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## Shifting mindsets: a realist synthesis of evidence from self-management support training

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### **Abstract (300/300)**

#### **Context**

Accompanying the growing expectation of patient self-management is the need to ensure healthcare professionals (HCPs) have the required attitudes and skills to provide effective self-management support (SMS). Results from existing training interventions for HCPs in SMS have been mixed and the evidence base is weaker for certain settings, including supporting people with progressive neurological conditions (PNCs). We set out to understand how training operates, and to identify barriers and facilitators to training designed to support shifts in attitudes amongst HCPs.

#### **Methods**

We undertook a realist literature synthesis focused on: 1) the influence of how HCPs, teams and organisations view and adopt self-management; 2) how SMS needs to be tailored for people with

PNCs. A traditional database search strategy was used alongside citation tracking, grey literature searching and stakeholder recommendations. We supplemented PNC-specific literature with data from other long-term conditions. Key informant interviews and stakeholder advisory group meetings informed the synthesis process. Realist context-mechanism-outcome configurations were generated and mapped onto the stages described in Mezirow's Transformative Learning Theory.

## **Results**

Forty-four original articles were included (19 relating to PNCs), from which seven refined theories were developed. The theories identified important training elements (evidence provision, building skills and confidence, facilitating reflection and generating empathy). The significant influence of workplace factors as possible barriers or facilitators was highlighted. Embracing SMS often required challenging traditional professional role boundaries.

## **Conclusion**

The integration of SMS into routine care is not an automatic outcome from training. A transformative learning process is often required to trigger the necessary mindset shift. Training should focus on how individual HCPs define and value SMS and how their work context (patient group and organisational constraints) influences this process. Proactively addressing potential contextual barriers may facilitate implementation. These findings could be applied to other types of training designed to shift attitudes amongst HCPs.

## Introduction

Supporting patients to self-manage their long-term conditions is seen as an important part of the role of healthcare professionals (HCPs).(1) The World Health Organization suggests empowering people to manage their own conditions may be one way to improve the efficiency and quality of health services.(2) Self-management support (SMS) has been described on two levels.(3) One relates to specific tools and techniques that HCPs use within the consultation (for example goal setting and action-planning) to try to empower patients to take a more active role in their health. At a higher level it can also be seen as a fundamental shift in how HCPs approach their relationships with patients, promoting collaboration over paternalism. However, there is recognition that without specific training, HCPs may not have the necessary skills or mind-set to effectively provide SMS (4-7). Previous initiatives attempting to enhance HCPs' skills in SMS have shown variable results.(4, 7-10) This may be partly because HCPs' attitudes to their role in relation to SMS vary, and SMS training often challenges a traditional biomedical approach with which HCPs may be familiar and comfortable. Evidence from the related area of shared decision making shows that training interventions alone do not foster adequate attitudinal shift among teams to facilitate ongoing practice change.(11) Learning when and why HCP targeted SMS interventions succeed or fail may provide transferable lessons to other settings in which significant professional paradigm shift is a prerequisite for change in practice.

There is a large volume of research relating to SMS in selected conditions, with type 2 diabetes frequently being a focus.(12-14) There are concerns though that this has tended to encourage an approach to SMS that focusses narrowly on disease control and defines success using biomedical measures such as blood glucose levels, (13, 14) which may be less meaningful to the patient.(12) Although this approach may be understandable, both because of the significant implications blood glucose control can have on short and long term health, and because of the use of blood glucose levels as a measurement of quality care, it may not be a suitable model for use in other settings.(14)

We planned to focus our review on HCPs working with people with progressive neurological conditions (PNCs). This setting is relatively under-researched when compared with other conditions (4). A broader and more holistic approach to SMS is likely to be required by HCPs working with people with PNCs because there may be less that patients are able to do to control disease progression.(14, 15) In addition, SMS for people with PNCs may be complicated by commonly occurring co-morbidities including depression and cognitive impairment, which can also affect individuals with a wide range of other long-term conditions. How HCPs learn to conceptualise and enact SMS in this setting may therefore provide valuable lessons for those working elsewhere who wish to provide a broader form of SMS that employs diverse and flexible strategies and focusses on living well with a condition.(14)

