Led Clinics (SLCs) offer a structured, real-life learning environment for healthcare students, where they provide services under supervision. SLCs can facilitate increased confidence with clinical reasoning, improve skill development and enhance leadership skills. Existing research has generally captured students' experiences at the end of their SLC participation, lacking a longitudinal perspective and therefore, little is known about how students' perceptions develop over time. This study aimed to explore physiotherapy students' experiences in a neurological rehabilitation SLC, with a focus on participants' perceptions captured after attending specific SLC sessions and over the course of multiple SLC sessions. **Methods:** Using interpretative phenomenology, video diaries were used to explore student experiences over six weeks at a physiotherapy neurological rehabilitation SLC. Thematic analysis and methodological rigour ensured credibility and trustworthiness of the findings. To appraise changes over time, data were analysed week by week on an individual subject basis and within and between participants. **Results:** Themes from participant experiences included: 1) student professional development through engagement in SLC; 2) influence of collaborative environment in SLC on student learning and development; 3) the role and impact of patients on the student experience; and 4) efficacy of SLC management. Participants highlighted positive aspects such as skill development, supervision quality, teamwork, and patient interactions. Challenges included feeling unprepared for the clinic environment and managing complex patient cases. **Conclusions:** This study explored the evolving perceptions and experiences of physiotherapy students participating in a neurological rehabilitation SLC over time using a diary method and has demonstrated that SLCs allow for student development over time and can be a useful adjunct for development of practice-based learning experiences. SLCs provide an environment for students to learn and offer time, space and constructive challenge to problem solve in a supported real-life setting. SLCs can offer a distinct and beneficial learning experience for physiotherapy students, fostering skill development and a deeper understanding of patient-centred care.

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### **ABSTRACT**

**Purpose:** Student-Led Clinics (SLCs) offer a structured, real-life learning environment for healthcare students, where they provide services under supervision. SLCs can facilitate increased confidence with clinical reasoning, improve skill development and enhance leadership skills. Existing research has generally captured students' experiences at the end of their SLC participation, lacking a longitudinal perspective and therefore, little is known about how students' perceptions develop over time. This study aimed to explore physiotherapy students' experiences in a neurological rehabilitation SLC, with a focus on participants' perceptions captured after attending specific SLC sessions and over the course of multiple SLC sessions. **Methods:** Using interpretative phenomenology, video diaries were used to explore student experiences over six weeks at a physiotherapy neurological rehabilitation SLC. Thematic analysis and methodological rigour ensured credibility and trustworthiness of the findings. To appraise changes over time, data were analysed week by week on an individual subject basis and within and between participants. **Results:** Themes from participant experiences included: 1) student professional development through engagement in SLC; 2) influence of collaborative environment in SLC on student learning and development; 3) the role and impact of patients on the student experience; and 4) efficacy of SLC management. Participants highlighted positive aspects such as skill development, supervision quality, teamwork, and patient interactions. Challenges included feeling unprepared for the clinic environment and managing complex patient cases. **Conclusions:** This study explored the evolving perceptions and experiences of physiotherapy students participating in a neurological rehabilitation SLC over time using a diary method and has demonstrated that SLCs allow for student development over time and can be a useful adjunct for development of practice-based learning experiences. SLCs provide an environment for students to learn and offer time, space and constructive challenge to problem solve in a supported real-life setting. SLCs can offer a distinct and beneficial learning experience for physiotherapy students, fostering skill development and a deeper understanding of patient-centred care.

**Keywords:** student-led clinic; physiotherapy; neurological rehabilitation; perceptions; experiences.

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## INTRODUCTION

Student led clinics (SLCs) are services where students take a primary role in delivering healthcare for various populations and offer a structured, supportive, and real-world learning setting, fostering skill development among students.<sup>1,2</sup> Grounded in a constructivist learning approach, SLCs provide a space for students to develop skills by engaging with individuals with complex conditions.<sup>3</sup> Established in medical and nursing curricula and emerging in allied health curricula SLCs are supervised by qualified health professionals with a dual aim of supporting the provision of services to patients and facilitating student learning.<sup>4</sup> Often situated on University premises and based on a social enterprise model SLCs also integrate into mainstream health services in community, hospital, and outpatient clinic settings.<sup>5,6</sup> Servicing various patient groups—from those with medical conditions to the elderly and those requiring rehabilitation, such as people with neurological conditions,<sup>7,8,9</sup> SLCs can serve local communities to address unmet needs in some cultural contexts and can have a positive impact on quality of life and function.<sup>10,11</sup> Physiotherapy SLCs are increasingly prevalent in countries such as Canada and Australia where they address placement capacity shortages; and in the United States (US) to prepare students for internships.<sup>12,13,14</sup> SLCs in the United Kingdom (UK) and Ireland are emerging and while their distinct purpose is not yet established, early indications suggest that SLCs in the UK may be linked to the expansion of placement capacity.<sup>4,13</sup>

