Experiences of providing self-management support: a qualitative study of pre-registration physiotherapy students at one university

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2   **registration Physiotherapy students at one university.**

3

4   **Abstract**

5   **BACKGROUND**: The importance of health care professionals in supporting self-
6   management of individuals with long-term conditions has increased significantly over the last
7   decade. While research has explored health care professionals' experiences of supporting
8   self-management, there is a paucity of literature exploring student experiences.

9

10 **OBJECTIVE**: The aim of this study was to explore pre-registration physiotherapy students'
11 experiences, of using self-management support principles in practice.

12

13 **METHODS**: A qualitative methodology was adopted, in which final year pre-registration
14 physiotherapy students, were invited to participate in focus groups to explore their
15 experiences of using self-management principles with patients in practice. Interviews were
16 transcribed verbatim and analysed using thematic analysis.

17

18 **RESULTS:** Four main themes were identified: i) self-management support as something to
19 apply or do, ii) environmental and patient factors influencing application in practice, iii) limited
20 development of self-management support self-efficacy and iv) learning experiences of self-
21 management support disjointed. Despite self-management support teaching, students had
22 varied theoretical comprehension of the concepts and overall lacked confidence in the
23 practical application

24

25 **CONCLUSIONS**: The findings suggest more consistent and practical approaches would
26 support learning and facilitate the development of students' self-efficacy for using self-
27 management support principles. For instance, curricula should encompass opportunities to
28 explore simulated scenarios to develop effective collaborative communication with
29 individuals and avoid didactic and directive approaches to providing self-management
30 support. Further research is planned to investigate students' experiences of a newly
31 validated curriculum where self-management support teaching is integrated and embedded.
32 Research to compare communication curriculum and effectiveness between universities is
33 also warranted.

34

35

36

Introduction

The concept of self-management support (SMS) is becoming a more established and necessary element of health and social care provision and is a top priority for transforming the English healthcare system as highlighted within the National Health Service (NHS) Long-Term Plan [1,2]. Currently, around 15 million individuals in England are living with one or more long-term conditions (LTCs), and it is suggested that 70-80% could benefit from self-manage support [3]. The term self-management broadly defines the behaviours and actions required by an individual to manage the emotional, social and physical aspects of living with their LTC [4]. Supported self-management however, aims to put the individual living with a LTC at the centre of their own health management through a collaborative approach facilitating individuals, their family or carers to successfully self-manage the symptoms and in the context of everyday life [5,6]. In addition, broader conceptualisations of SMS also address issues of social context and health literacy [7,8]. Research shows that self-management has the potential to improve health outcomes, patient experience and reduce unplanned hospital visits [9,10].

Health care professionals (HCPs) play an important role in SMS that works alongside an individual to frame what is important to them as a person. In line with the growing prevalence of LTCs there is a need for SMS to be acknowledged as key skills and competencies of HCPs [11]. Moreover, SMS by HCPs requires effective education and training, with an emphasis on person-centred skills and communication to promote behaviour change and engagement [12]. However, it may be argued that current pre-registration courses for healthcare students focus mainly on communication skills that are predicated on imparting expertise and teaching with origins in a medical model [13]. Given current drivers, it is essential that healthcare students establish a deeper understanding of enhancing health and wellbeing through SMS principles, and should receive adequate training such that they may effectively and competently work with individuals using person-centred SMS strategies in current and future practice [14].

Although the incorporation of SMS teaching into educational curricula is becoming more commonplace, literature has evidenced a fundamental gap [15]. There is currently limited literature analysing students' perceptions of SMS teaching and learning. A recent integrative review of literature by Donnelly *et al.* [6], reviewed the SMS education for healthcare students within pre-registration programmes. From 12 studies sourced, a variety of learning methods were used and facilitated an instructional or informational approach. This led to students citing barriers to implementation of SMS including lack of time and motivation, assumptions that patients had insufficient knowledge and feeling unsupported. The study