We undertook a realist synthesis, a method of evidence synthesis designed for complex interventions, which aims to answer the questions: “what works, for whom and in what circumstances?”(16) We set out to understand how training operates, what facilitates training designed to support shifts in attitudes amongst HCPs, what barriers exist and how these can be addressed. Targeted research questions were developed as part of the review process outlined below. The product of a realist synthesis is a refined theory or set of theories which describe the mechanisms by which (in this case) training operates to produce intended and unintended outcomes. These mechanisms can consist of the resources that training provides to participants and the reactions of the participants.(17) Training mechanisms are contextually dependent (delivering the same training in different settings will not always result in the same outcomes). Realist theories are described as configurations of contexts and mechanisms that lead to certain outcome patterns.(16, 17) The aim is to produce theories that are ‘middle-range’ in nature, that is, at an adequate level of abstraction to be transferable to other settings.(18, 19)

## **Methods**

The review protocol was registered with PROSPERO (CRD42016035596). A more detailed description of the methods used, and how the review stages overlapped, is described in detail elsewhere.(20) In brief, initial scoping of the literature was undertaken by FD for key themes relating to training HCPs in SMS, using both known key papers and informal searches. The themes arising from the scoping phase were discussed at a meeting of stakeholders (research team, HCPs, service users and advocates)(20), priorities for the review were agreed, and two detailed review questions with associated 'initial rough theories' were formulated.(19) (See Box S1 for further details)

### *Review questions*

The first question focussed on the influence of how SMS is conceptualised at the levels of the individual, team, and wider organisation on how SMS is enacted. The second aimed to examine how HCPs needed to tailor SMS for people with PNCs. Professional level outcomes are the most immediate outcomes of training, and are essential if HCP training is to have any impact on patients or the wider organisation. To keep the review focussed and manageable, as the review progressed, theories associated with outcomes at the level of the professional were prioritised for further exploration.

### *Identifying papers for inclusion*

A database search strategy using free-text and MeSH headings relating to i) HCP terms, ii) self-management terms, and iii) progressive neurological condition terms was piloted and refined with the support of an information specialist.(20) (See Box S2 for further details of terms used) A bespoke abstract screening tool was used to prioritise papers identified via database searching for review.(20) In brief, papers were identified as 'highly relevant' if they described HCPs providing SMS in the context of PNCs (including general views, receiving training or experience of implementation). Papers relating to the same issues but not within the PNC context were ranked as 'probably relevant'. Papers addressing other aspects of SMS (e.g. descriptions of patient needs) or when the role of SMS in an intervention or the identity of the SMS provider was unclear were ranked lower.

All highly relevant papers underwent full-text review, and abstracts ranked probably relevant were selectively reviewed based on their content and the direction of the developing theories. Database searches were supplemented by forward and backward citation tracking of included articles and existing systematic reviews, grey literature and table of contents searches, and papers known to the stakeholder group (see Figure 1). These supplementary approaches overlapped the data extraction and synthesis process, which allowed emerging ideas to inform decisions about the inclusion of identified articles.(20) Articles were included based on their relevance to the review questions, with no restrictions on the type of evidence. Initially, the searching and extraction process focussed on the PNC setting, but as the review progressed, articles from clinical settings not involving PNCs but which provided rich and relevant explanatory data were included with the aim of answering the review questions more comprehensively. This was an iterative process, and the decisions about relevance were influenced by the stage of the review and the level of theory development achieved at the time of assessment. Papers identified late in the review process from non-PNC settings which provided supportive data without generating new insights were seen as providing evidence of emerging theoretical saturation of some concepts.(16) These were recorded but not included in the review. (See Table S2) Quality assessment was performed not at the level of whole articles, but at the level of individual data extracts, the credibility of which were considered when interpreting the results and how they should be used in the synthesis.(16) A core set of descriptors for each study was collected including study identifiers, setting (patient group, staff group, country) and intervention described.

### *Synthesis process*

Initially, explanatory data relating to either of the research questions were extracted in the form of “If-Then” configurations (21) which described links between elements of contexts, mechanisms and outcomes. (See Box 1) As the synthesis progressed, related If-Then configurations were grouped together and used to generate realist context-mechanism-outcome configurations. During the

synthesis process we further divided contextual influences into enabling or inhibitory factors. We described mechanisms as being comprised of the resource provided by an SMS intervention and the associated reasoning generated by exposure to the resource in a given context.(17) The majority of the data extraction and synthesis was undertaken by FD who was fully immersed in the data, with FW double-coding a sample of included articles (four). NVivo 10 (QSR International) was used to manage the data and provided a way to organise the source data under developing theories. Groups of related context-mechanism-outcome configurations formed the basis of the set of seven refined theories which are the product of the review. The aim of a realist synthesis is to move from using the literature to generate theory, towards using the literature to test the theories developed.(16) We recognised as the review progressed that the limited depth in which interventions were described was likely to limit the scope for theory testing. This problem has been encountered in previous realist reviews of the educational literature.(22, 23) While the review was ongoing, we also conducted five telephone interviews with key informants (three HCPs, two lay trainers) involved in SMS training and held two further stakeholder meetings. Both of these steps allowed us to discuss the emerging review findings and informed our interpretation of the available literature. Realist reviewers also make use of existing formal theories (e.g. constructivist learning theory) to make sense of the evidence generated during their review.(19) During the review process we identified existing formal theories referred to within included articles, and used these together with those already known to the authors to help us interpret the findings emerging from the data.