Studies of student-led clinics (SLCs) have found that they provide a supportive and safe learning environment with adequate space and time for learning.<sup>12,15</sup> SLCs typically adopt lower supervisor-to-student ratios, for example 1:4 or more, compared to traditional placements, which often have a 1:1 or 1:2 ratio.<sup>16</sup> However, a study on a physiotherapy SLC in Australia reported that students may perceive supervision as suboptimal when there is inconsistent communication between students and their supervisors.<sup>5</sup> A systematic review evaluating the suitability of physiotherapy SLCs as a model for practice education found that SLCs can optimize the development of a variety of professional skills and attributes including adaptability, confidence and communication.<sup>1</sup> Several studies have concluded that physiotherapy students can perceive positive outcomes from participation in a SLC, such as: development of clinical skills;<sup>17,18</sup> facilitation of independence;<sup>12,15,18</sup> and development of teamworking and leadership skills.<sup>19,20</sup> Studies suggest student experience of a SLC can be enhanced by improving induction processes and ensuring there is a sufficient supply of patients.<sup>5,15</sup>

It is well recognised that neurological conditions are a major contributor to disability adjusted life years (DALYs) and that neurological rehabilitation is a significant area of unmet need in the healthcare arena globally.<sup>21,22</sup> Therefore, SLCs for neurological rehabilitation are being developed to serve a dual purpose for student education and to provide a service for patients.<sup>23</sup> Recent studies have concluded that SLCs for neurological rehabilitation provide a quality service for patients by improving functional outcomes (and positive outcomes for students in terms of a conducive environment for linking theory to practice.<sup>24-26</sup> However, these studies are few and have been conducted in the US and Australia thereby limiting the transferability of findings.

The aim of this study was to explore the experiences and perceptions of physiotherapy students taking part in a neurological rehabilitation SLC in the UK. The specific objectives were to: 1) explore the individual post SLC session experiences and perceptions of physiotherapy students participating in a neurological rehabilitation SLC and 2) explore the experiences and perceptions of physiotherapy students participating in a neurological rehabilitation SLC over several sessions.

## METHODOLOGY

### Study Context

The physiotherapy pre-registration curricula at Robert Gordon University operate integrated, spiral curricula where 5-7 week clinical placements, undertaken in clinical settings are integrated throughout the programmes facilitating experiential learning. Academic modules utilise problem-based learning formats where workshops and practical classes are interlinked. As part of the integrated curricula delivery, the physiotherapy neurological rehabilitation SLC runs weekly for twelve weeks, with two, one-hour-long sessions being delivered on the same day each week as part of scheduled classes. The mission of the SLC is two-fold: 1) to provide a quality, real-life learning environment to facilitate the development of students' professional and clinical skills in neurological rehabilitation, and 2) to provide access to a rehabilitation service for those in the local community with long term neurological conditions who may benefit from additional input. Up to eight patients attend each SLC session, totalling a SLC capacity of up to 16 patients per week. Between six and eight physiotherapy students are mandated to attend the two SLC sessions weekly for a minimum of 6 consecutive weeks to achieve continuity with all students required to take part across the SLC block. Students take a lead role in the design and the delivery of the patient interventions in the SLC and are supervised by an experienced qualified Physiotherapist. Student responsibilities at the SLC include assessment, intervention planning and delivery, goal setting, note-keeping and handovers to peers. Where possible for continuity, students may see the same patient weekly, but this varies due to attendance and operational considerations. The SLC welcomes those with a range of neurological conditions and patients are referred to the SLC by health professionals working in hospital and community settings. The SLC employs a multi-station exercise (circuit) model. Individually supported by student physiotherapists, patients rotate through stations that focus on areas

such as, upper limb function, balance, and lower limb function, allowing exercises to be tailored to their individual needs. This approach ensures both a standardised experience and individualised exercise prescription for individuals with varying levels of functional ability.

### Study Design

Interpretative phenomenology informed the qualitative approach to this study and provided the basis to explore the student experiences and perceptions of the SLC.<sup>27</sup> Consolidated criteria for reporting qualitative research (COREQ) guidelines supported the reporting of this study.<sup>28</sup> Video diary method captures real time perceptions of an individuals' experience and is thought to reduce recall bias.<sup>29</sup> Useful in exploring and identifying within-person variation and effects, video diaries are an ideal method for exploring experiences over time.<sup>29</sup> A video method was chosen to record the students' verbal experiences and perceptions because it was the most preferred and familiar mode of communication.

### Participants and Recruitment

Participants were recruited using convenience sampling from the Stage Four undergraduate (four year) BSc (Hons) and Stage Two graduate entry (two year) MSc (pre-registration) physiotherapy programme cohorts. These senior students from both programmes, which run concurrently, participate in the neurological rehabilitation SLC. Ethical approval was granted by the Robert Gordon University (RGU) School of Health Sciences Research Ethics Committee (Reference SHS/20/31). The target sample was 10 participants- out of a total of 15 students who were eligible to take part- and as supported by Hennink and Kaiser- was considered sufficient to achieve data saturation.<sup>30</sup> Criteria such as the narrow study aim, specific sample and rich dialogue further supported that sufficient data saturation for this study could be achieved with this target sample size.<sup>31</sup> In the UK, individuals can qualify as a physiotherapist either via a 4-year undergraduate program or a 2-year accelerated graduate entry program for related degree holders. Consequently, Stage 4 BSc (Hons) and Stage 2 MSc Physiotherapy students are at comparable stages in their theoretical and clinical training, making their learning stages equivalent. Therefore, it is relevant to consider the students across both programmes as one cohort for this study.