74   concluded that the teaching and learning approaches need to facilitate developing a
75   therapeutic relationship and include sufficient time for students to gain self-efficacy for
76   supporting self-management in practice [6]. Other studies emphasise that it is not just about
77   teaching but enabling students to have confidence to enact self-management strategies with
78   patients in the clinical setting. For instance research investigating penultimate and final year
79   nursing students' experiences of SMS found that factors influencing students' performance
80   included students' self-efficacy, perceived competency, perception of patients' knowledge,
81   communication effectiveness, time and support from the ward and teaching institution
82   [16,17]. Collectively this research highlights the limited work in the field of SMS training in
83   healthcare education which has prompted this study.
84
85   While there are gaps identified in pre-registration education, challenges are also noted in the
86   qualified healthcare workforce. A number of studies [16,18–20] have demonstrated the
87   perceived barriers in adopting SMS strategies in qualified allied health professionals. These
88   include lack of effective communication, time, organisation, control within the practice,
89   patient attendance and patients' understanding of their own conditions [16,18–20]. Enablers
90   to SMS included multi-disciplinary training, supportive teams, continual skill development
91   and previous SMS knowledge [16,19–21]. Although there is a small body of research in pre
92   and post registration healthcare colleagues' experiences in applying SMS strategies in
93   practice, there is limited knowledge about physiotherapy or more specifically pre-registration
94   physiotherapy students' experiences.
95
96   At the university where the project was planned there had been several targeted changes in
97   curriculum to improve SMS teaching. In 2019-20, academic staff worked collaboratively with
98   Bridges Self-Management, a Social Enterprise run in partnership with two universities. A
99   project funded by Health Education England supported the development of a range of new
100   teaching resources to integrate within existing curriculum for both BSc and MSc pre-
101   registration programmes. Bridges self-management is underpinned by research [22] and
102   has developed a model of personalised self-management support which focuses on how
103   practitioners interact and support confidence, skills, and knowledge. Bridges has been
104   developed and used across multiple healthcare pathways in the UK and is theoretically
105   informed by self-efficacy principles. Healthcare practitioners support service users to gain
106   confidence to self-manage using specific strategies and coaching language integrated into
107   everyday healthcare practice [23].
108

109 At the university in which the study took place, Bachelor of Science (BSc) physiotherapy first
110 year students had some introductory sessions on self-management. Most of the new
111 learning resources were introduced in the BSc second year and pre-registration Master of
112 Science (MSc) Physiotherapy first year where students participate in shared
113 musculoskeletal, neurological and cardiothoracic modules in what is previously termed
114 parallel teaching [24]. In the final year, there is some shared teaching, but the MSc students
115 also had a specific module on self-management support for people with long term
116 conditions. The research team recognise the imperfections of designing teaching and
117 learning resources to slot into pre-existing curriculum, but this was part of an ongoing project
118 to modify curriculum. This research aims to explore final year pre-registration physiotherapy
119 students' experiences of SMS teaching and their use of SMS with people with long term
120 health conditions in practice. Secondary aims were to inform future curriculum at the host
121 university and to develop guidance and recommendations that other physiotherapy and
122 healthcare programmes may consider.
123

124 **Methods**
125 ***Study design***
126 To address the aim a qualitative approach that was informed by phenomenological principles
127 [25] was chosen for this study to gain a deeper understanding of students' experiences.
128 Reporting of the approach, design and methods has been guided by the consolidated criteria
129 for reporting qualitative research (COREQ) checklist [26].
130

131 ***Participants***
132 The participants were recruited from one university. The total combined pre-registration
133 physiotherapy student population was approximately 230 (BSc and MSc), however it was
134 important that students were able to reflect on their placement experience, so a final pool of
135 80 final year students was the potential sample. An email invitation with a participant
136 information sheet was sent out via the virtual learning environment platform to all final year
137 physiotherapy students via the project supervisor (JAH). Interested students were then sent
138 a consent form to sign and return (all documents available on request).
139

140 ***Data collection methods***
141 Data were collected via semi-structured online focus groups. Focus groups are widely used
142 as a tool within medical research enabling in depth, conversational exchanges between
143 participants exploring experiences, attitudes and feelings to create shared meanings of
144 cultures and beliefs [27]. Focus groups for each final year physiotherapy cohort (MSc and
145 BSc) were planned separately. While some of the curriculum was shared or taught in

146   parallel, previous research indicated that these groups had separate identities [24] and

147   therefore it was felt that the focus groups would garner different perspectives in their own

148   cohort. Researchers LX and JDH were also students and acquainted with the course and

149   participants so facilitated all focus groups together.

150

151   Four focus groups were carried out amongst final year physiotherapy students, with 3-4

152   participants per group. While focus group sizes of between 3-8 are recommended [28], but

153   due to the COVID-19 restrictions, focus groups were conducted online via Microsoft Teams.

154   As such we followed guidance for fewer participants in online focus groups [29].

155   Advantages to online focus groups include participants' preference to its convenience,

156   including greater flexibility in scheduling and the option to participate from any physical

157   location with access to an appropriate device [30]. Focus group lasted between 46 and 51

158   minutes and were semi-structured by topic guides developed in consultation with Bridges

159   Self-Management and JAH (see supplementary file). Although consideration was taken to

160   conduct focus groups into their perspective cohorts, constraints in availability resulted in one

161   focus group amalgamating MSc and BSc participants.