#### **INSERT BOX 1**



## Results

### INSERT FIGURE 1

Forty-four original research articles contributed data to the synthesis. Eleven of the included papers were specific to a PNC, with a further eight including PNCs alongside other conditions. Of the remaining included papers nine related to another neurological condition, thirteen to other long term conditions and three papers did not specify the patient population. (See Figure 1 Included Studies Diagram and Table S1 Characteristics of Included Studies). Where sufficient detail was available to make specific reference to how SMS had been adapted to the PNC setting this is reported on, but such descriptions were often fairly limited. Elements of context-mechanism-outcome configurations are labelled in brackets within the results as context (C), features of the intervention resource (I), mechanism (the reasoning that was triggered)(M),and outcome (O). Any interpretation made by the authors not directly derived from the literature is italicised. A list of all papers contributing to each theory is presented together with examples of specific contributions. In the final phase of the synthesis we looked for existing formal theory which would help us to demonstrate how the refined theories generated from the literature synthesis might fit together under an overall explanatory framework. We found several existing theories were informative including normalisation process theory,(24) and technology acceptance model,(25) but in this paper we focus on how transformative learning theory (26) helped us to understand our emerging findings. Transformative learning theory is a theory of adult learning centring on the idea that the goal of adult education is to assist the learner to become a more independent thinker through a process of critical reflection on their own values, meanings and purposes, leading to restructuring of existing frames of reference.(26-28) The theory recognises the significant role of contextual influences and interpersonal interactions on the learning process, as well as highlighting the emotionally challenging nature of the process for learners.(28) Our refined theories are presented below, organised under the stages of transformative learning theory. Figure 2 summarises the overall

findings of the synthesis. Although the stages of transformative learning are presented here in a linear fashion; in reality there will be pauses in the transformation process and the process may be dynamic and cyclical. Within the refined theories developed from the synthesis, this cyclical nature is demonstrated, as each stage may occur during training and then be repeated during implementation.

The first stage of transformative learning involves participants being confronted with a 'disorientating dilemma'. We found that the presentation of evidence was sometimes used as a way to challenge HCPs' current practice, leading to the development of Theory 1.

**Theory 1: Training provides evidence for the benefits of SMS provision (I). Whether the evidence is deemed sufficient to make SMS appear worthwhile (M) depends on the type of evidence HCPs value most (C). If the evidence is judged insufficient (M), then SMS provision is not prioritised (O).**

Four articles (29-32) provided evidence for this theory. Professional background (C) appeared to influence the type of evidence that was valued. Medical staff were reported to prioritise evidence from research trials, and the lack of this type of evidence was a significant barrier to accepting an SMS approach. A policy-maker from one study (29) noted:

"some of the clinical community historically looked at randomised controlled trials, at that kind of evidence base. I think we're looking at much more action research and lived experience and sharing what works at a personal level.....it doesn't have to be based on randomised controlled trials."(29)

When evidence was judged as insufficient (M), new practices were not seen as worthwhile to adopt (O), especially if they ran counter to current established routines.(31) In settings where HCPs were expected to provide SMS but had multiple other competing demands on their time,(C) a lack of evidence led HCPs to feel that providing SMS could not be justified (M) and other tasks had to be prioritised (O).(32)

The next phases of transformative learning involve a process of self-examination which generates negative feelings and a critical assessment of current assumptions. Two of our theories mapped under these stages.

**Theory 2: Training provides opportunities for HCPs to reflect on their current practice in relation to SMS (I). Influenced by pre-existing ideas about SMS (C) this reflective process may act to validate current practice (M) or demonstrate a need for practice change (M – O). Characteristics of the training (I) influence the likelihood of facilitating helpful reflection.**

Thirteen articles contributed data to this theory.(32-44) For HCPs who were already ‘bought in’ to the idea of SMS (C), exploring the concept further in training could act as validation (M) of their approach, leading to a sense of encouragement and motivation to continue their current practice (O). In a written case reflection, completed after training, a therapist from one study (37) described:

“I use a client-centred, client-expert perspective in my work. I think the process has empowered me to use/recognise this approach” (37)

Critical reflection (M) was sometimes inhibited by the HCP’s pre-existing view that they were already providing adequate SMS (C), resulting in a belief that no change in practice was required (O).