Recruitment was in the form of a flyer and global email sent by the BSc (Hons) and MSc (pre-registration) Physiotherapy course leaders to the respective student cohorts. Students who indicated an interest in the study were provided with a participant information sheet. Potential participants were clearly advised that their involvement in the study was entirely voluntary, and they could withdraw from the research at any time, with no requirement to give a reason and without prejudice. Written informed consent was gained from all participants prior to commencing the study. The students who piloted the question schedule were ineligible to take part in the study.

### Procedure- Video Diary

A question schedule to address the research aim was developed based on current evidence and the research team's experience. The question schedule was tested with two students in a pilot run to test the clarity and number of questions, with minor amendments made based on the pilot. Each participant contributed to an individual video diary once weekly at the end of each SLC for 6 weeks, totalling up to six video diary contributions. Diary entries were recorded on a password protected, General Data Protection Regulation (GDPR) compliant tablet, alone in a private room on University premises. The question schedule was adapted after three video diaries to ensure questions continued to generate an appropriate depth and breadth of answer.<sup>29</sup> See [Appendix A] for the question schedule. Recordings were uploaded to a secure GDPR compliant University platform. To ensure anonymity was preserved, files were de-identified with codes assigned to participants prior to verbatim transcription of the audio component of the video diary.

### Data Analysis

Transcribed video diary data were analysed using the method developed by Braun and Clarke.<sup>32</sup> Researcher DW led the thematic analysis, initially familiarising themselves with the data through repeated reading of the transcript. Employing an inductive analysis approach, the data were scrutinised line by line to generate initial codes. Data were analysed week by week on an individual subject basis. Within and between participant analysis was undertaken individually and collectively at each week and across all the weeks that participants attended the SLC to explore changes and to enable evaluation of experiences and perceptions over time. A total of 153 codes were identified and labelled on the transcript. The codes were then refined and collated into sub-themes and themes.

This study used Lincoln and Guba's four criteria, credibility, confirmability, transferability and dependability to enhance quality and rigour.<sup>33</sup> Credibility was supported as researcher (DW) had been involved in the creation and running of the SLC. Analyst triangulation involving regular discussion with the second researcher (ES) further enhanced credibility of the findings. A 3<sup>rd</sup> author (KC) did a blinded check of the analysis of the data to further minimise bias. To aid confirmability and minimise bias, member

checking of video diary transcripts was undertaken with all participants providing opportunity to clarify/change or add to the narrative. Findings were also checked with all participants. No changes to the initial transcripts or findings were made by any of the participants. To enhance dependability, a clear audit trail of discussions, questions and decisions was kept.<sup>27</sup> Reflexivity was supported by ensuring inclusion of all relevant codes during analysis as well as detailed notes regarding theme development.<sup>3</sup>

## RESULTS

### Participant Demographics

Thirteen participants (seven males and six females) provided informed consent and took part in the study. Ten (six males and four females) were from the Stage two MSc Physiotherapy (pre-registration) cohort and three (one male and two females) were from the Stage Four BSc (Hons) Physiotherapy cohort. Across all participants, a total of 42 video diary entries were made. The average number of diary entries completed per participant was three (range 1 to 5). The shortest video diary entry was just under two minutes long, with an average recording length of approximately four minutes (range 1 minute 45 seconds, to 5 minutes 50 seconds) (see Table 1 for details).

**Table 1** Completion of Video Diaries Per Week of SLC Attendance by Participant

| Week of SLC                             | 1      | 2      | 3      | 4      | 5      | 6      | 7      | 8      | 9      | 10     | 11     | .05    |
|-----------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Name/week of attendance for Participant | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 | Week 1 | Week 2 | Week 3 | Week 4 | Week 5 | Week 6 |
| Participant 1                           | x      | x      | x      | x      |        | x      |        |        |        |        |        |        |
| Participant 2                           | x      | x      | x      | x      |        |        |        |        |        |        |        |        |
| Participant 3                           | x      | x      | x      | x      | x      | x      |        |        |        |        |        |        |
| Participant 4                           | x      | x      | x      |        |        |        |        |        |        |        |        |        |
| Participant 5                           | x      | x      | x      |        |        |        |        |        |        |        |        |        |
| Participant 6                           | x      | x      | x      |        |        |        |        |        |        |        |        |        |
| Participant 7                           |        |        | x      |        |        |        |        |        |        |        |        |        |
| Participant 8                           | x      | x      | x      |        | x      |        |        |        |        |        |        |        |
| Participant 9                           | x      | x      |        |        |        |        |        |        |        |        |        |        |
| Participant 10                          |        |        | x (1)* | x (2)* |        |        |        |        |        |        |        |        |
| Participant 11                          |        |        |        |        |        |        | x      | x      |        |        |        | x      |
| Participant 12                          |        |        |        |        |        |        | x      |        | x      |        |        | x      |
| Participant 13                          |        |        |        |        |        |        | x      | x      |        |        | x      |        |

\*Denotes 1<sup>st</sup> and 2<sup>nd</sup> week of attendance at SLC for student

Four themes were identified following analysis of the data. These were: 1) student professional development through engagement in SLC; 2) influence of collaborative environment in SLC on student learning and development; 3) the role and impact of patients on the student experience; and 4) efficacy of SLC management. See Figure 1: Concept Map of Themes. Table 2 provides further details related to sample codes, sub-themes and themes.



