

The views and perceptions of training in physical healthcare amongst mental health nurses, managers of mental health nurses and trainers: A systematically constructed narrative synthesis

Abstract

People with serious mental illness have higher morbidity and mortality rates compared to the general population. Mental health nurses are in an optimal position to address physical health care needs and inequalities experienced by this group. Research evidence suggests that mental health nurses may lack appropriate skills and confidence. The training needs of mental health nurses in physical health care of patients with serious mental illness and the perceived effectiveness of training that is provided to mental health nurses are explored in this review. A narrative synthesis approach (PROSPERO protocol registration ID=anonymised) involved searching five electronic databases (PsycInfo, Cinahl, Embase, Medline and Web of Science) from 1990-2021. Study quality was assessed, and analysis and synthesis were initially deductively guided by a theoretical framework of training effectiveness prior to inductive data analysis. Eleven studies met the inclusion criteria. For studies examining perceived effectiveness of training, four themes were derived from the theoretical framework (individual trainee characteristics, work environment, learning outcomes, transfer of training to job) and further theme (service user factor) generated inductively. For studies examining training needs, three themes were derived inductively (knowledge and skills requirements, modality of training, service and healthcare factors). The study highlights the need for ongoing learning to improve practice. It also provides another perspective in terms of understanding the influence of service user factors (motivation and mental state) in designing and implementing of future training in mental health settings.

Keywords: Nurse training; Physical health; Serious mental illness; Training effectiveness; Training needs

Introduction

People with serious mental illness such as schizophrenia, bipolar affective disorders and severe depression have a reduced life expectancy compared to the general population of up to 10-25 years (Fiorillo & Sartorius 2021; Protani et al. 2022; Grassi & Riba 2021; Fiorillo et al. 2023). The reduced life expectancy is a result of co-occurrence of higher than expected rates of physical health co-morbidities including cardiovascular disease, type two diabetes, respiratory diseases, infectious diseases and some forms of cancer (Ho et al. 2022; Fiorillo & Sartorius 2021; Protani et al. 2022). There are multiple reasons for higher prevalence of physical health co-morbidities and excess mortality. Lifestyle factors including heavy smoking habits, harmful use of alcohol and substances, sedentary lifestyle, and risky sexual behaviours are more prevalent in this population group (Ho et al. 2022). Differences in accessing healthcare and treatment is another factor influencing the relationship between serious mental illness and higher mortality rates (Ho et al. 2022; Protani et al. 2022). People with mental health conditions are less likely to be assessed or treated for chronic physical health conditions in primary care or receive specialist procedures in secondary care than the general population (Protani et al. 2022). Inequitable access to healthcare could be as a result of socioeconomic disadvantages, stigma, lack of education, alienation, social isolation, reduced help-seeking behaviour (Grassi & Riba 2021). Poor coordination and collaboration amongst clinicians, division of mental and physical health services and lack of clarity about whose responsibility it is to assess healthcare needs negatively impact on access to physical health care (Fiorillo & Sartorius 2021; Ho et al. 2022; Fiorillo et al. 2023). The negative attitudes of healthcare professionals and perceived clinical skills of health care staff may influence the physical health care experiences of people with serious mental illness (Ho et al. 2022; Fiorillo & Sartorius 2021). Another contributing factor is the effects of psychotropic medication which can induce metabolic and cardiovascular side effects (Fiorillo & Sartorius

2021). Selective serotone reuptake inhibitors used as first line treatment for depression significantly increase the risk of developing type two diabetes and are also associated with weight gain and metabolic syndrome (Wen et al. 2020). Clozapine medication for treatment of drug-resistant schizophrenia may induce cardiomyopathy and myocarditis and some anti-psychotic medications have been associated with sudden cardiac death (Howell et al. 2019).

Mental health professionals including nurses are in an optimal position to reduce physical health inequalities. Mental health nurses can provide holistic assessment of psychological, physical and psychosocial needs and also clinical management of symptoms (Hurley et al. 2022;Happell et al.2019). They can assist in supporting lifestyle behaviour change, promote referrals and access to physical health care checks, screening and better access to healthcare overall (Hurley et al. 2022;Happell et al. 2019). Healthcare for people with serious mental illness is often separated between mental and physical health even though the two are inextricably linked and mental health nurses should provide a more integrated and patient centred care. Pre-registration nurse training tends to focus either on physical or mental health, limiting the nurses' ability to provide integrated and holistic care. This has wide implications for the health outcomes of patients with mental and physical health co-morbidities (Tyler et al. 2019). Mental health nurses may lack appropriate skills, knowledge and confidence to adequately address physical health needs of patients. Dorey et al. (2023) reviewed enablers and barriers in diabetic care for adults with serious mental illness. They found that mental health nurses reported lack of practical skills as a barrier and in particular management of insulin, weight management and foot care. Limited knowledge of clinical guidelines for type two diabetes including management of hypo and hyperglycaemia were also perceived as barriers. Tzeng et al. (2023) underscored the importance of provision of physical health care training for in-patient mental health nurses and cultivating a positive culture and environment that will promote confidence in the provision of physical health care.

It is important that the perceptions of key stakeholders such as mental health nurses, managers and trainers are explored to enable a greater understanding of why and how physical health care training for mental health nurses may or not work. Existing related reviews on this topic have primarily focused on quantitative evidence exploring stakeholders' views and have broader inclusion criteria of types of studies including service evaluations, quasi experimental designs, surveys and randomised controlled trials (Dickens et al. 2019a; Tyler et al. 2019). It is important that qualitative evidence is incorporated into a synthesis of existing literature to ensure that these important perceptions are understood and accounted for. A qualitative synthesis may help explore training needs and explain why and how training might or might not work.

The aims of the review

To understand the views and perceptions of key stakeholders (mental health nurses, managers of mental health nurses and trainers) in relation to physical health care training needs of mental health nurses and the effectiveness of training.

Method

Design

Review question. What are the views and perceptions of key stakeholders (mental health nurses, their managers and trainers) of the training needs of mental health nurses to improve physical health care in patients with serious mental illness and perceived effectiveness of training?

Review design. The review deploys a qualitative narrative synthesis approach (Popay et al. 2006). Narrative synthesis seeks to generate a text-based understanding of a phenomenon to provide a thick description of the predominant issues identified from a body of literature (Popay et al. 2006). Narrative synthesis is an effective and structured approach of extracting and allows synthesis of findings of qualitative studies that are heterogenous (Boland et al.