Training elements (I) influencing the likelihood of facilitating helpful reflection included inter-professional training, the perception of the group as a safe environment and providing direct evidence of current consulting behaviours (e.g. recordings). (33, 35, 37)

For some HCPs, the process of critical reflection facilitated by the training (I) led to a realisation (M) that their current practice did not fit with their values about a patient-centred approach (C), and this acted as motivation to start working differently (O).(32, 33) During the implementation stage when HCPs started providing SMS and reflection provided evidence of success (I), HCPs became convinced of benefits (M) and motivated to continue (O).(39) This process was facilitated by clinical supervision and peer support (C).(40, 43)

**Theory 3: Both training activities and applying SMS principles in practice (I) can generate new empathy for patients based on a different perspective on their lives (M). This can alter HCPs' expectations of their patients, and make their work more satisfying (O). The development of empathy relies on reflective skills which may be facilitated or inhibited by personal, organisational and training characteristics (C).**

Eight articles provided evidence for this theory.(40, 42, 45-50) There was limited evidence relating to contextual barriers to fostering empathy. Some training interventions specifically focussed on developing empathy (I), using simulations (49), setting HCPs self-management tasks for completion,(50) or using lay trainers to highlight the patient experience.(45) These experiences helped HCPs to think about how they could adapt their clinical practice to take into account the challenges their patients were facing (M) and applying this learning resulted in a changed approach to interactions (O).

During implementation, adopting a self-management approach tended to encourage HCPs to dedicate more time and effort to exploring each patient's unique context (I), leading to a better understanding of the complexity of people's lives, again triggering a shift in perspective (M) which changed HCPs' expectations (O). A therapist in one study (46) who had been trained to use a new approach to goal setting explained:

"It's not just about adherence and about motivation to be able to do exercise... It's about other things. It's life complexities."(46)

When HCPs started to see their patients as the experts in their own lives, then they valued their patients' experiences more highly (M) and started to learn from their patients (O). (45, 47) Team support could facilitate the reflective process which seemed to increase empathy during the implementation phase (C).(40)

The process of transformation is then described to continue with recognition that the identified discontent is shared by colleagues and the exploration of new options. This step is clearly described in theory four.

**Theory 4: HCPs choose to work in a way that aligns (O) with their professional values or employers' expectations (C), which influences how they see their responsibility and remit (M). When HCPs have autonomy to make changes in the way they work,(C) and are able to critically examine their own role, training in SMS can lead to a broadened view about professional role and new definitions of success (M), leading to HCPs working differently and feeling more satisfied (O).**

Twenty-three articles contributed data to this theory.(7, 8, 29, 30, 32, 34, 37, 41, 43, 44, 48, 50-61) Redefining of professional role was often reported as a key way in which interventions functioned, and could be an outcome related to the mechanisms involved in some of the other theories described (e.g. critical reflection and empathy).

HCPs who were relatively junior and new to their posts were reported to find it more difficult to accept a broadened remit, and to work more flexibly (C).(43) A lack of confidence in addressing issues that did not fall within their traditional professional remits could also act as a barrier to role expansion (C). Physiotherapists in particular felt that their patients expected hands-on treatment (C), and worried about not meeting patients' expectations (M),(32, 58, 59) *which appeared to sometimes lead to the prioritisation of activities seen as more aligned with their 'traditional' role (O).* When HCPs did feel permitted to see their role differently, they also started to define success differently. Thus if they followed the 'process' of providing SMS, they could feel successful, even if the outcomes they would have previously valued were not always achieved (M). This could lead to

increased satisfaction and lessen feelings of frustration (O).(52, 54) During a focus group discussion about an online SMS training course, one doctor reflected:

“I think it’s reminded me of something I might have forgotten. That is that I don’t have to do all of the work. The power to heal lies within the patient, and it’s my job to help them find that.”(50)

If when implementing training and using a more patient-centred approach (I) HCPs experienced discomfort (M) when they felt that their patients made negative choices, this could lead them to take an approach which prioritised what they saw as good medical care over patient autonomy (O)(61) to ensure they met what they felt were their professional responsibilities. Although concerns about negative choices related significantly to how HCPs saw their own role, they were more likely to arise while working with certain patients, such as those felt to lack insight into their condition (C). There were examples of situations where HCPs did start to prioritise patient-centredness over maintaining control and goal achievability (M). This appeared to be facilitated when initial training spent significant time on exploring the concept and purpose of SMS (I) and when continued exploration of what this meant for professional role was facilitated by discussions with colleagues who had also received training (C).(37) This attitude shift was described as requiring ‘emotional work’ (M) on the part of the HCP to feel comfortable with the new approach.(59)

The next stages of transformative learning involve planning a course of action, acquiring new skills and provisionally trying out a new role. We developed one theory (theory five) specific to skill development, and another which described how the setting influenced the development of a new role (theory six).