**Figure 1:** Concept Map of Themes**Table 2:** Sample Codes, Sub-Themes and Themes

| Sample Codes                                                            | Subtheme           | Theme                                                      |
|-------------------------------------------------------------------------|--------------------|------------------------------------------------------------|
| More realistic structure (like practice) in terms of time and planning  | Learning           | Student-professional development through engagement in SLC |
| Good opportunity for application of learning                            |                    |                                                            |
| Learning across the weeks                                               |                    |                                                            |
| Challenging but a benefit to learning                                   |                    |                                                            |
| Enriching learning experience for students                              |                    |                                                            |
| Authentic nature of environment for learning (real patients)            |                    |                                                            |
| Consistency of patient contact                                          |                    |                                                            |
| Developing lifelong skills                                              | Skill development  |                                                            |
| Opportunity for students to adapt & progress exercise                   |                    |                                                            |
| Opportunity for hands-on with real patients                             |                    |                                                            |
| Development of communication skills with patients                       |                    |                                                            |
| Student building confidence to progress patients over weeks             |                    |                                                            |
| Developing more specific analysis skills                                |                    |                                                            |
| Student improved treatment skills and range of treatments overall       |                    |                                                            |
| Challenge of a new and complex patient                                  | Clinical reasoning |                                                            |
| Challenge of adapting treatment but benefit of developing this skillset |                    |                                                            |
| Developing interventions at appropriate levels for patients             |                    |                                                            |
| Good for development of clinical reasoning skills (on the spot)         |                    |                                                            |
| Challenging developing realistic goals and knowing what these are       | Challenges         |                                                            |
| Student's own (lack of) knowledge and an initial challenge              |                    |                                                            |
| Feeling "thrown into it"                                                |                    |                                                            |
| Challenged by complex patients but enjoying                             |                    |                                                            |
| Challenge when student not seeing own patient                           |                    |                                                            |
| Group environment beneficial – creates welcoming environment            | Teamwork           | Influence of collaborative                                 |
| Good team dynamics between supervising staff and students               |                    |                                                            |