162

163   *Data analysis*

164   All focus groups were video recorded and transcribed verbatim using Microsoft software by

165   researchers LX and JDH. All participants were assigned an alphanumeric for anonymity in

166   the transcripts that related to their cohort (MSc or BSc) and order of the focus groups from

167   B1-B5 and M1–M10. The video recordings were destroyed once transcription was complete.

168   Braun and Clarke's [31] thematic analysis was chosen for analysis. Thematic analysis is

169   widely advocated in health research as a powerful, yet flexible method for analysing

170   qualitative data [32]. LX led the initial analysis of MSc transcripts and JDH the BSc

171   transcripts. The transcripts were read several times to gain familiarity with data, then codes

172   were initially identified using Mendeley, although eventually printed and highlighted by hand.

173   Identified codes were then typed onto a Microsoft Word document to assist in identifying

174   initial sub-themes and themes with a table of verbatim extracts related to each sub-theme.

175   To check for consistency at several stages of data analysis, reflexive discussions were held

176   with an experienced qualitative researcher JAH. In an iterative process the final themes

177   across both sets of data were refined by LX, JDH and JAH and then presented to the other

178   researchers (RK, SBR and FJ) who have expertise in SMS and helped to further refine and

179   edit the themes through the writing process.

180

181   Ethical approval was granted by the Kingston University and St Georges University of

182   London Faculty Research Ethics Committee prior to recruitment (Ref: FREC2018-09-003),

183   as part of the ''aBout People': SMS in pre-registration Physiotherapy' project.

184

185   **Results**

186   Ten MSc and five BSc students were recruited for the study. The findings are representative

187   of the whole data set, but where there are differences between cohorts these are explained.

188   Identified themes and subthemes pertaining to physiotherapy students' experiences,

189   enablers, and barriers to applying SMS in practice were: 1) SMS as something to apply or

190   do, 2) environmental and patient factors influencing application in practice, 3) limited

191   development of SMS self-efficacy and 4) learning experiences of SMS disjointed (see Table

192   1).

193

194   **Insert Table 1 here**

195

196   **Theme 1 - SMS as something to apply or do**

197   *SMS for self and recalling prior physiotherapy practice*

198   When unprompted by researchers, there was ambiguity in the term 'SMS' between students.

199   Many initially referred to SMS in terms of self-managing oneself throughout the MSc pre-

200   registration course, with some referring the programme's intensity and how they self-

201   managed themselves to keep up with its demands.

202   *"It was really intense the MSc course […] we had to kinda adopt strategies of self-*

203   *management in order to succeed […] after succeeding in different various challenges*

204   *[sic] then I felt more empowered…and more aware about how I can use similar*

205   *principles to future challenging situations."* (Participant M10)

206

207   In addition, prior to starting the physiotherapy course, students generally had little

208   experience and/ or exposure to SMS. In one focus group, participants initially struggled to

209   recall experiences of SMS prior to starting the course, as if researchers had asked a trick

210   question. On the other hand, some students had exposure to what they perceived as SMS in

211   previous jobs although hadn't necessarily recognised these experiences as providing SMS.

212   *"… prior to [Lecturer 1]'s self-management module and my perspective […] would*

213   *essentially be working on your own following like a physiotherapist's guidance […]*

214   *being given a set of exercises or advice to rest, ice, etc. And just making sure you*

215   *comply and follow with that. Erm. I don't think I had much ideas [sic] to like group*

216   *involvement or the importance of self-efficacy. […] I was pretty clueless to be*

217   *honest."* (Participant M5)

218   *"I was a physio assistant before so I must have implemented some sort of self-*
219   *management into my patients [sic], but obviously without knowing […] even just*
220   *saying to a patient 'oh I want you to do this, like three times a day and I'll come back*
221   *and see you tomorrow'."* (Participant M7)
222   Nevertheless, these perceptions indicate a broad perception that self-management is about
223   the therapist instructing and the patient adhering in their own time.
224
225   *Tensions of SMS as giving information to or collaborating with patients*
226   The data indicated that student perceptions of how SMS related to physiotherapy were
227   varied. Some suggested that SMS was about giving information or helping to fix patients
228   and many students referred to SMS as a 'tool'; a way for physiotherapists to give patients
229   information for them to go away and self-manage their conditions independently. For
230   instance:
231   *"…giving the patient as much information as to how they can self-manage at home"*
232   (Participant M3)
233
234   However, other students described SMS differently, as a collaborative way to support
235   patients throughout a self-management 'journey' rather than something for them to
236   undertake independently following physiotherapy instruction.
237   *"…it's you or someone within the community […] to like, support them through that*
238   *journey as well."* (Participant M2)
239   *"I realise by my final placement that us as physiotherapist [sic] we really want to fix*
240   *everything and have control over a patient. But this […] makes them more dependent*
241   *and it's something that certainly we have to avoid [sic]."* (Participant M10)
242
243   *Limited translation of SMS theory and principles to practice*
244   There was a general lack of conscious acknowledgement of SMS approaches in practice by
245   the students. However, components of SMS such as person-centred care and collaborative
246   goal setting are frequently mentioned. Some students recognised that they may have
247   implemented principles of SMS inadvertently.
248   *"I've got to admit I'm pretty guilty as well, about not really knowing the theories to do*
249   *with like self-management? […] I guess like in terms of theories, I kinda don't really*
250   *use a model or theory."* (Participant M9)
251
252   However, this was not consistent for all participants; a few students referred to Bandura's
253   [31] self-efficacy construct as an enabler in facilitating patients' self-management.