**Theory 5: Providing specific tools and approaches for SMS (I) to HCPs who previously lacked knowledge and skills in SMS (C) improves understanding of how to operationalise SMS (M) which leads to increased confidence in their ability to provide support (O). However this confidence depends on the complexity of the support required (C) and needs to be sustained.**

Eighteen articles (7, 8, 34, 38, 39, 41, 43, 46, 47, 50, 54, 55, 58, 59, 61-64) contributed data to this theory. Although knowledge, skills and confidence are important determinants of training success there was relatively little in depth exploration of these factors. Specialist knowledge about PNCs was crucial as it allowed HCPs to tailor advice appropriately and to generate solutions for symptom-specific barriers to self-management (M)(e.g. strategies to avoid over-heating while exercising for people with multiple sclerosis).(39) However, HCPs reported a lack of focus on certain symptoms (notably 'invisible' symptoms and psycho-social issues) in their initial training left them under-skilled to address the difficulties experienced by their patients (C).(55, 62, 64) A lack of practice guidelines and outcome measures tailored specifically to PNCs were also seen as barriers. (55, 64)

Often increases in knowledge, skills or confidence seemed to be assumed as an obvious routine consequence of SMS training attendance. The literature suggested that the approaches advocated in training should be simple and relevant to the context in which they would be used (I)(47) as then HCPs appeared more likely to become confident to apply these skills in practice (O). Following SMS training, a participant in one study (50) described:

“It’s given me a lot more confidence in things that I have been thinking about but given me a lot more organized approach and tools”(50)

In the context of a challenging caseload (C), being able to discuss difficulties with colleagues (C) (during team meetings or clinical supervision) means that potential solutions can be generated and confidence maintained (M), resulting in the ongoing provision of SMS (O).(8, 34)

**Theory 6. Organisational context (both at a high level and within local teams) (C) influences whether HCPs perceive SMS as something that they can and should integrate into their current role (M), leading to variable application of SMS (O) following training (I).**

Thirteen articles contributed evidence to this theory.(7, 8, 29, 37, 39, 44, 51, 52, 57, 60, 64-66) Some HCPs felt pressure not to prioritise SMS because of worries about being seen to 'pull their weight' and fulfil organisational expectations (M),(65) while for others it was felt impractical to integrate SMS into their role (M) due to a lack of time, a lack of continuity of care, or fixed targets, all of which were caused by organisational structures (C).(37, 57) HCPs working with PNCs perceived that providing funding for SMS was a low organisational priority because these conditions resulted in a relatively small proportion of acute hospital admissions compared with other conditions which were the focus of SMS efforts (44). In their interview study, Hunt et al (57) described in their results section how:

“A perceived lack of support by the organization for client-centred goal setting practices and lack of power to make changes led to procedures being abandoned over time”(57)

When individual HCPs lacked adequate autonomy to make meaningful changes (C) , their inability to provide SMS could be a source of stress and dissatisfaction (M) leading to demotivation (O).(57)

When organisations were seen to value SMS (through the way in which work was organised, senior clinician buy-in, political drive and the work of local champions) (C),(29, 37) providing SMS was more likely to be seen as an expected part of routine care (M) and HCPs felt encouraged to spend time on SMS activities (O).(52) Training whole teams was suggested as a way to ensure that SMS was seen as a valued activity by all members (I), by creating a shared understanding about how and why to provide SMS (M- O)(37) Organisations needed to support not just the principles, but also the practicalities of SMS provision, by providing adequate resources (C)(66) *in order for SMS to be seen as both valuable and practical (M)*. The use of tools, templates and IT systems, and ensuring the



new approach could fit within existing organisational pathways (I) increased perceived usability (M) and so could help SMS become integrated into routine work (O).(8)

The final stages of transformative learning describe the building of confidence and competence, and the integration of the new perspective. Our final theory demonstrates how HCPs sometimes struggle to see how SMS could fit within their setting.