| Sample Codes                                                                        | Subtheme                                       | Theme                                                            |                                                                  |                                                                  |
|-------------------------------------------------------------------------------------|------------------------------------------------|------------------------------------------------------------------|------------------------------------------------------------------|------------------------------------------------------------------|
| Opportunity to see how others work and get ideas for treatment                      | Supervision                                    | environment in SLC<br>student learning and<br>development        |                                                                  |                                                                  |
| Positive experience working in partnership with another student <sup>6</sup>        |                                                |                                                                  |                                                                  |                                                                  |
| Benefit of having more senior students present                                      |                                                |                                                                  |                                                                  |                                                                  |
| Sharing of ideas                                                                    |                                                |                                                                  |                                                                  |                                                                  |
| Learning to work with others as part of a term                                      |                                                |                                                                  |                                                                  |                                                                  |
| Group environment encourages students to perform at their best                      |                                                |                                                                  |                                                                  |                                                                  |
| Freedom to work with patients (students)                                            |                                                |                                                                  |                                                                  |                                                                  |
| Supportive and approachable supervisors                                             |                                                |                                                                  |                                                                  |                                                                  |
| Opportunity to get ideas from supervisors                                           |                                                |                                                                  |                                                                  |                                                                  |
| Feedback and ideas from supervisors are good                                        |                                                |                                                                  |                                                                  |                                                                  |
| Supervision ratio (of physiotherapist to students could be lower                    |                                                |                                                                  |                                                                  |                                                                  |
| Challenge to get specific feedback on notes                                         |                                                |                                                                  |                                                                  |                                                                  |
| Students leading treatment                                                          |                                                |                                                                  |                                                                  |                                                                  |
| Staff check on safety                                                               |                                                |                                                                  |                                                                  |                                                                  |
| Time and space to work with patients but with supervision when needed               |                                                |                                                                  |                                                                  |                                                                  |
| Less supervised than a traditional placement                                        |                                                |                                                                  |                                                                  |                                                                  |
| Student excitement for what the group holds                                         | Motivators                                     | The role and impact of<br>patients on the student<br>experiences |                                                                  |                                                                  |
| Student enjoyment of working with the patients                                      |                                                |                                                                  |                                                                  |                                                                  |
| Motivated and high energy group sessions                                            |                                                |                                                                  |                                                                  |                                                                  |
| Good opportunity to work in neuro setting                                           |                                                |                                                                  |                                                                  |                                                                  |
| Satisfaction of seeing patient develop                                              |                                                |                                                                  |                                                                  |                                                                  |
| Good enjoyable atmosphere                                                           |                                                |                                                                  |                                                                  |                                                                  |
| Student building relationship with patients                                         | Interaction with patients                      |                                                                  | The role and impact of<br>patients on the student<br>experiences |                                                                  |
| Format of SLC supports relationship development with patients                       |                                                |                                                                  |                                                                  |                                                                  |
| Good to get patient contact                                                         |                                                |                                                                  |                                                                  |                                                                  |
| Focused student time with patients                                                  |                                                |                                                                  |                                                                  |                                                                  |
| Continuity of seeing a patient over again develop skills                            |                                                |                                                                  |                                                                  |                                                                  |
| Consistency of working with a patient brings more understanding of their challenges |                                                |                                                                  |                                                                  |                                                                  |
| Understanding that service user goals are important                                 | Developing approach to<br>person-centered care |                                                                  |                                                                  | The role and impact of<br>patients on the student<br>experiences |
| Ability to goal set with service users                                              |                                                |                                                                  |                                                                  |                                                                  |
| Student hoping patients feel cared about as part of the process                     |                                                |                                                                  |                                                                  |                                                                  |
| Opportunity to challenge patients                                                   |                                                |                                                                  |                                                                  |                                                                  |
| Understanding of patient's needs                                                    |                                                |                                                                  |                                                                  |                                                                  |
| Structuring treatment sessions to suit patient goals                                |                                                |                                                                  |                                                                  |                                                                  |
| Understanding variety of challenges neuro patients face                             | Patient role in the SLC                        | The role and impact of<br>patients on the student<br>experiences |                                                                  |                                                                  |
| Service user benefit because of attending group                                     |                                                |                                                                  |                                                                  |                                                                  |
| Patients keen for the rehabilitation                                                |                                                |                                                                  |                                                                  |                                                                  |
| Patients enjoy the group                                                            |                                                |                                                                  |                                                                  |                                                                  |
| Patients' role in students' learning                                                |                                                |                                                                  |                                                                  |                                                                  |
| Welcoming environment for patients                                                  |                                                |                                                                  |                                                                  |                                                                  |
| Lack of time to plan                                                                | Planning                                       |                                                                  | Efficacy of SLC<br>management                                    |                                                                  |
| Students would appreciate more support with planning of treatment                   |                                                |                                                                  |                                                                  |                                                                  |
| Initial organisational issues on week one                                           |                                                |                                                                  |                                                                  |                                                                  |
| Low attendance (patients) can impact on student experience                          |                                                |                                                                  |                                                                  |                                                                  |
| Success of intervention evident when planning has taken place                       |                                                |                                                                  |                                                                  |                                                                  |
| Planning of treatment enabled a good quality session                                |                                                |                                                                  |                                                                  |                                                                  |
| Good access to equipment                                                            | Operational factors                            |                                                                  |                                                                  | Efficacy of SLC<br>management                                    |
| Good environment (adequate space) to have the group                                 |                                                |                                                                  |                                                                  |                                                                  |
| Pressures of space constraints                                                      |                                                |                                                                  |                                                                  |                                                                  |
| Noise/busyness can be an issue for patients                                         |                                                |                                                                  |                                                                  |                                                                  |
| SLC time passes quickly                                                             |                                                |                                                                  |                                                                  |                                                                  |
| Changes in delivery in response to operational changes                              |                                                |                                                                  |                                                                  |                                                                  |
| Lack of continuity (organization and people) affects student experience             |                                                |                                                                  |                                                                  |                                                                  |
| Option to have patient notes online                                                 |                                                |                                                                  |                                                                  |                                                                  |

### Theme One: Student Professional Development Through Engagement in SLC

In this theme participants reported the impact the SLC had on their overall professional development and experience which was generally reported to be positive. This theme included sub-themes relating to clinical reasoning, skill development, learning, and challenges.

Participants often referred to developing various clinical reasoning skills, such as communication, assessment, and adapting and progressing exercise, due to their participation in the SLC. The ability to adapt and progress exercise was attributed to delivering interventions for different patients and was considered to foster the participants' ability to make real time decisions.

*... "having the hands-on experience with the patient is probably the biggest benefit. Really working with the exercises you're doing, being able to modify them, change them, is really good experience to be getting." [P2, Week 3]*

Participants reported that the SLC experience enriched their learning and enabled the development of lifelong skills and there was clear reference to the development of learning across the weeks of the SLC. However, participants were honest about the challenges participating in the SLC presented with some reflecting that they felt unprepared for challenges of working in the SLC and the complex presentations of the patients. Some participants reported difficulty when selecting the most suitable outcome measures for patients.

*"I guess this is our first week, so we saw two different patients and we just read about their notes before, so we were kind of thrown into it a little bit, so I guess I was a bit unsure what to do and things like that. But it was also good in a way because I've never done neuro before, just to get a different experience..." [P13, Week 1]*

A small number of participants reported they felt challenged initially by the complex clinical environment the SLC presented, reporting feelings of trepidation for what may come, with one participant reporting that they felt 'thrown in' to the situation, however they did recognise that there was support available to them in the SLC.