2017). The goal of the review is not to generate or build theories for reconceptualization of the findings of included studies but to gather and synthesise evidence in a systemic way in relation to a well-defined review question and aims. The narrative synthesis approach in this review is congruent with the review goals and question and follows a four stage approach; developing a theory, developing a preliminary synthesis, exploring relationships within and between studies and assessing robustness of the synthesis (Popay et al. 2006). A meta-analysis was not congruent with the research question and goals of the research. The systematic review protocol was prospectively registered (PROSPERO protocol registration ID= anonymised) and the ENTREQ guidelines guided reporting of this synthesis (Tong et al. 2012).

Theoretical framework for the review and application to synthesis of reviewed studies. Noe and Colquitt (2002) theoretical framework of training effectiveness was the theory chosen to guide coding, interpretation, synthesis of study results and findings, and assessing applicability of findings. This theoretical framework was selected because it integrates both training evaluation and training effectiveness. The objectives of training evaluation are to determine whether training objectives have been achieved (learning issues) and whether these have resulted in improved performance (transfer issues) in the job (Sanjeevkumar et al. 2012). Kraiger et al. (2004) made a distinction between training evaluation and training effectiveness. Training evaluation refers to the study of whether training works (training results in desired changes in trainee's knowledge and skills) and training effectiveness is why it works.

Noe and Colquitt (2002) training effectiveness framework describe the features of training environment, trainee characteristics and work environment that influences training motivation, actual learning, and transfer of training. For training to be considered effective, trainees must be ready to learn, be motivated to learn, must learn the contents of the training

programme, and must transfer their training when they return to their job (Noe & Colquitt 2002). After completion of training, it is expected that trainees would demonstrate increases in relevant cognitive, affective, and motivational outcomes. Individual characteristics include trainability, personality, age, motivational and job or career attitudes (Noe & Colquitt 2002). Motivation to learn can also be influenced by organizational factors including provision of opportunities for career planning, self-efficacy of trainees, and job involvement (Noe & Colquitt 2002). Work environment characteristics include climate of the organisation, opportunity to perform, organisational justice and individual v team context (Noe & Colquitt 2002). The trainees' perceptions of work environment characteristics influence the use of what they have learned.

Search strategy. Using the SPIDER framework (Cooke et al. (2012), broad search terms were developed and applied to selected electronic databases. Table 1 shows the terms used in search strategy. A [institution anonymised] librarian assisted with the development of search strategy (**Supplementary file 1**: Full string of search terms and electronic database search results). Key search terms and Boolean operators were applied to selected databases to retrieve relevant literature. The following electronic databases were selected primarily due to their focus on healthcare literature: PsycInfo, Cinahl, Embase, Medline and Web of Science. Limits on each database include publications in English Language from 1990-2021 and limited to humans.

Bibliographies and reference lists of eligible studies were searched to identify any relevant studies that might have been missed. Citation search was also carried out on the selected electronic databases to locate all articles that cited included studies. Handsearching of recent issues of key mental health care journals were undertaken to identify studies that may have been incorrectly indexed or not indexed on electronic databases. Handsearching of reference lists of included studies were also carried out.

Study eligibility. The inclusion and exclusion criteria are listed in Table 2.

Screening and selection of studies. Due to the use of multiple databases, duplicates were removed by reviewer Author 1 (**Supplementary file 1**- Full string of search terms and electronic database search results). One reviewer Author 1 screened the titles of all records in Endnote following de-duplication of records. The full texts of potentially relevant studies were read carefully, thoroughly by reviewer Author 1 and a decision made as to relevance using the criteria established a priori. Ten percent of the studies were screened independently by reviewers Author 2 and Author 3.

Data extraction and management. Data extraction was completed using a data extraction form adapted from Booth et al. (2016). An Excel spreadsheet was used to record pre-agreed information with reviewers Author 2 and Author 3 from each study. The data from the studies were mapped out on a word document and key elements were exported and populated on an excel spreadsheet. The extracted data formed the basis of preliminary synthesis of study findings.

Assessment of quality of finally included studies. In narrative review, assessing quality of studies is important to inform the quality of the evidence base in the synthesis stage and also exploring the robustness of the synthesis (Halliday et al. 2021). Scoring for methodological rigor was undertaken using the Hawker et al. (2002) critical appraisal tool, but papers were not excluded based on quality alone. As the review also considers mixed methods studies that report qualitative findings, the tool developed by Hawker et al. (2002) was considered appropriate. Quality appraisal of studies was undertaken by Author 1, with ten percent of studies appraised by Author 2 and third reviewer Author 3 was available for consultation or arbitration (if appropriate) where disagreements occurred. According to the tool, studies were categorised high (30-36), medium (24-29), and low quality (9-24). All the studies were rated high quality as they scored over 30. All the selected studies were included in the synthesis as

they were rated high quality (methodological rigour) and importantly, provided relevance to the research question. The quality scoring tool, scoring guide and the results of the appraisal are contained in Supplementary **file 2**

Synthesis method and utility of theoretical framework in the review. The results of the primary studies were synthesised in this review and includes excerpts of the raw data and interpretations of the authors' themes and narratives. Relevant sections of the findings of the papers were scrutinised line by line by reviewer Author 1 and codes noted. For studies examining perceived training effectiveness, a priori codes from Noe and Colquitt (2002) theoretical framework were used (deductively). There were some a priori concepts in the framework that were not supported by data from the studies. A consensus was reached amongst the reviewers (Author 1, Author 2 and Author 3) as to which a priori codes were not supported by the data and these concepts were either not included as codes or combined. There was also new data from the studies that did not translate into pre-existing concepts from the framework. These new codes were agreed amongst the reviewers and added to the list of codes as they provided new insights. For studies exploring training needs, the codes were derived inductively from the data. The codes were organised and refined into broader themes and this process was carried out by Author 1 and independently checked by reviewers Author 2 and Author 3. This process is shown in tables in **Supplementary file 3**.

Results

The final set of papers (n=11) that met the inclusion criteria were considered for coding and synthesis. This is illustrated in the PRISMA flow diagram (Figure 1) as suggested by Page et al. (2021).

Preliminary findings (characteristics of included studies) and synthesis

Eleven studies were included in the synthesis (Table 3). Six of the studies were qualitative studies (Foster et al. 2013; Baker et al. 2014; Mwebe 2017; Çelik Ince et al. 2018; Happell et al.

2013a;Happell et al. 2013b) and five were mixed methods studies with a qualitative component (Haddad et al. 2016;Terry &Cutter 2013;Sung et al. 2016;Lavelle et al. 2017;Watkins et al. 2020).

Of the 11 studies, four were from the UK (Haddad et al. 2016;Terry &Cutter 2013;Mwebe 2017;Lavelle et al. 2017), five from Australia (Foster et al. 2013;Baker et al. 2014;Watkins et al. 2020;Happell et al. 2013a;Happell et al. 2013b), one from Taiwan (Sung et al. 2016) and one from Turkey (Çelik Ince et al. 2018). All the studies included participants who are mental health nurses. Two studies also included trainers (academic staff and clinician trainers) with experience in supporting mental health workers to use a physical health care programme (Baker et al. 2014;Foster et al. 2013). One study also included mental health managers as participants (Watkins et al. 2020).