**Theory 7: HCPs select who they believe are the right patients for SMS (O) based on their own judgement that the pros of supporting self-management outweigh the cons (M). This judgement is influenced by patient characteristics, professional characteristics and the organisational setting (C).**

Twenty of the included articles provided data for this theory.(29, 30, 34, 37, 39, 41-44, 48, 53, 55, 57, 58, 60, 64, 67-70) This theory describes how HCPs attempt to integrate SMS into clinical practice, influenced by the reasoning processes described in the earlier theories. HCPs reasoned that some of their patients were not able to self-manage, meaning that supporting self-management was not worthwhile (M). This was commonly associated with barriers relating to the patient's condition (cognitive impairment, complex condition) (C).(41, 69) These factors could also lead HCPs to judge that their patients could be vulnerable (M),(42) and at risk of feeling under pressure or abandoned if self-management was promoted. This led to HCP discomfort (O), *and the impression was that this discomfort might be a reason why HCPs elect not to provide SMS (O)*. Other patients were seen as unwilling to engage in self-management (M), due to lack of motivation (which could be secondary to their PNC(64)), personality type, cultural barriers or existing expectations of the service 'providing for them' (C).(37, 44) In this situation, HCPs sometimes used the notion of patient autonomy as a way to ease the frustration generated (M), and as a justification for not continuing with efforts to provide SMS (O).(34)

The impact of PNCs on cognition could make it challenging for patients to identify meaningful goals and to plan or perform SM activities (C). HCPs responded to these challenges (M) by providing more time, involving family members, and delivering interventions in the home environment where patients with cognitive impairment may be more at ease(O) (67) (68).

In settings where there was continuity of care (C), it was easier for HCPs to identify when they felt was the 'right time' for SMS (M) and so effective support could be provided when the patient needed it, increasing job satisfaction (O). Smith et al (64) describe in their paper how they found that:

“Participants who were able to monitor, review, observe, and interact with clients over long periods of time seemed to experience greater satisfaction in their role. This, in part, appeared related to optimal timing concerning client readiness to change coinciding with the HCP being ready and able to intervene.”(64)

Optimal timing for SMS was seen as particularly important in the PNC setting, as patients might require increasing SMS as their disease progressed as well as the option to defer to HCPs during crisis periods (C). (44) However organisational set-up did not always facilitate regular re-assessment.(C)(55)

## **INSERT FIGURE 2**

## **Discussion**

We formulated seven refined theories about SMS training and implementation which suggested that this process can trigger a transformative learning experience for HCPs.(26) Although we focussed our review on identifying particular theories relating to provision of SMS to patients with PNCs, the inclusion of data from other related settings has meant that the theories formulated are less context

specific than we initially expected and more transferable to a range of different settings. While some of the theories identify important training activities (e.g. evidence provision, skills building, facilitating reflection, and generating empathy), others describe how the paradigm shift required to embrace a SMS approach can be initiated and maintained (critical reflection, redefining professional role). Our refined theories demonstrate how training interventions influence HCP reasoning directly, but also how reasoning is affected by existing context. Some of our theories highlight that contextual factors can be the main influence on HCP reasoning (e.g. level of organisational support, patient characteristics) and that in certain settings, with multiple contextual barriers, the impact of training may be limited. As expected, patient level barriers to SM were described in the PNC literature, but were also described in the papers from other settings. Our review suggests that patient level barriers appeared likely to be less influential when there was adequate organisational support and when the training intervention had successfully created a clear shared vision of how and why to provide SMS among the clinical team.

Our use of the realist approach of configuring contexts and mechanisms together adds explanatory power to help us understand how these elements interact to produce outcomes of interest. Some of the important contextual influences we identified have been described by other reviewers. For example, in their review Morgan et al (14) identified how working in an organisation with a highly medicalised culture, with colleagues who hold a narrow view of the purpose of SMS, or with patients who were seen as 'non-compliant' made it difficult for HCPs to expand their own view of the purpose of SMS and adopt a more holistic approach. Both Mudge et al(5) and Taylor et al(4) highlighted how HCPs need to be supported, and that change can be either inhibited by practical barriers such as lack of resources, or facilitated through meaningful organisational commitment. Our findings suggest that contextual influences should be described in detail in the reporting of future training interventions in order to understand why HCPs respond to training in the way that they do. The key training mechanisms identified here could be targeted in future interventions, which can be more robustly evaluated if their intended mechanism of action and intended outcomes

are better understood. Some of the mechanism we identified have also been highlighted by reviewers in other settings. Duprez et al reviewed 25 studies focussing on training nurses in SMS and found evidence that training could influence knowledge, skills and confidence, but noted that the evidence for subsequent practice change was more mixed.(10) In their 2014 review (which helped us identify 7 papers for inclusion in this review) Mudge et al (5) described the shift towards integrating SMS provision into the routine care of patients with long-term conditions including diabetes, chronic obstructive pulmonary disease and stroke as being a transformative process. They recognised the key role of facilitating reflection in producing the necessary paradigm shift among HCPs. In addition they emphasised that this process was challenging for HCPs and was likely to be a gradual ongoing process.