*... "Also the challenges, I think more work today because we found out who the patients were this morning, we had an hour to think about it, but I think that's more a first week problem, you're just kind of thrown in, but it's actually not that big a deal because you've got people there with you. (P11, Week 1)*

### Theme two: Influence of Collaborative Environment in SLC on Student Learning and Development

In this theme, participants expressed their reflections on the collaborative nature of the SLC which related to three aspects: supervision, teamwork, and motivators. participants viewed the supervision model as safe and supportive and perceived it was helpful for their learning, offering more space to practise interventions, explore treatment options and observe outcomes. The SLC supervision model, acknowledged as being different to that in traditional clinical practice, was perceived to be more distant but participants recognised that this granted them freedom for intervention planning.

*... "staff are great, it's nice to have them there if you have questions or have issues, but it's also great when they step in when they see you doing something or struggling, or just reel back in like "how can we change this?" Because they'll give you tips but they won't take over, they'll be like "I'll come back in ten minutes and see what you've done with that." (P12, Week 3)*

Most participants were satisfied with the levels of feedback offered; however, one participant did report that they would like more supervisors to be present in the SLC.

Participants reported a positive team dynamic and partnership approach between students and the supervisor, reflecting positively that teamworking enabled the sharing of ideas, and exposure to other treatment options. Participants commented more frequently on the positive aspects of the teamwork dynamic towards the end of their SLC experiences.

*... both my classmates and the staff have been extremely helpful in providing support on different points of view and different components of a treatment I hadn't quite thought about. So having everyone in the one room does help, because you can almost pinch ideas from different exercises people have done...." [P3, Week 4]*

The SLC environment provided clear motivators for participants to take part and derive benefit. Participants found motivation in working as part of a team with different patients, observing their progress, and considered it to be a valuable experiential opportunity. Some participants were motivated by the welcoming and positive atmosphere of the SLC.

*"The benefits I've experienced this week, one of my patients progressed a lot, so that was really cool to see that was on the right lines, and we had a session on pelvic tilts before this class, so it was really good to integrate that into the class and see the benefits that it brought to the patient...." [P12, Week 2]*

### **Theme three: The role and impact of patients on the student experience**

Participants reflected that as a direct result of working with patients they developed skills of person-centred care such as designing interventions to suit individual patients, understanding everyday challenges that patients experience, and developing skills of goal setting. Participants reported that the consistency of interaction with patients in the SLC enabled them to develop relationships and observe the outcomes of an intervention plan over time. The interactions and development of relationships with patients were viewed by participants to be positive for the development of their learning.

*... "it's really interesting to see the patients progress and how small changes can make quite a big difference to them. Especially with one of my patients, some of his issues are more fear-based, so it's small things that when he takes them into everyday life make a real difference" ... [P2, Week 2]*

Participants perceived those patients had a dual role in the SLC. These insights seemed to be informed by participants' perceptions that patients, through their understanding that the students leading the SLC were learning, took on a facilitator of learning role as well as a recipient of rehabilitation role. Participants perceived that the patients who attended the SLC derived benefit from improvements in function and wellbeing, were very motivated to receive rehabilitation, and that for some patients the SLC was fulfilling unmet need due to a lack of access to other rehabilitation services.

*"... They [patients] are coming partially because they know it's really helpful to us, and they've told me that too, and every time they are willing to work during the whole hour... and make the most of their time while they are with us, which has just been fantastic..." [P10, Week 3].*

### **Theme four: Efficacy of SLC Management**

Aspects reported by participants in this theme related to the efficacy of the management of the SLC which focussed on planning of the SLC and operational issues.

Participants raised that planning was a key factor affecting the perceived success of the SLC. Several participants indicated that they would have benefitted from more support to design initial treatment plans, and a minority view reflected those participants needed more support with intervention planning on an ongoing basis for the duration of the SLC. Participants who had challenges with planning their SLC sessions with patients suggested that having more time in the initial stages of the SLC would have been helpful. Many participants perceived improvement in their treatment planning skills as their experience of the SLC progressed.

*"So, onto the next point of planning the treatment, by getting the same patient back you really can work on planning the treatment, which is a lot better both for them and for your own development as a healthcare professional." [P3, Week 4]*

Several operational issues related to the SLC were identified by participants. Adequate space was one factor which most participants agreed was essential for the success of the SLC and most agreed there was sufficient space to allow them to conduct effective individual assessments, and interventions. Some participants did comment on the high noise levels in the SLC space which made communication with patients challenging. This is a factor which needs to be considered especially with large groups of students and patients in one space. In addition, there needs to be adequate space to allow for clear communication as well as to minimise distraction for patients who may have communication and or cognition challenges.

Perceptions about the adequacy of the handover of information regarding patients between students were mixed. Some participants perceived the handover of information to be highly effective and others reported that it missed key details which participants perceived adversely affected their ability to plan effective interventions. The variation in performance of this skill is likely to be reflective of individual students' level of experience as well as aptitude. Participants reflected that variation in when patients attended the SLC impacted on the running of the clinic and affected their ability to plan, although this is reflective of real-life clinic practice and a variable which would not be possible to control in the SLC.

*"The only thing is I find it sometimes a bit challenging that we weren't there for the initial objective assessment of the patients, so you just have to rely on the notes from before, but it's sometimes quite hard to remember when you're in the middle of the session...." [P14, Week 2]*

## DISCUSSION

This study explored the experiences and perceptions of physiotherapy students taking part in a neurological rehabilitation SLC as part of a UK physiotherapy programme delivery. Student experiences and perceptions were established through individual contributions to a video diary, and to the authors knowledge, this is the first study that has explored perceptions of a physiotherapy neurological SLC in this way. Overall, the findings demonstrate that participants had positive perceptions of their experiences of the SLC with some key aspects for development identified.