The settings where the studies were carried out include adult psychiatry clinics, inpatient acute and forensic mental health units, community mental health teams, rural health settings and university /academic settings. For the studies that reported gender, the percentage of female participants overall exceeded the percentage of male participants. Two qualitative studies reported only female participants (Çelik Ince et al. 2018;Baker et al. 2014). A mixed method study (Sung et al. 2016) had all female participants for the qualitative phase of the study. Ethnicity was not reported in any of the included studies.

For the studies that utilised educational interventions (Sung et al. 2016;Foster et al. 2013;Terry &Cutter 2013;Haddad et al. 2016;Baker et al. 2014;Watkins et al. 2020;Lavelle et al. 2017), there were variabilities in the mode, type, intensity, and duration of the interventions. One study (Lavelle et al. 2017) provided a simulation based training and others provided a more comprehensive mix of sessions. Four were delivered via lectures and combined with interactive approaches including role play, case scenarios, reflection, videos, and group discussions (Terry &Cutter 2013;Foster et al. 2013;Sung et al. 2016;Watkins et al.

2020). One training programme was delivered as a workshop (Watkins et al. 2020), two as a continuing professional development course in university (Foster et al. 2013; Terry & Cutter 2013), and three educational sessions in clinical settings or hospitals (Haddad et al. 2016; Baker et al. 2014; Sung et al. 2016). The duration of the training was also variable including few hours, away day sessions and continuing professional development sessions of up to 4 months duration. The sessions varied in contents and focused on a variety of physical health care topics including physical health assessments, sexual health care training, diabetic, cardiovascular, metabolic training, epileptic and emergency resuscitations.

Review findings and synthesis (exploring relationships in the data for studies utilising educational interventions)

The themes and codes derived from the pre-existing framework and service user factors (theme 5) based on data from the studies are discussed below.

Individual characteristics

Personality. The experience, background, and abilities that trainees bring into the training was seen as crucial in influencing motivation, actual learning, and transfer of learning (Watkins et al. 2020; Foster et al. 2013; Lavelle et al. 2017). A common perception was that working in mental health for so long has impacted motivation and skills for physical health care delivery and training (Foster et al. 2013; Watkins et al. 2020; Terry & Cutter 2013). However, training enabled practitioners to reflect upon and integrate new knowledge into practice (Foster et al. 2013; Lavelle et al. 2017; Watkins et al. 2020):

“As time goes on, you become specialised and then you kind of stay there for a little bit, you plateau, you don’t branch out... You need to branch out again and become more generalised” (Foster et al. 2013, p.158).

Motivational attitudes and orientation. Trainees’ motivational attitudes and orientations were of prime importance in training effectiveness. They were more likely to participate and

learn if they perceive training outcomes as relevant to their roles and aligned with self-identified needs (Baker et al. 2014;Lavelle et al. 2017;Watkins et al. 2020). Feelings of increased personal responsibility were seen as positively influencing post training motivational outcomes (Lavelle et al. 2017;Watkins et al. 2020). One study described how the desire to be well-skilled in managing medical emergencies was perceived by trainees as being related to them seeking out training courses and update their skills (Lavelle et al. 2017).

“This training has prompted me to keep up with guidelines and procedures; seek out other courses to update my skills” (Lavelle et al. 2017, p.18).

Work environment

Climate. Work climate refers to perceptions of characteristics of work environment that influence learning and transfer of learning (Noe &Colquitt 2002). The work climate featured in a majority of papers as a prime influencing factor in the use of what has been learnt in training (Lavelle et al. 2017;Watkins et al. 2020;Baker et al. 2014;Foster et al. 2013;Haddad et al. 2016;Terry &Cutter 2013). Excessive workload, time constraints and inadequate resources were perceived as organisational barriers affecting the use of what has been learnt during training (Haddad et al. 2016;Baker et al. 2014;Lavelle et al. 2017;Terry &Cutter 2013;Foster et al. 2013;Watkins et al. 2020).

“I can’t even get a set of scales and tools to document data. We don’t have a form to record metabolic monitoring” (Watkins et al. 2020, p.928)

Organisational culture was seen as a crucial influencing factor and organisational change was perceived as instrumental if training could be successfully and fully implemented (Baker et al. 2014;Haddad et al. 2016;Lavelle et al. 2017). Additional support and leadership from management were cited as vital for transferring knowledge and skills from training (Lavelle et al. 2017;Haddad et al. 2016;Foster et al. 2013). However, challenges or barriers were not

entirely insurmountable, and training could still be integrated where job structures prevented standard use of training (Baker et al. 2014;Lavelle et al. 2017;Watkins et al. 2020).

“There’s been few people that we haven’t been able to use the Flinders program with, and even then, we’ve still been able to use components”

(Baker et al. 2014, p.562)

Individual v team context. A recurrent theme in the reviewed studies is a sense of shifting the focus away from individual performance to overall team-based work (Baker et al. 2014;Lavelle et al. 2017;Watkins et al. 2020). Individuals may correctly apply learned skills yet may be unsuccessful as team contribution is required to succeed. Greater awareness of colleagues’ capabilities and professional roles and improved team working were attributed to the success of training (Watkins et al. 2020;Baker et al. 2014;Lavelle et al. 2017).

“Since completing the training, I have become more mindful of the complexity of team working in healthcare, better understanding of working with staff from different backgrounds” (Lavelle et al. 2017, p.16).

However, even though a whole team approach was ideal, this was seen as not easily achievable and lack of motivation of team members was cited as a barrier (Baker et al., 2014;Watkins et al., 2020;Lavelle et al., 2017).

“You want to have a team that can actually support this program, as opposed to one person that’s holding and propping it up” (Baker et al. 2014, p.562).

Direct learning outcomes

Cognitive outcomes. Cognitive outcomes refer to relevant improvements in trainee participants’ knowledge, awareness and ability following training (Noe &Colquitt 2002). Most studies described perceived increases in cognitive outcomes with regards to benefits of receiving training (Watkins et al. 2020;Baker et al. 2014;Foster et al. 2013;Terry &Cutter 2013;Haddad et al. 2016;Lavelle et al. 2017). Studies reported improved understanding of

good communication and team working skills in high pressured and challenging situations (Lavelle et al. 2017;Foster et al. 2013), broader understanding and knowledge of subject matter discussed in training (Baker et al. 2014;Foster et al. 2013;Haddad et al. 2016;Terry &Cutter 2013;Watkins et al. 2020), and ability to reconstruct existing knowledge to incorporate revised knowledge (Foster et al. 2013;Watkins et al. 2020).