### **Strengths and Limitations**

Using a realist approach allowed us to draw on learning from training delivered in different settings, to develop our understanding of how training might operate for HCPs working with people with PNCs. Although this maximised the chances of generating useful and meaningful refined theories, the inclusivity of the review approach represented a significant challenge(16, 71) and a pragmatic approach to keep the review manageable was required. Addressing patient level outcomes was beyond the scope of the review but is clearly of key importance and ideally should be explored in future. Like other reviewers, (22, 23) we were limited by the depth with which the literature describes training and the types of training evaluation undertaken. There was relatively little in depth description about the context specific challenges related to PNCs and there may be particular issues we have failed to identify. We consider our review to have been more successful in theory generation than theory testing in relation to the PNC setting. The quality of evaluations of training in healthcare education has been criticised for a tendency to focus on short-term changes in knowledge or skills, rather than resultant change in practice and patient-level outcomes,(72) while

the reporting of research into healthcare education has been described as poor.(73) There are now recommendations for all complex intervention evaluations to provide enough details about the intervention to allow for replication, and the use of specific reporting guidelines may improve the quality of evidence available in future.(74)

As with any realist synthesis, the interpretive nature of the review process means it is possible that another reviewer might derive a different set of theories from reviewing the same articles.(22) The first author who led the data selection, extraction and synthesis is a clinical (GP) academic and may have been influenced by her own experiences and views about SMS. The key informant interviews and stakeholder advisory group meetings provided opportunities to assess the face validity of the developing theories. The inclusion of original data extracts within the results allows readers to see how the theories have been generated and make their own judgements about their validity.(16, 75)

### **Future research**

In future, longitudinal research which aims to explore how and when transformative learning occurs and can be maintained could help to identify further barriers and facilitators to SMS implementation.(10) Integration of SMS approaches into undergraduate and post-graduate professional training programmes may also be a promising way to facilitate the required paradigm shift to ensure that SMS is viewed as an integral part of care.

### **Conclusion**

Training HCPs to integrate SMS into routine care is not straightforward as it represents a major challenge to traditional clinical practice. To successfully trigger the necessary paradigm shift a process of transformative learning is often required. This may start with training interventions at the individual level but is an evolving process, shaped by interactions with patients and colleagues and bound by workplace constraints. Trainers should be aware of the contextual factors that influence HCPs' reasoning about SMS provision which can act as barriers to both the process of

transformative learning and also to the implementation of SMS in practice. We identified some examples of how perceived patient level barriers to SMS among people with PNCs could be addressed by tailoring SMS provision appropriately, but often condition-related factors such as cognitive impairment were cited as reasons HCPs elected not to prioritise SMS. The level of organisational support available also shapes professionals' views on both the perceived value and practicality of SMS provision. Training should focus on how individual HCPs define and value SMS and how their work context (patient group and organisational constraints) influences this process. Proactively addressing contextual barriers at the training stage may facilitate implementation. These findings could also be applied to other types of training designed to shift attitudes amongst clinicians.

### **Contributorship statement**

FD planned the review approach, performed the searches and led the data extraction and analysis process. She produced the first draft of the manuscript. FW assisted in the development of the abstract screening tool, double-coded a sample of data extracts and discussed the emerging findings with FD. FW, AB, CW and AE advised on the planned review approach, attended regular meetings to discuss the emerging findings and contributed to the synthesis. FW, AB, CW and AE all helped revise the first draft of the manuscript and all authors approved the final version for submission.