The findings of this study agree with previous research regarding the development of clinical skills, leadership, teamworking and SLC model of supervision.<sup>14,18-20</sup> However, those studies explored students' recollections which reflected on the SLC at the end of the experience and therefore reactions to experiences throughout the SLC delivery may not have been fully captured. Due to the nature of this study where participants' perceptions were captured (in most cases) across multiple different weeks of their SLC experience, deeper insights into students' impressions of the SLC have been gained. This study illuminated participants' perceptions which reflected the necessity for a comprehensive induction and support structure to be implemented as part of SLC planning. However, most participants expressed a positive perspective on their progress and acknowledged overcoming challenges as a successful experience. These student perceptions are supported by constructivist learning theory which views the learning process as an active construal of new information through real life experiences and a central tenant of the theory is that you 'learn to learn' suggesting that navigating challenges in a supportive yet suitably challenging environment is pivotal to the development of clinical skills and reasoning.<sup>34,35</sup> The findings of this study suggest that the SLC enabled active problem solving and that students had developed solutions, deepened learning, and therefore enhanced their own personal development, possibly due to the nature of the learning environment and development of enhanced confidence.

The challenge of dealing with complex of patient presentations reported by participants in this study is also reflected in the findings of a recent study which investigated undergraduate physiotherapy students' perceptions of neurological rehabilitation. The study by Abasiyanik et al, identified that students perceive the speciality area of neurological rehabilitation to be challenging due to the complex underpinning theory and clinical reasoning requirements and recommended further integration of practice and real-life teaching is embedded in the curricula to address this.<sup>36</sup> A SLC environment therefore may be helpful preparation for learners who require additional support to relate theory to practice, to develop clinical reasoning skills in real time or, to support performance on or after a neurological clinical placement.

Participants in this study reported on their perception of developing the skills of person-centred care through gaining an understanding of the patients' needs over time. These findings are supported by previous research by Bostick, Hall and Miciak, who investigated students' perceptions of a neurological SLC in Canada.<sup>12</sup> In this study, participants attributed the development of the skills of effective person-centred care specifically to the ability to see patients on a weekly basis over a period of time, juxtaposing the SLC setting with clinical practice where the participants perceived they saw patients less frequently and for shorter appointment times. This suggests SLCs have a role in supporting students to develop these important skills, particularly in contexts where there is lower capacity for practice placements and/or clinical services where students' practice experiences are challenged with high patient flow. The findings of this study support the fact that SLCs can be an important and unique forum for the development of authentic person-centred care skills, although this may only be attributable to a neurological rehabilitation SLC environment where patients are attending for repeated treatment sessions for the fulfilment of a rehabilitation care plan. While the primary focus of this study was on physiotherapy students, it could be considered that these findings may hold relevance for other allied health students, such as occupational therapy, who engage in rehabilitation in similar environments.

This study's findings on students' perceptions of their clinical reasoning development align with Niwa and Maclellan's research, which found increased confidence in clinical reasoning among physiotherapy students after SLC participation.<sup>18</sup> This finding could be attributed to two main reasons: 1) the real-life learning environment, and 2) the supervision style. According to the participants, and in keeping with findings from a study in Canada of a physiotherapy SLC for neurological rehabilitation by Bostick, Hall and Miciak, the supervision style in this SLC afforded the space and time for safe exploration of assessment and treatment skills.<sup>12</sup> The nature of the supervision model in the SLC means that there are more students to each supervisor therefore enabling this space to occur, which is different to traditional practice settings where ratios are lower. The supervision ratio in this study was one supervisor to six students, and similar to that of a study conducted by Mosely et al, in a UK University SLC where the supervision ratio was one clinical supervisor to between four and seven students, indicating such supervision ratios, although lower than some traditional practice placements, are both feasible and acceptable to students.<sup>20</sup> Traditionally allied health professions, in particular

occupational therapy and physiotherapy students are still supervised in the UK with a 1:1 model but with increasing pressure on practice placement capacity, SLCs may be a positive solution to support the development of clinical skills using a multi supervision model.<sup>16</sup> This may be considered to be a more sustainable supervision model requiring fewer supervisors for students. In addition, SLCs could also alleviate pressure on an overburdened rehabilitation system by providing patients with clinical intervention provided by students under the supervision of qualified staff. Further research should quantitatively assess clinical skill development in a SLC.

Participants reported that they benefitted from the teamworking approach in the SLC. This teamwork approach is a form of Peer assisted learning (PAL) which is a model where two or more students are supervised by one clinical supervisor with an emphasis on peer supported for learning.<sup>37</sup> Furthermore, PAL is delivered through the context of social engagement.<sup>14</sup> The findings of this study align with another study of physiotherapy practice based learning which similarly found that the PAL approach facilitated the development of students' confidence and independence over time.<sup>38</sup> This study found that PAL interactions improved participants' skills in treatment planning, adapting exercise, goal setting and problem solving. These findings are supported by a systematic review of PAL for allied health professions students which concluded that while PAL was effective for development of the aforementioned skills, it was most effective when applied to stage three and stage one students working together in traditional clinical settings.<sup>39</sup> This study indicates that the SLC underpinned by the PAL approach could be an effective model for the development of transferable skills for clinical practice however this is based on a PAL model between students of the same year and level of a programme, and further research is required to investigate SLCs with PAL involving students of different year groups.