254 *"I think I've really […] utilised the social- social cognition theory [sic] and have used*
255 *self-efficacy as like my sort of motto for self-management throughout all my*
256 *placements […] the way I've done that is through education. […] vicarious experience*
257 *[sic] in- in trying to get them to actually do it themselves so they [patients] gain a bit*
258 *of exposure to what they can actually do and then sort of reassuring and validating,*
259 *erm, that […] they can self-manage when we're not here or when they've got no*
260 *help."* (Participant M1)

261

262 **Theme 2 – Environmental and patient factors influencing SMS in practice**
263 Students described a number of factors that influenced their consideration of how they
264 support self-management in current practice and intend to in the future. The following
265 subthemes illustrate how they influence.

266

267 *Environmental cultures conducive to SMS*
268 The data indicates that the placement and work setting (e.g. discipline, caseload) was
269 significant to how students felt enabled to consider or adopt a SMS approach. For instance,
270 they perceived a private setting could restrict the scope of SMS due to differing institutional
271 values, whereas working within the NHS would be more conducive to SMS provision.
272 *"…about the private stuff it's not necessarily like conducive […] to give people*
273 *strategies so that they don't have to come back to physio. But in the public sector, I*
274 *think it's- it's probably quite important to introduce self-management quite early on."*
275 (Participant M2)
276 There are also assumptions that an SMS approach would take too much time when you
277 have a large caseload as this participant deliberates:
278 *"So at the moment, no we have, what, on a good day, 10-15 patients? On a bad day,*
279 *30 patients to see? …And then to write notes for all of them as well. And then you*
280 *need to liaise with the nursing team, and then the medical team. And then you need*
281 *to refer..."* (Participant B3)

282

283 Furthermore, students felt that the amount of support received by educators and placement
284 providers varied, and that more could be done to facilitate SMS learning not only for students
285 on clinical placements but for qualified physiotherapists. This also contributed to a
286 perception that SMS was not visible or explicit within the workplace setting as this participant
287 describes:
288 *"I feel like we didn't have much exposure to it on placement. Or if educators, perhaps*
289 *were- encompassing self-management, which I didn't notice, it wasn't necessarily*

290   *highlighted as self-management. And it's something that the NHS could kind of take*

291   *into account more."* (Participant M5)

292

293   *Perceptions that patients' attitudes challenge SMS principles*

294   Other factors related to students' perceptions of patients' existing expectations, compliance

295   levels, knowledge of their own conditions and existing self-management strategies all

296   influenced whether students considered principles of SMS in practice.

297   Unhelpful attitudes and beliefs were often seen as a barrier to providing SMS, where

298   students described at times feeling at a loss as to what more they could do to help patients

299   self-manage.

300   *"…we tried all the tools that I kind of knew, but […] he just wasn't […] that bothered."*

301   (Participant M6)

302   *"Not all of them [patients] are the most receptive and as such they need, I would say,*

303   *more convincing…"* (Participant B3)

304   *"…you can give someone all the education. All the strategies that work for them and*

305   *you can make it as patient centred as you want, but it does have to come from within*

306   *them to make themselves want to self-manage."* (Participant M7)

307   *"…my favorite patient up until now - I'm not supposed to have favorites, but my*

308   *favorite patient up until this point - has listened to everything I've said has taken all*

309   *my advice and has requested that I show up at the exact same time every day so*

310   *that he knows it's me."* (Participant B2)

311

312   Additionally, students experienced varying perceived levels of patients' knowledge of their

313   own conditions, where some participants felt as though patients' knowledge levels were

314   insufficient to enable them to be supported to self-manage.

315   *"…their strategies were either understanding their own condition or not*

316   *understanding their condition, which a lot of them don't really know."* (Participant M9)

317

318   Patients' pre-existing self-management strategies also influenced students' confidence in

319   implementing SMS, with students feeling apprehensive about interfering with patients'

320   existing strategies.