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## Box 1 – Process of moving from original data towards refined theories

**Original data extract:** “both physical therapists perceived the possibility of resistance by health services to incorporate the philosophy of the Blue Prescription approach because, in their opinion, current services tend to be aimed at remediation of an incident (eg, provision of rehabilitation after a fall), with the intent being discharge of a patient once the incident has been resolved.”(39)

**“If-then” statement generated:**

“IF a service focusses its efforts on treating acute events and then discharging patients THEN a health promoting self-management approach is unlikely to be accepted”

**Other overlapping “if-then” statements generated from other articles:**

“IF HCPs try to take time to implement SMS in a team where others are not doing so THEN they may feel that others do not value the time they spend on the activity and perceive them as 'not pulling their weight'”

“IF HCPs work in a time pressured environment THEN institutional needs will tend to take priority and guide the therapeutic agenda over the needs/preferences of an individual”

**Consolidated into the refined theory:**

Organisational context (both at a high level and within local teams) (C) influences whether HCPs perceive SMS as something that they can and should integrate into their current role (M) leading to variable application of SMS (O) among trained HCPs (I).

**Figure 1. Sources of included articles**

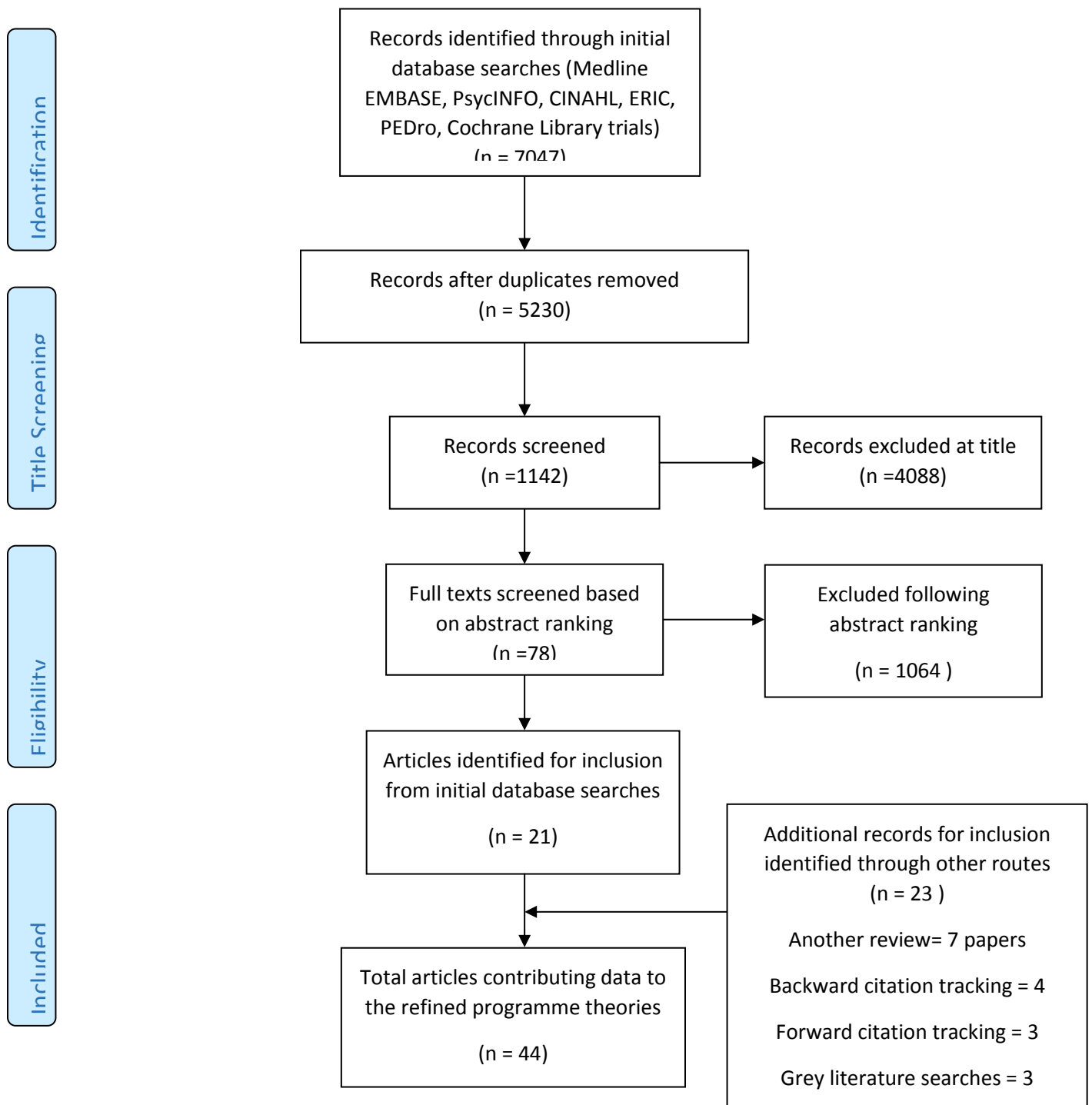


Figure 2