“I am more aware of my own communication with others and the important role this plays in teams; I understand that communication can be a barrier to good teamwork” (Lavelle et al. 2017, p.17).

However, a consistent view is that despite improvement in cognitive outcomes, organisational constraints posed challenges in applying new knowledge (Watkins et al. 2020;Baker et al. 2014;Foster et al. 2013;Lavelle et al. 2017;Haddad et al. 2016;Terry &Cutter 2013;Sung et al. 2016).

Affective and motivational outcomes. Affective and motivational outcomes refer to perceived improvements in confidence and motivations as a result of training (Noe &Colquitt 2002). Studies reported perceived increase in confidence to respond to physical health needs of service users in challenging situations and engaging with colleagues more authoritatively as a result of revised knowledge (Foster et al. 2013;Lavelle et al. 2017;Watkins et al. 2020;Baker et al. 2014). Improved confidence to execute specific skills learned during training and confidence in teamworking was cited in the reviewed studies (Lavelle et al. 2017;Baker et al. 2014;Watkins et al. 2020)

“the training has boosted my confidence in managing a pressurised medical emergency on the triage ward; I feel more confident working as a team and following instructions” (Lavelle et al. 2017, p.15).

Transfer of training to job

Learned capabilities and job performance. Transfer of training refers to the application of learned capabilities on the job and this can be generalisation and/or maintenance (Noe & Colquitt 2002). A recurrent theme in the reviewed studies is the perception that revised knowledge from training enhances clinical practice and physical health care assessment and delivery (Watkins et al. 2020; Foster et al. 2013; Lavelle et al. 2017; Baker et al. 2014; Haddad et al. 2016). Individuals across studies described incorporating their revised knowledge on physical health care into everyday practice influencing their clinical judgements (Baker et al. 2014; Foster et al. 2013; Watkins et al. 2020; Lavelle et al. 2017), using revised knowledge to influence other members of the multi-disciplinary team (Baker et al. 2014; Lavelle et al. 2017), and improved practice in a variety of ways including improved equipment checking procedures, improved labelling of green bags and refinement to ward policies (Lavelle et al. 2017)

“I personally and professionally have tried really hard to have a lot of transfer out of the course and into the clinic.” (Foster et al. 2013, p.160)

Studies revealed concerns about the challenges of applying integrated knowledge into practice settings (Foster et al. 2013; Lavelle et al. 2017; Haddad et al. 2016; Baker et al. 2014). Studies highlighted barriers (previously discussed) to the implementation of integrated knowledge into practice. One study reported trainers’ views about the need for a philosophy that is aligned with holistic care approach and trainers’ focus on their speciality area as potential barrier (Foster et al. 2013)

Service user factors

Low motivation. Low motivation of service users was identified as a barrier to integrating revised or new knowledge into practice (Foster et al. 2013; Haddad et al. 2016; Watkins et al. 2020). This was related to service users being unwilling or disinterested to talk about their metabolic health (Watkins et al. 2020), ambivalence towards lifestyle change (Watkins et al.

2020;Foster et al. 2013;Haddad et al. 2016), service users finding physical health assessment intrusive, nagging, and bothersome (Foster et al. 2013;Haddad et al. 2016) and difficulties encouraging service users to modify lifestyle (Haddad et al. 2016;Watkins et al. 2020;Foster et al. 2013). This was related to considerable time required to complete assessment or paperwork, cultural differences in service users, language barriers and environmental constraints including lack of suitable space.

“We work so hard to have a welcoming, friendly, safe, comfortable environment, and I think that sometimes asking for a physical health assessment totally opposes that” (Foster et al. 2013, p.159).

Service user mental state and capacity. Challenges in implementing newly acquired knowledge relating to service user capacity and mental state were noted in the reviewed studies (Foster et al. 2013;Watkins et al. 2020). This was related to service users not always reliably recalling their health history which was sometimes age dependent (Foster et al. 2013), acuity and severity of service users mental state (Watkins et al. 2020).

“some people were too acutely unwell or didn’t have insight into their poor physical health” (Watkins et al. 2020, p.928).

Exploring relationships in the data for studies exploring views on training needs

A summary of themes and codes of training needs (all derived inductively) are discussed below.

Knowledge and skills requirements. A consistent theme in the reviewed studies is a sense amongst participants that their knowledge and skills in physical health care were insufficient and there is a need to overcome this gap (Çelik Ince et al. 2018;Happell et al. 2013b;Mwebe 2017;Happell et al. 2013a). Nurses with a generalist background perceived that they were better equipped with the knowledge and skills to provide physical healthcare whereas those who had specialised in mental health nursing from the outset felt that they needed ongoing

learning to develop competencies in physical healthcare (Happell et al. 2013a;Mwebe 2017;Happell et al. 2013b;Çelik Ince et al. 2018).However, irrespective of the nurses' background, the need for ongoing learning to cement practice was frequently cited (Mwebe 2017;Çelik Ince et al. 2018;Happell et al. 2013b;Happell et al. 2013a).

“I attended an update three years ago, I think; I am not sure whether there have been any further update in the last year” (Mwebe 2017, p.3073).

Given variability in knowledge and skills across mental health nursing group, clinicians identifying specific domains or skills and knowledge they require training on was seen as important (Mwebe 2017;Happell et al. 2013b;Happell et al. 2013a). Improving knowledge of conditions like diabetes and cardiovascular disease were cited as important (Happell et al. 2013b;Çelik Ince et al. 2018;Happell et al. 2013a) and having basic skills in physical health checks including use of manual blood pressure machines, measurements and screening was underscored (Happell et al. 2013b;Mwebe 2017;Happell et al. 2013a;Çelik Ince et al. 2018).One study emphasised the need for training that focuses on knowledge that enhances the provision of education to patients, addresses sexual health concerns caused by medical conditions and improving communication skills to address sexual health problems of patients (Sung et al. 2016).

“I hope the training program will focus on skills for dealing with sexual concerns, assessment and communication” (Sung et al. 2016, p.2291)

Modality of training. The need for flexibility in the development and delivery of physical health care training was seen as crucial to success in training provision (Mwebe 2017;Happell et al. 2013b;Happell et al. 2013a;Çelik Ince et al. 2018). Structured training was seen as desirable for certain topics involving the utilisation of skills whereas less structured approach was a positive delivery option for topics that are not directly linked to the application of skills (Happell et al. 2013b;Happell et al. 2013a). Face to face and hands on training was generally

favoured and suggested that on-line delivery should be considered as an addition but not a replacement to face to face training (Happell et al. 2013a).

“I think it needs some structure especially if....the training is going to be aimed at nurses providing a physical health assessment...you need a set pattern...you do this, you do that, something that’s a bit formulated.”