321   *"…they've been doing it [self-management] for years and you kind of just skate over*

322   *that instead of making it […] any better, you're like 'right […] I'm not going to interrupt*

323   *that' when actually, us, as the practitioner should be saying, '[…] What can I do now*

324   *to, you know, improve what you're doing already'?"* (Participant M7)

325

326   **Theme 3 – Limited development of SMS self-efficacy**

327 The data indicated that students had variable levels of SMS self-efficacy. They particularly
328 identified that they did not have the competencies, but this developed through mastery
329 experience and vicarious learning.
330
331 *Vicarious learning through lecturers, educators, and peers*
332 The data demonstrated that students described uncertainty about knowledge acquisition as
333 previously indicated in the subtheme 'limited translation of SMS theory and principles to
334 practice' in Theme 1 above. This lack of knowledge and the contribution to self-efficacy is
335 explained by the participant:
336   *"I think the biggest apprehension I had was that I was afraid I wouldn't be able to*
337   *provide all the choices necessary [so] that they [patients] could potentially be able to*
338   *self-manage themselves."* (Participant B2)
339
340 Students found learning vicariously through others useful in increasing their SMS self-
341 efficacy, whether through lecturers sharing lived examples during online teaching, observing
342 educators providing SMS on placement, or discussions with peers.
343   *"I feel a lot of the teaching that we actually take through into our own practice comes*
344   *from seeing what our educators and their team utilise. So although we are taught it, if*
345   *we don't see it being practiced, perhaps we don't necessarily follow it."* (Participant
346   M5)
347
348 *Placements provided mastery experience.*
349 Most students felt that clinical placements reinforced and gave value to SMS teaching and
350 the opportunity to consider SMS for clinical scenarios.
351   *"It was a bit like a light bulb moment when they were talking about it in our final year,*
352   *which is now. And you could like relate it to examples on placement, so I think we're*
353   *quite fortunate to tie the two together […] I guess placement kind of helped to*
354   *actually show you that […] it kind of does make sense."* (Participant M9)
355   *"… actually being able to bounce ideas off of your educator and having someone*
356   *that's actually willing to have you say your piece, but then kind of guide you down the*
357   *right path if you made a little bit of a mistake and being OK to make a mistake, I think*
358   *that's really important…"* (Participant B4)
359
360 **Theme 4 – Learning experiences of SMS disjointed**
361 Overall, the final theme indicated that students felt strongly that SMS teaching within the
362 curriculum was inconsistent and with limited practical consideration of how they would use
363 those skills. They used these experiences to make suggestions of how the course could be

364 improved. Whilst the students talked of their experiences of the MSc or the BSc programme,

365 these feelings were identified in both groups.

366

367 *Inconsistent curriculum across the course(s)*

368 Students unanimously reported a lack of consistency of SMS teaching throughout the

369 duration of both the pre-registration courses (MSc and BSc), expressing that integrating

370 SMS concepts into earlier modules would have been helpful in terms of improved continuity.

371 　　*"I also think it should be right at the beginning of the course as well in every single*

372 　　*module that we cover […] In every single- MSK, it needs to be in neuro, needs to be*

373 　　*in everything because you self-manage differently in everything. So yeah, if that was*

374 　　*to change the teaching, it needs to be mentioned and labelled as self-management*

375 　　*and not as anything else."* (Participant M7)

376 　　*"The biopsychosocial model that came up a lot in first year and talking about, you*

377 　　*know, how can you see their patient throughout all of the factors that make up one*

378 　　*person."* (Participant B4)

379

380 Similar to thoughts on consistency, the majority of the students felt strongly that the self-

381 management module (only undertaken by the MSc students) took place too late within the

382 curriculum and would be more helpful to have been brought forward. Frustration was

383 attributed to students feeling that due to the placement of SMS teaching within the course

384 structure, they were left with limited opportunity to practice integrating SMS strategies whilst

385 on their final placements.

386 　　*"I think that could have been so much better […] if that was changed in- instead of*

387 　　*the first 10 weeks where we just focused on like the anatomy, physiology bit, and if*

388 　　*there was a bit of like self-management […] I think we would have taken more out of*

389 　　*the course and we would have been able to use those principles for the rest of our*

390 　　*two years."* (Participant M1)

391

392 *Lack of teaching on applying SMS principles practically*

393 Furthermore, many students on both programmes felt that there should have been an

394 element of practical SMS teaching within the curriculum and felt underprepared in this

395 regard. Students felt strongly that learning SMS principles and theory was not synonymous

396 with competency in providing SMS. Additionally, students felt that practical sessions would

397 have been helpful to improve aspects of communicating SMS principles.