The concept of patients being an integral part of the SLC and having a dual role as a patient and an educator emerged very strongly from participants' perceptions. In keeping with previous studies of patient satisfaction of SLCs, patients in this study were reported to have a positive influence on participants' learning.<sup>18,40</sup> Whilst patients did not receive any form of 'training' to participate in this SLC and they were accessing it as a rehabilitation service outside of the standard National Health Service care, participants' perceptions were that the patients in this study recognised the participants as learners and therefore had different expectations to those patients accessing traditional healthcare services. In addition, participants perceived that patients were grateful for access to the SLC as a means of rehabilitation in the absence of other services. These findings indicate that SLCs can serve an important function not only for the development of student learning but also as a community service for individuals to access rehabilitation. Whilst there is some congruence between the findings of this study and other published work, it is fully acknowledged that these findings are the perceptions of the students and therefore further research should explore the SLC experiences from a patient perspective.

### Limitations

Despite efforts to minimise limitations, several factors may affect the transferability of the findings. Recruitment via convenience sampling may have led to participant self-selection potentially excluding the views of others. However, the nature of the video diary method aimed to support the sharing of views in privacy though it is recognised may have limited the opportunity for probing to encourage depth of responses. We are however confident that open and honest opinions have been expressed. Transcripts and study findings were shared with all study participants for comment however no participant noted any feedback from this process. Students participating in this study were doing so as scholars of a higher education institution, therefore it must be acknowledged there was a risk of a power imbalance between the researchers and the student participants, although every effort was made to minimise any possibility or impact of this. This study involved participants from one University, therefore it is recognised that this may limit transferability of findings to other cohorts of students and to other SLCs in different settings, educational contexts, countries and for other allied health professions. Further research in these domains is required. Additionally, the SLC was for neurological rehabilitation therefore findings may not be transferable to SLCs for other patient populations or to SLCs where students have a wider leadership role related aspects such as, patient administration or appointment booking. However, given the similarity of findings in this study to previous research conducted, it is likely that comparable themes may be evident in SLCs for physiotherapy and other allied health professions with similar contexts. Further research could be conducted to confirm this hypothesis.

Despite one researcher's educational involvement, steps were taken to minimise bias and enhance rigour throughout the study. The participants in this study were all senior students who all had prior experience of being on traditional practice placements throughout their courses; and this may in part explain the comparisons some participants made between the SLC and their previous placement experiences. Such comparisons, whilst important for understanding what SLCs can offer in terms of student experience, may not reflect what students at earlier stages of a course may perceive about a SLC and therefore can only be attributable to more senior students at this time. However, it is clear from the experiences of the participants in this study that SLCs where students lead on design and delivery of patient interventions can offer real value in terms of development of skills and can provide a learning opportunity which is different and complementary to that of a traditional practice placement experience. Further research



should explore if the skills gained through the SLC experience are transferred to the clinical practice environment for physiotherapy and other allied health professions.

## CONCLUSION

This study has explored the evolving perceptions and experiences of physiotherapy students participating in a neurological rehabilitation SLC over time using a video diary method. Participants reported positive impacts on their clinical reasoning, skill development and learning, and identified challenges faced during the SLC. This study illuminated the students' developing perceptions over time indicating initial challenges followed by a positive shift and enrichment of their learning experiences as they navigated the SLC experience. Students generally thrived in the SLC over time despite initially feeling unprepared for the complexity of patients' presentations. The collaborative, peer-assisted nature of the SLC fostered teamwork, supervision, and motivation for active participation and encouraged idea-sharing and positive team dynamics through engaging with diverse patients who played a critical role in the students learning. Despite its focus on senior physiotherapy students and a specific neurological rehabilitation context, the findings of this study illustrate the value SLCs can provide in augmenting traditional clinical placements which should be inherently transferable to other student professional groups and potentially for people living with a range of other conditions who would benefit from access to rehabilitation. Overall, the study highlights the potential of SLCs in offering a distinct and beneficial learning experience for physiotherapy students, fostering skill development and a deeper understanding of patient-centred care.

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### APPENDIX 1: Student Video Diary: Topic Guide

Please review the questions below and answer them honestly as part of the video diary review related to your participation in the neurological student-led clinic.

Can you please record using the video function of your device.

1. Can you comment on your experience across the sessions;
    - Interacting with the service users
    - Conducting the interventions
    - Working with others (students)
    - Supervision from staff
  2. Can you comment on any development (personal or professional) you may have experienced (if so, in what ways?)
  3. What are your learning needs now (for future placement/learning )? Can you say why this is?
  4. Can you comment on any benefits you have experienced overall during the student-led group sessions.
  5. Can you comment on any challenges you have experienced overall during the student-led group sessions.
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