(Happell et al. 2013a, p.213).

Irrespective of the mode of delivery, the nature of the care environment was seen as a serious challenge in the delivery and accessibility of training program (Mwebe 2017;Happell et al. 2013b;Happell et al. 2013a) and this may be related to difficulty releasing staff from direct care to attend training, time constraints and uncertain events (Happell et al. 2013a;Happell et al. 2013b).

“It’s not that they don’t want to do it, they honestly don’t have the time. We just don’t.” (Happell et al. 2013b, p.2292)

Service and healthcare factors. The importance of organisational support and healthcare systems was evident in the reviewed studies (Çelik Ince et al. 2018;Mwebe 2017;Happell et al. 2013a). Mental health nurses revealed concerns about the healthcare system in their institutions (Happell et al. 2013b;Happell et al. 2013a;Çelik Ince et al. 2018;Mwebe 2017) and was mainly related to excessive workload, staff shortages and physical health not being prioritised (Çelik Ince et al. 2018;Mwebe 2017). Embedding physical health screening and monitoring practices into the culture via training was seen as vital but challenging due to economic constraints and pressures outside the local services that may shape the priority of healthcare service (Çelik Ince et al. 2018;Happell et al. 2013b).

“So priority change, funding models change, and I think that’s just what we deal with. So it’s about local services, but it’s higher than that.....so you can

train all you like, but unless there's real impetus and drive from above, then it just goes" (Happell et al., 2013b, p.2291).

Discussion

Discussion of main findings and results

The findings of the review have shown that training in physical health care may result in perceived improvement in cognitive and affective outcomes, such as knowledge, awareness, and confidence. Training also results in staff incorporating their revised knowledge on physical health care into daily practice influencing their clinical judgements, influencing other members of the multidisciplinary team and directly improving clinical practice in many ways. Despite perceived increases in knowledge and confidence, acquisition of facts alone does not guarantee transfer into practice.

The synthesis highlights an area of concern in terms of organisational barriers, culture and resource constraints. The results show that challenges in the provision of physical health care by mental health nurses are related to perceived barriers in physical health monitoring including resource allocation, local culture, staff attitude and perceived lack of education and training to engage in physical health care practice. This finding is consistent with other literature on training evaluation (Hennessy & Cocoman 2018; Dickens et al. 2019a; Dickens et al. 2019b; Tyler et al. 2019) which found that education and training in physical health care for mental health nurses does not mean direct translation into practice and highlighted organisational culture, lack of motivation and understanding from colleagues as potential barriers.

The experiences of key stakeholders in this review are congruent with results of other studies (Chou & Tseng 2020; Mulhearn et al. 2021; Derblom et al. 2022; McIntosh 2021) amongst general nurses in emergency departments caring for patients with mental illness

which showed that participants felt that time constraint in their departments was not conducive to cater for emotional needs of patients and undermines therapeutic rapport with patients. Environmental influences and lack of knowledge and training amongst emergency department general nurses about mental health conditions, assessments and recovery model often resulted in suboptimal care (Chou & Tseng 2020; McIntosh 2021). The care environments in emergency departments were often fast paced and characteristically hectic and high stimulus (Chou & Tseng 2020; Derblom et al. 2022; McIntosh 2021), there was lack of provision for quiet space and room for assessment and caring (Derblom et al. 2022; Ryan et al. 2021), and general nurses lacked knowledge about recovery model and have negative perceptions and stereotype views about mental health patients (Chou & Tseng 2020; McIntosh 2021).

The results of this synthesis provide another perspective in terms of understanding the influence of service user factors in training effectiveness in mental health settings. Some service users found physical health assessment bothersome and intrusive, thus highlighting the importance of considering service user factors (motivation and acuity of mental state) in designing and implementing of future training and facilitating an enabling environment for delivery of physical health assessment, monitoring and delivery. The Noe and Colquitt (2002) training effectiveness theoretical framework could be further developed or extended for mental health settings to include such service user factors (motivation and acuity of mental state) as it lacked the depth to explain all the data in the reviewed studies.

Mental health nurse pre-registration training has traditionally lacked a strong physical health component in many jurisdictions. There is perception amongst mental health nurses that they have inadequate theoretical knowledge or clinical experience in the care and treatment of physical health issues. There is a need for further education and support (Opusunju et al. 2022). There have been moves in some jurisdictions to address standards in

pre-registration training to ensure nurses are equipped with sufficient skills to enable them to work across a variety of settings (Nursing and Midwifery Council 2018;Health Education England 2015). Other countries like Australia have long adopted a more generic approach towards pre-registration nurse education that is designed to prepare nurses to work across a wide range of health care settings (Connell et al. 2022;Hurley &Lakeman 2021). However, critics of the move towards a more generic model of nurse education argue that practice will be favoured towards adult nursing at the expense of other fields and resulting in lower levels of knowledge and skills in mental health nursing (Connell et al. 2022)

Irrespective of the current system of educational preparation, there is a perception amongst mental health nurses that they do not have the competencies and skills to adequately and competently address the physical health care of people with serious mental illness (Opusunju et al. 2022). This is comparable with the synthesis findings that despite current mental health nurse pre-registration training, the training fails to adequately prepare nurses to competently perform their roles in delivering physical health care and there is a need for ongoing learning or continuing professional education in physical health care to improve practice. Health Education England (2022) strongly recommended continuing professional development so that nurses have time and access to high quality evidence-based training and develop core skills to practice in variety of settings and in direct response to the comprehensive needs including physical health of patients.

Robustness of the synthesis (strengths and limitations)

One reviewer Author 1 conducted the search, and a comprehensive search strategy and approach was undertaken to minimise the possibility of relevant studies being missed. Three reviewers were involved in the screening process for selection of relevant studies against pre-determined criteria, quality appraisal and analysis enhancing credibility of the findings. The inclusion of studies using mainly qualitative methods and others using mixed method with

qualitative component may have implications for synthesis findings. Studies were included that used interpretative descriptive analysis which were different to studies that used focus groups and incident reporting. However, it is important to note that there were commonalities in findings despite sometimes different approaches or methods. used. Quality assessment of studies was also undertaken using a validated tool and all studies rated highly.

It is not known what influence gender may have had on synthesis findings due to lack of details on possible influence in the studies as female participants were over-represented in the included studies. It was also difficult to assess what influence other key demographic characteristics such as ethnicity had on synthesis findings due to lack of level of details in the studies. None of the studies reported ethnicity of participants. Most of the studies were undertaken overseas, and it was not possible to assess the possible impact difference in culture and settings had on study findings.