398 　　*" 'Yeah, everybody should do self-management. Yeah, get your patient doing*

399 　　*Bridges, yeah!' Like really promote this but then when it actually comes down to itno*

400 　　*one's got a flying clue how to do it."* (Participant B1)

401   *"Giving students a... Well, one hour. Not even, not even a lecture, it was a one-*
402   *hour workshop on management. Doesn't really enforce that that notion of 'Oh yeah, I*
403   *need to actively do this.'"* (Participant B3)
404   *"… some more kind of clinically applied teaching could be helpful […] because it's all*
405   *very good knowing the theory behind it, but actually it's helpful to have some more*
406   *advice on how to implement it in our jobs."* (Participant M5)
407   *"… there was no application to clinical practice […] So if they [teachers] were going*
408   *to make anything better, […] they should have made it a practical thing, because I*
409   *think it's just as important to be able to do it, but to be able to explain it to a patient."*
410   (Participant M7)
411

412 *Placement experience emphasises the importance of SMS in future practice.*
413 Reflecting on their consideration of SMS, students felt as though initially during the course
414 and prior to clinical placements, they had not given SMS enough consideration. Moreover,
415 many participants recognised that through their practice and following the focus group
416 discussions that they could see the importance of SMS in future practice:
417   *"I didn't really have self-management in the back of my mind, and that sort of*
418   *developed throughout my placements and I realised how important that was."*
419   (Participant M2)
420   *"I feel […] I'm not that confident in it [SMS] following this conversation, and that there*
421   *is more to learn about, like how to implement the principles. […] I need to learn more*
422   *to be able to implement it effectively. But I feel like it is becoming more commonplace*
423   *in practice."* (Participant M5)
424

425 This study was conducted during the COVID-19 pandemic. Therefore, the students'
426 responses were influenced by the experiences of struggles they faced with remote teaching
427 and learning. Students felt that online learning inhibited opportunities for open discussion
428 with peers and lecturers, and expressed that adapting to remote learning itself was an
429 additional challenge for learning about SMS.
430   *"…I'm not sure if we've like been negatively affected because of COVID and stuff and*
431   *we just had like less opportunity to discuss these types of things (SMS). […] there's*
432   *not actually like, wholesome conversations […] I don't know if it would have been*
433   *different in past years."* (Participant M6)
434

435 **Discussion**

436 The results of this study highlighted a variety of physiotherapy students' experiences of
437 using SMS principles with patients in practice. Students generally held an appreciation for
438 the importance of providing SMS, although upon reflection most students acknowledged that
439 they hadn't given SMS enough consideration and that they would more, in future practice.
440 These thoughts are reflected by HCPs views on providing SMS in a study by Mikkonen and
441 Hynynen [33], who felt it was necessary to acknowledge their own beliefs, attitudes and
442 abilities to develop person-centred care. The honest reflections shared by students within
443 this study are promising within the context of person-centred education, as we shift the
444 paradigm from the traditional patient education model [34].

446 Despite Bandura's work on collective efficacy and the need to look to generate support
447 through personal communities, a strong emphasis on personal agency still remains in the
448 healthcare literature on SMS [35]. In this study, student comprehension of 'SMS' mostly
449 aligned with personal agency. Many students initially referred to SMS as managing their own
450 well-being and academic management, rather than how they work collaboratively with
451 patients. Whilst this was not our focus, self-management of learning is considered
452 elsewhere in the literature [35–37].

454 One significant theme which arose from this qualitative study is that students viewed SMS as
455 a 'tool', or the 'giving of information'. This perception of SMS as 'giving information' to
456 patients is a well-discussed topic within SMS literature; it is becoming more widely
457 recognised that merely conveying information is not conducive to behaviour change or
458 improving patients' skills in self-management [38,39]. As there is a greater move away from
459 a didactic approach where the clinician is viewed as the 'expert', patients should be
460 empowered to become experts of their own conditions [40], working alongside clinicians as
461 part of a collaborative relationship. Therefore, it is important that healthcare students are
462 mindful of this tendency to assume a position of authority over a patient, which becomes a
463 barrier to effective SMS and does not align with its core values [40], and therefore curriculum
464 needs to be designed to help facilitate this.