This synthesis is the only known qualitative synthesis of primary studies and this is important in understanding not only if training works but why and how it works. It provides a unique perspective as it uses a theoretical framework to explore perceived effectiveness of training. Utilising theory in a review process is useful in developing insight and understanding of reviewer and reader as to the applicability of a review in practice (Dunleavy et al. 2018).

Conclusion

Training in physical health care for mental health nurses is important to upskill mental health nurses and to reduce physical health inequalities experienced by patients with serious mental illness. For training to be successful, it is important to understand how and why training works. The findings of this review help to understand the training needs of mental health nurses in a variety of settings and the importance of individual characteristics, training environment and work environment in determining the success of training.

Implications for research

Gaps were identified in the literature. Most of the qualitative and mixed methods studies utilised descriptive designs lacking depth and warranting further exploration. Most of the studies focused solely on mental health nurses' perspectives and did not consider views of other key stakeholders. More studies are required with designs that provide in-depth exploration including phenomenological approaches and include trainers and managers of mental health nurses as participants.

Future studies to explore any possible influence of sociodemographic characteristics including gender and ethnicity on experiences of providing physical health care. Future directions for learning and research to also explore experiential learning component through the lived experiences of providing and supporting physical health care in mental health settings. Incorporating experiential learning with formal training through prolonged one to one experiences and meaningful relationships results in much more positive outcomes including improved attitudes and building of better relationships with service users (Goldman & Trommer 2019)

Relevance for clinical practice

Policy makers and managers need to prioritise the physical health needs of patients and upskill mental health nurses as they play vital role in provision of physical health care. There should be more focus on individual and organisational factors that influence training effectiveness as opposed to the design features including content and delivery of training being prioritised. To foster therapeutic alliance with service users, it is important that mental health nurses practice with awareness of cultural sensitivities, time management and given the nature of the care environment identify calm and suitable places for physical health assessments.

References

- Baker, W., Harris, M. & Battersby, M. (2014). Health workers' views of a program to facilitate physical health care in mental health settings: Implications for implementation and training. *Australasian Psychiatry*, 22, 560–563.
- Boland, A., Cherry, G. & Dickson, R. (2017). *Doing a systematic review: A student's guide* (2nd ed.). Sage.
- Booth, A., Sutton, A. & Papaioannou, D. (2016). *Systematic approaches to a successful literature review*. Sage.
- Çelik Ince, S., Partlak Günüşen, N. & Serçe, Ö. (2018). The opinions of Turkish mental health nurses on physical health care for individuals with mental illness: A qualitative study. *Journal of Psychiatric and Mental Health Nursing*, 25, 245–257.
- Chou, H.-J. & Tseng, K.-Y. (2020). The experience of emergency nurses caring for patients with mental illness: A qualitative study. *International Journal of Environmental Research and Public Health*, 17, 8540.
- Connell, C., Jones, E., Haslam, M., Firestone, J., Pope, G. & Thompson, C. (2022). Mental health nursing identity: A critical analysis of the UK's Nursing and Midwifery Council's pre-registration syllabus change and subsequent move towards genericism. *Mental Health Review Journal*, 27, 472–483.
- Cooke, A., Smith, D. & Booth, A. (2012). Beyond PICO: The SPIDER tool for qualitative evidence synthesis. *Qualitative health research*, 22, 1435–1443.
- Derblom, K., Molin, J., Gabrielsson, S. & Lindgren, B.-M. (2022). Nursing staff's experiences of caring for people with mental ill-health in general emergency

- departments: A qualitative descriptive study. *Issues in Mental Health Nursing*, 43, 1145–1154.
- Dickens, G. L., Ion, R., Waters, C., Atlantis, E. & Everett, B. (2019a). Mental health nurses' attitudes, experience, and knowledge regarding routine physical healthcare: Systematic, integrative review of studies involving 7,549 nurses working in mental health settings. *BMC Nursing*, 18, 16.
- Dickens, G. L., Ramjan, L., Endrawes, G., Barlow, E. M. & Everett, B. (2019b). Effectiveness and experiences of mental health nurses in cases of medical emergency and severe physiological deterioration: A systematic review. *International Journal of Nursing Studies*, 95, 73–86.
- Dorey, T., Haddad, M., McBain, H., Mulligan, K. & Zarska, A. (2023). A systematic review of barriers and enablers that health professionals experience to the delivery of type 2 diabetes care for adults with severe mental illness. *Diabetic Medicine*, 40, e15098.
- Dunleavy, L., Walshe, C., Oriani, A. & Preston, N. (2018). Using the 'Social Marketing Mix Framework' to explore recruitment barriers and facilitators in palliative care randomised controlled trials? A narrative synthesis review. *Palliative Medicine*, 32, 990–1009.
- Fiorillo, A., de Girolamo, G., Simunovic, I. F., et al. (2023). The relationship between physical and mental health: An update from the WPA Working Group on Managing Comorbidity of Mental and Physical Health. *World Psychiatry*, 22, 169–170.
- Fiorillo, A. & Sartorius, N. (2021). Mortality gap and physical comorbidity of people with severe mental disorders: The public health scandal. *Annals of General Psychiatry*, 20, 52.

- Foster, K. N., Lewis, M., Marshall, A. & Lewis, P. (2013). Educating Australian registered nurses in comprehensive health assessment: A pilot study. *The Journal of Continuing Education in Nursing*, 44, 155–162.
- Goldman, J. S. & Trommer, A. E. (2019). A qualitative study of the impact of a dementia experiential learning project on pre-medical students: A friend for Rachel. *BMC Medical Education*, 19, 127.
- Grassi, L. & Riba, M. B. (2021). Disparities and inequalities in cancer care and outcomes in patients with severe mental illness: Call to action. *Psycho-oncology*, 30, 1997–2001.
- Haddad, M., Llewellyn-Jones, S., Yarnold, S. & Simpson, A. (2016). Improving the physical health of people with severe mental illness in a low secure forensic unit: An uncontrolled evaluation study of staff training and physical health care plans. *International Journal of Mental Health Nursing*, 25, 554–565.
- Halliday, E., Brennan, L., Bamba, C. & Popay, J. (2021). ‘It is surprising how much nonsense you hear’: How residents experience and react to living in a stigmatised place. A narrative synthesis of the qualitative evidence. *Health & Place*, 68, 102525.
- Happell, B., Platania-Phung, C., Watkins, A., et al. (2019). Developing an evidence-based specialist nursing role to improve the physical health care of people with mental illness. *Issues in Mental Health Nursing*, 40, 832–838.
- Happell, B., Scott, D., Nankivell, J. & Platania-Phung, C. (2013a). Nurses’ views on training needs to increase provision of primary care for consumers with serious mental illness. *Perspectives in Psychiatric Care*, 49, 210–217.
- Happell, B., Scott, D., Nankivell, J. & Platania-Phung, C. (2013b). Screening physical health? Yes! But...: Nurses’ views on physical health screening in mental health care. *Journal of Clinical Nursing*, 22, 2286–2297.

- Hawker, S., Payne, S., Kerr, C., Hardey, M. & Powell, J. (2002). Appraising the evidence: Reviewing disparate data systematically. *Qualitative Health Research*, 12, 1284–1299.
- Health Education England (2015). *Raising the bar: Shape of caring: A review of the future education and training of registered nurses and care assistants*. Available from: <https://www.hee.nhs.uk/sites/default/files/documents/2348-Shape-of-caring-review-FINAL.pdf> [Accessed 21st September 2023]
- Health Education England (2022). *Commitment and growth: Advancing mental health nursing now and for the future*. Available from: <https://www.hee.nhs.uk/news-blogs-events/news/major-hee-review-recommends-ways-develop-mental-health-nursing-workforce> [Accessed 20th July 2022]
- Hennessy, S. & Cocoman, A. M. (2018). What is the impact of targeted health education for mental health nurses in the provision of physical health care? An integrated literature review. *Issues in Mental Health Nursing*, 39, 700–706.
- Ho, L.-L., Li, Y., Gray, R., Ho, G. W. & Bressington, D. (2022). Experiences and views of carers regarding the physical health care of people with severe mental illness: An integrative thematic review of qualitative research. *Journal of Psychiatric and Mental Health Nursing*, 29, 774–787.
- Howell, S., Yarovova, E., Khwanda, A. & Rosen, S. D. (2019). Cardiovascular effects of psychotic illnesses and antipsychotic therapy. *Heart*, 105, 1852–1859.
- Hurley, J. & Lakeman, R. (2021). Making the case for clinical mental health nurses to break their silence on the healing they create: A critical discussion. *International Journal of Mental Health Nursing*, 30, 574–582.
- Hurley, J., Lakeman, R., Linsley, P., Ramsay, M. & Mckenna-Lawson, S. (2022). Utilizing the mental health nursing workforce: A scoping review of mental health nursing

- clinical roles and identities. *International Journal of Mental Health Nursing*, 31, 796–822.
- Kraiger, K., McLinden, D. & Casper, W. J. (2004). Collaborative planning for training impact. *Human Resource Management*, 43, 337–351.
- Lavelle, M., Attoe, C., Tritschler, C. & Cross, S. (2017). Managing medical emergencies in mental health settings using an interprofessional in-situ simulation training programme: A mixed methods evaluation study. *Nurse Education Today*, 59, 103–109.
- McIntosh, J. T. P. (2021). Emergency department nurses' care of psychiatric patients: A scoping review. *International Emergency Nursing*, 54, 100929.
- Mulhearn, P., Cotter, P., O'Shea, M. & Leahy-Warren, P. (2021). Experiences of registered general nurses who care for patients presenting with self-harm to the emergency department in Ireland. *International Emergency Nursing*, 58, 101047.
- Mwebe, H. (2017). Physical health monitoring in mental health settings: A study exploring mental health nurses' views of their role. *Journal of Clinical Nursing*, 26, 3067–3078.
- Noe, R. A. & Colquitt, J. A. (2001). Planning for training impact: Principals of training effectiveness. In: K. Kraiger (Ed), *Creating, implementing, and maintaining effective training and development: State-of-the-art lessons for practice* (pp. 53–79). San Francisco: Jossey-Bass.
- Nursing and Midwifery Council (2018). *Future nurse: Standards of proficiency for registered nurses*. NMC. Available from: <https://www.nmc.org.uk/standards/standards-for-nurses/standards-of-proficiency-for-registered-nurses/> [Accessed 21st September 2023]
- Opusunju, E. E., Palmieri, P. A., Dominguez-Cancino, K. A., Jaque-Ortiz, S. & Whitehead, D. K. (2022). Improving the physical health of psychiatric hospital residents: An

- evaluation of an obesity education program for mental health professionals. *Healthcare*, 10, 1851.
- Page, M. J., McKenzie, J. E., Bossuyt, P. M., et al. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *International Journal of Surgery*, 88, 105906.
- Popay, J., Roberts, H., Sowden, A., et al. (2006). Guidance on the conduct of narrative synthesis in systematic reviews. *A product from the ESRC methods programme*, 1, b.92.
- Protani, M. M., Alotiby, M. K. N., Seth, R., et al. (2022). Colorectal cancer treatment in people with severe mental illness: A systematic review and meta-analysis. *Epidemiology and Psychiatric Sciences*, 31, e82.
- Ryan, A., Herrera, S. & Patel, M. (2021). Emergency nurses' experiences in treating patients with mental illness: A qualitative, interpretive metasynthesis. *Journal of Emergency Nursing*, 47, 852–859.
- Sanjeevkumar, V. V., Kumar M. D. & Hu, Y. (2012). Effect of contextual factors of training on training effectiveness study in Kedah State Development Corporation, Kedah Malaysia. *Pratibimba: The Journal of IMIS*, 12, 7–19.
- Sung, S. C., Jiang, H. H., Chen, R. R. & Chao, J. K. (2016). Bridging the gap in sexual healthcare in nursing practice: Implementing a sexual healthcare training programme to improve outcomes. *Journal of Clinical Nursing*, 25, 2989–3000.
- Terry, J. & Cutter, J. (2013). Does education improve mental health practitioners' confidence in meeting the physical health needs of mental health service users? A mixed methods pilot study. *Issues in Mental Health Nursing*, 34, 249–255.

- Tong, A., Flemming, K., McInnes, E., Oliver, S. & Craig, J. (2012). Enhancing transparency in reporting the synthesis of qualitative research: ENTREQ. *BMC Medical Research Methodology*, 12, 181.
- Tyler, L., Joggyah, R. & Clemett, V. J. (2019). Simulation-based nurse education for comorbid health problems: A systematic review. *Clinical Simulation in Nursing*, 37, 50–61.
- Tzeng, W.-C., Su, P.-Y., Yeh, S.-H., Chang, T.-W., Lin, C.-H. & Feng, H.-P. (2023). Nurses' views on the provision of physical healthcare for individuals with comorbid mental illness and chronic disease. *International Journal of Mental Health Nursing*, 32, 199–211.
- Watkins, A., Stein-Parbury, J., Denney-Wilson, E., Ward, P. B. & Rosenbaum, S. (2020). Upskilling mental health nurses to address the burden of poor metabolic health: A mixed method evaluation. *Issues in Mental Health Nursing*, 41, 925–931.
- Wen, F. K., Crosby, K., Miller, B. H., et al. (2020). Association of first-line antidepressants and incident adverse metabolic effects. *Canadian Family Physician*, 66, 898–900.