466 Although formal teaching of SMS theories and concepts has been highlighted as one way to
467 reduce this didactic educational approach [14], the majority of participants expressed that
468 they neglected to consider specific models or theories during placements. Taylor *et al.* [14]
469 caution that practicing a concept that is not fully understood may cause HCPs to default to
470 patient education as SMS. Students frequently mentioning the utilisation of collaborative goal
471 setting and patient-centred care, both key principles of the application of SMS [38], however
472 they did not always recognise that these related to SMS or that they were applied

473   appropriately or consistently. A few students, however, did mention specific theories such as

474   Bandura's social cognitive theory [41] and the concept of self-efficacy as an enabler in

475   implementing SMS in practice. While these constructs have long been recognised as crucial

476   in improving health behaviours and outcomes [42], it appears students need greater support

477   to consider how they apply.

478

479   In addition, personal perceptions of patient's attitudes, beliefs and knowledge were influential

480   in students' application of SMS. Students felt frustrated when they perceived patients'

481   attitudes and beliefs as unhelpful and implied these created barriers to providing SMS. This

482   contrasts with evidence on patient beliefs [43,44]. On occasions this led to students feeling

483   as if their efforts to help patients self-manage were futile, which aligns with a view found in

484   other research that self-management is a moral responsibility of patients to manage their

485   condition [7]. There is a danger that students were absolving responsibility and seeing the

486   patient 'taking it on themselves' within a model of compliance. These findings are congruent

487   with research about qualified physiotherapists experiences [40,45,46], that report that

488   patients' perceived attitudes and expectations are a determining factor in whether

489   physiotherapists engage in self-management interventions. Some physiotherapists state

490   there is little they can do to change their patients' behaviours [40]. These findings suggest

491   that curriculum should also anticipate this tension that students may feel between providing

492   care for patients versus empowering individuals to make their own informed decisions

493   regarding the management of their health.

494

495   Similarly, students' perceptions of patients' health literacy levels was another factor

496   influencing students' use of SMS principles in practice. Some students recalled challenging

497   encounters where patients had adopted pre-existing self-management strategies and felt

498   apprehensive about the best way to discuss new SMS strategies. Literature suggests that, if

499   patients who have developed experiential knowledge feel as if their input has been

500   undervalued by HCPs, this may be detrimental to forming a helping therapeutic relationship

501   [47]. Furthermore, Duprez *et al.* [17] found that nursing students who overlooked patients'

502   self-management capabilities relapsed to a 'nurse-expert' approach. These findings indicate

503   that physiotherapy and healthcare students may benefit from preparation on how to

504   overcome barriers such as those highlighted above, to avoid adopting a directive SMS

505   approach [17].

506

507   In this study, there was varied self-efficacy in using SMS principles with patients on

508   placement. Self-efficacy can be enhanced in several ways, including mastery experience

509   and vicarious learning [41], which was reflected in participants' experiences of SMS learning.

510 Some students expressed how they found it useful to learn vicariously through anecdotal
511 examples from lecturers, which gave students more context in terms of the how they might
512 consider SMS practically. This class-based approach, also described as narrative pedagogy,
513 has been found to connect and open up dialogue between students, further enabling an
514 appreciation that learning can evolve through reflection on experience [48]. Students also
515 learnt vicariously through observing educators whilst on placement, and discussions with
516 peers. Horsburgh and Ippolito [47] explored the process of learning from role models in
517 clinical settings, and found that participants felt motivated by observing actions and
518 behaviours of educators and more willing to practice them. . However, Donnelly *et al.* [6]
519 writes that observation of a task is not as beneficial for learning as mastering the experience
520 oneself.
521
522 Notably, most students agreed that clinical placements solidified SMS teaching and provided
523 mastery experiences. Duprez *et al.* [17] describe the classroom as a safe environment to
524 learn, whereas opportunities on clinical placement provide and authentic environment for
525 dealing with complexity. Stoikov *et al.* [49] found that clinical placements prepared pre-
526 registration physiotherapy students by providing exposure in a clinical environment to
527 increase skills and confidence to apply knowledge, an essential step in translating theory to
528 practice. Participants of this study shared this same view in terms of their SMS learning
529 experience.
530
531 The teaching of SMS within healthcare curricula continues to evolve through evaluation.
532 Students felt strongly that SMS teaching could have been improved by altering the course
533 structure so that the concept of SMS was integrated earlier and consistent throughout the
534 curriculum, giving students more opportunity to utilise SMS strategies whilst on clinical
535 placements to consolidate learning. This same view is reflected by Donnelly *et al.* [6], who
536 conclude that SMS teaching should be provided over an extended time period with repeated
537 exposure to SMS content enabling students to increase their SMS self-efficacy.
538
539 Furthermore, students felt that while they were taught theory, there was a lack of opportunity
540 to practice and apply skills in teaching sessions to prepare them for implementing SMS in
541 practice. This is not uncommon within SMS literature; a study by Figueiredo, Mayo and
542 Thomas [15] investigating rehabilitation students' intentions to implement SMS revealed that
543 students felt that more practical SMS teaching would have been beneficial to develop their
544 skills and adapt to different situations. One aspect which students suggested would be
545 useful to include in practical teaching was collaborative communication styles to facilitate
546 SMS, which has been found to be valuable in HCPs' experiences in SMS training [50].