Table 1. Terms used in search strategy

Serious Mental illness	Physical health	Training and	Staff
AND	AND	education	
		AND	
chronic mental illness	physical health or	need [†] or learning or	nurse [†] or health
or serious mental	physical wellbeing or	education or training	worker [†] or
illness ^{†1} or severe	physical screening or	or seminar [†] or	health care
mental illness [†] or	physical activity or	workshop [†] or	assistant [†] or
psychosis or	metabolic syndrome	continuing	support worker [†]
schizophrenia or	or diabetes or	professional	or manager [†] or
bipolar disorder or	cardiovascular	development or	instructor [†] or
schizoaffective	disease [†] or	course [†]	tutor [†] or
disorder or hypomania	hypertension		trainer [†]).
or mania			

¹ † a truncation symbol to denote any number of letters in databases search

Table 2. Inclusion and exclusion criteria

Inclusion Criteria	Exclusion Criteria
Types of studies: studies using qualitative approach, method or report qualitative findings. Mixed methods studies that report qualitative findings	Studies reporting only quantitative data Non-empirical studies/papers Non-English Language papers
Types of participants: Qualified mental health nursing staff and clinical support staff working in in-patients or outpatients. Managers of mental health nurses, and trainers in physical health care.	-General nurses in non-mental health settings.
Phenomenon of interest: training and education in physical health care. These may include one to one session, group sessions, face to face or online, supplementary written materials, seminars, workshops, and continuing professional development programmes.	-Studies that report training only in mental health care
Evaluation (Intended Outcomes): This includes the participants' views or perceptions of training needs, knowledge, skills, practice, confidence and attitudes	Studies that examine views of effectiveness in terms of patients' outcomes only.

Table 3. Characteristics of included studies

Authors	Country	Design/Method	Participants/sample	Aims/focus	Description of intervention/Exposure	Themes/Findings	Quality Rating
Baker et al. (2014)	Australia	Qualitative descriptive Interviews	Mental health nurses, rural health workers, trainers Setting: mental health clinics and rural working setting 6XF/0M	To explore the views of health workers who attended a self-management support program to facilitate physical health in mental health setting	Training program Flinders	Themes: disease management in relation to job role, challenges of co-ordination, putting self-management support into practice	32/36

Çelik Ince et al. (2018)	Turkey	Qualitative descriptive design	Mental health nurses in adult psychiatry clinics N=12 M=0 F=12 Range: 31-48 Mean=41.08±5.69	To explore needs, motivators, barriers, types of practices in physical health care and the role mental health nurses play in promoting physical healthcare	Routine practice (no exposure)	Themes: needs for better physical health care, motivators, barriers to physical healthcare, and physical health care practices.	32/36
Foster et al. (2013)	Australia	Qualitative evaluation study	Registered nurses (mental and	To evaluate the delivery of comprehensive	CPD course on comprehensive health assessment (mental	Three themes emerged from analysis: reconstructing speciality knowledge,	34/36

		Interviews	general nurses) and	assessment	and physical health	integrating revised	
		Observations	academic staff	provided to	assessment).	knowledge into practice and	
			N=9, 7M and 2F	registered	Duration=4 months	expanding practice	
			Age range=25-53	general and			
			Setting:	mental health			
			CPD Course	nurses			
			University				
Haddad et al. (2016)	United Kingdom	Uncontrolled mixed methods with qualitative component	Mental health nurses and health care assistants	To evaluate the effect of training addressing physical monitoring and care on knowledge and attitudes	Physical health care education provided to healthcare staff	Physical health care plans were s good idea but uptake limited due to other competing priorities and perceived need of extra support	32/36
		Questionnaires	36M (57%), 27F (27%)		Duration=Away day		
		Free text comments	Setting: Forensic mental health unit				

				of mental health staff and purposed built care plans			
Happell et al. (2013a)	Australia	Qualitative exploratory design Focus groups	Mental health nurses working in inpatient unit and community team. N=38	To ascertain nurses' views on their preparedness to provide physical health care and identified training needs	Routine practice (no exposure)	Theme: The need for physical healthcare training, (b) modes of training, (c) access to training, and (d) organizational commitment.	34/36

Happell et al. (2013b)	Australia	Qualitative descriptive Focus groups	Qualified and unqualified mental health nurses, nurse educators Community and inpatient teams N=38) Focus groups	To explore nurses' views of the role of nurses for screening and monitoring in physical health care in patients with serious mental illness	Routine practice (no exposure)	Themes/findings: screening essential for good practice; the policy practice-gap; screening then what? And is HIP the answer?	34/36
Lavelle et al. (2017)	United Kingdom	Mixed methods evaluation	Mental health nurses, psychiatrists, health care	To evaluate simulation intervention training for	Eight half-day sessions delivered weekly across two psychiatric	five prominent themes: confidence; team working skills; communication skills;	32/36

			assistants, activity coordinators N=53	managing medical deterioration in mental health settings	wards	reflective practice; and personal responsibility.	
Mwebe (2017)	United Kingdom	Qualitative exploratory design Semi structured Interviews	Mental health nurses working in in-patient unit and community team. N=10	To explore mental health nurses' views on their role in physical health care, preparedness for their role, and perceived education and training needs	Routine practice (no exposure)	Themes: education and training needs; perceived barriers to physical health monitoring; features of current practice and strategies to improve physical health monitoring.	32/36

Sung et al. (2016)	Taiwan	Mixed methods study with qualitative component	Registered nurses in a mental and community general hospital in Taiwan	To evaluate effectiveness of a sexual healthcare training programme for clinical nurses with respect to knowledge, attitudes and self-efficacy	Stage 2=training program for sexual healthcare clinician trainers Stage 1: Nurses perceptions of sexual health training needs Stage 2: 16 hours over 17 Wks 1 Focus grps, 2=Questionnaires KSHC, ASHC and SESH scales Stage 1: content analysis	Stage1: Themes-views and experiences dealing with sexual health care; training concerns and expectations	34/36
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Terry and Cutter (2013)	United Kingdom	Mixed methods pilot study with qualitative component Focus groups Questionnaires	Mental health nurses and support workers attending a CPD course Setting =University N=15	To explore participants' views of their confidence in addressing physical health care needs following attendance of a CPD course module	CPD course on physical health knowledge and delivery	Themes: identifying new knowledge, changing practice, need to increase physical health knowledge and skills	32/36
Watkins et al. (2020)	Australia	Mixed methods evaluation	Mental health nurses N=56 Setting:	To evaluate the effect of a 2 day	2 day metabolic workshops to provide nurses with the skills	Education on metabolic health care can be effective in improving the attitudes, confidence, and knowledge	32/36

University	metabolic	to provide lifestyle	of mental health nursing in
workshop	workshop	interventions	providing metabolic health care