547

548   Due to the COVID-19 pandemic, all SMS teaching was delivered online which many

549   students perceived as a barrier to learning. Munro *et al.* [10] assessed combined e-learning

550   and face-to-face SMS teaching and found that whilst e-learning has its benefits, complete

551   delivery via this method is unfavourable due to a lack of practice and application

552   opportunities. Furthermore, a study exploring nursing students' experiences of remote

553   learning during the COVID-19 pandemic [51] found that students reported feeling isolated,

554   missing study groups and feeling unable to ask questions to peers. There are similarities to

555   this studies participants' responses, who felt the lack of opportunity to engage in open and

556   meaningful discussion with peers and lecturers during online class posed as a barrier to

557   learning.

558

559   ***Limitations***

560   This study was initially intended to encompass both penultimate and final year students,

561   however as the data collection took place during the penultimate year groups placement

562   period, it was difficult for students to commit their time.   Therefore, the responses collected

563   from this study refer to the outgoing curriculum and not where the new teaching and learning

564   resources were integrated or indeed embedded and assessed, which is the ambition of

565   future research. Another potential limitation is that both researchers also took on the role of

566   focus group moderators which may have led to social desirability response bias [52].

567   Furthermore, the homogeneity in group compositions may have inadvertently generated a

568   lack of diversity in ideas, although this could also present as a strength in terms of facilitating

569   open communication owing to students' pre-existing relationships [26]. Finally other

570   stakeholder perspectives such as practice educators, employers and academic staff are not

571   included. These perspectives may have assisted in triangulating the findings, however this

572   was beyond the scope of the current project and maybe beneficial for future research.

573

574   **Conclusions**

575   As the number of people living with LTCs is predicted to rise, the emphasis on adequate

576   SMS competencies in graduate physiotherapists is apparent. The findings of this study

577   provide useful insight into the impact of SMS teaching within pre-registration programmes on

578   students' experiences of the application of SMS. Although students seemed to have a varied

579   comprehension of SMS, most students acknowledged that providing SMS is an important

580   facet within the scope of physiotherapy, and within their future practice. Opportunities for

581   students to practice and apply skills of SMS implementation should be considered within

582   curricula. These opportunities could provide simulated experiences to explore collaborative

583   communication strategies and shared decision making. Communication strategies that are

584 didactic and directive could be reflectively analysed to see how they create a barrier to

585 patient-centred SMS and should be avoided. There is also a need to foreground and assess

586 these skills within the curriculum so that students can develop greater self-efficacy for SMS

587 and to work more effectively in an ever-changing health and social care landscape.

588

589 These results have been useful for considering pedagogic changes in the organisation which

590 this study took place. Without intending to generalise, the findings might also have

591 relevance in other physiotherapy education settings. With aims to develop competent, SMS

592 encompassing practitioners, consideration should be taken by educational organisations to

593 include SMS curriculum to enable the development of pre-registration physiotherapy

594 students' self-efficacy for negotiating SMS with patients. Further research is planned, to

595 ascertain students' experiences of the new validated curriculum where SMS teaching occurs

596 much earlier in comparison to this cohort of students. There are implications to conduct

597 research that explores the extent of SMS curriculum in pre-registration physiotherapy

598 education and its effectiveness in preparing students for practice in SMS.

599

605 **Conflict of Interest**

606 Fiona Jones is the CEO and Founding Director of, and Scott Ballard Ridley is employed by

607 Bridges Self-Management Social Enterprise which is a non-profitable organisation. The

608 project and paper are based on the principles of Bridges Self-Management, and both are

609 authors of this paper. There are no other financial or non-financial competing interests to

610 report.

611

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776 **Table 1. Summary of themes and subthemes**

1. SMS as something to apply or do	2. Environmental and patient factors influencing SMS in practice
- SMS for self and recalling prior physiotherapy practice - Tensions of SMS as giving information to or collaborating with - Limited translation of SMS theory and principles to practice	- Environmental cultures conducive to SMS - Perceptions that patients' attitudes challenge SMS principles
3. Limited development of SMS self-efficacy	**4. Learning experiences of SMS disjointed**
- Vicarious learning through lecturers, educators, and peers - Placements provided mastery experience.	- Inconsistent curriculum across the course(s) - Lack of teaching on applying SMS principles practically - Placement experience emphasises the importance of SMS in future practice

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