RESEARCH

Exploring what works in mental health education for health profession students: a realist review

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Abstract

Introduction   Mental health education is essential for preparing healthcare professionals to address the growing needs of patients with mental health challenges. The aim of this study was to understand the current landscape of teaching and learning approaches to mental health education for undergraduate health profession students.

Methodology   A realist review was chosen to explore what works for whom, how, and why in teaching and learning for mental health education for undergraduate health profession students. The search strategy was developed iteratively, with support from a research librarian, and additional searches supplemented the initial search. Following screening in duplicate, the selected studies were appraised for relevance, richness and rigour. Intervention (I), Context (C), Actor (A), Mechanism (M) and Outcome (O) configurations were extracted from the data and analysed for patterns and conceptual areas. Stakeholder and Patient and Public Involvement panels supported the refinement of both the Initial Programme Theory (IPT) and Programme Theories (PT).

Results   78 articles were included. The results identified three critical program theories: (1) direct contact with individuals with lived experience (2), longitudinal and integrative learning approach, and (3) diversity of experiential and community-engaged learning. Integrating these theories into health education curricula may lead to professionals better prepared to address mental health challenges.

Conclusion   Our realist review identified three critical programme theories for teaching and learning strategies that foster this literacy, including direct engagement with individuals who have lived experiences, a longitudinal and integrative approach to education, and a diverse array of experiential and community-engaged learning opportunities.

Keywords   Mental health education, Realist review, Health professions education

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Introduction
Note on terminology
There is a wide variety of terms used to describe someone experiencing, or who has experienced mental health challenges and/or mental illness in the literature. The research team is guided by our patient and public involvement (PPI) group on the language we use in our own literature. We will use person experiencing/who has experienced mental health challenges or patient where necessary.

Background
Building a supportive and resilient healthcare workforce starts with health professions education. The World Health Organisation's report on increasing global capacity for mental health highlighted the role of all health professions in supporting growing mental health needs of patients [1]. Ireland's mental health policy, "Sharing the Vision", prioritises prevention and early intervention and the enhanced capability of primary health services to respond to mental health needs [2]. Health profession students must be equipped with mental health literacy to effectively support individuals facing mental health challenges [3, 4]. Mental health literacy can be defined as knowledge about mental health disorders that is associated with their recognition, management, and prevention [5]. It has been suggested that developing mental health literacy can support the early recognition and intervention in mental health challenges [6]. Furthermore, A recent study on pharmacists experiences of suicide found that up to 60% of surveyed pharmacists in Ireland had experienced a patient suicide [7]. Additionally, the suicide rate of male physicians is estimated to be up to 40% higher than that of men in the general population, and 130% higher in female physicians than women in the general population [8]. Because of this, it is essential to provide education on mental health and related conditions to these students. This education will enable them to better care for themselves, their peers, and their future patients.

   To achieve this, those involved in education design, delivery and assessment first must understand what works best for health profession students to develop mental health literacy, to learn essential communication and recovery focused care skills, and to feel confident caring for people with mental health challenges. Recovery focused care skills are informed by the knowledge that people can and do recovery from mental distress [2]. Students are a heterogenous group who all come with their own set of expectations, priorities and previous knowledge. Additionally, the societal stigma associated with people with mental health challenges adds another layer of complexity to achieve the learning goals of any curricula focused on mental health care [9]. Therefore, inquiring into the diverse array of curriculum and module delivery, design, and assessment methods is necessary to find out what is the most effective approach to educate health profession students in mental health topics.

Overview of common education approaches for health profession students
Case based learning (CBL)
CBL utilises authentic clinical cases which can help prepare students for their clinical practice, drawing on inquiry based learning methods [10]. CBL links theory and practice and engages students in the discussion of specific real-world clinical challenges [10]. Cases generally tell a story based on an authentic patient story, involve common scenarios, stimulate interest and discussion among students, and promote decision making [10]. Within mental health education, CBL can be used to assist students to gain in depth knowledge of the theoretical literature, develop understanding of the experience of having a mental health challenge and develop and awareness of the treatments and considerations involved in developing a plan with the patient [11]. CBL has been found to develop students foundation knowledge and prepare them for developing complex understandings of health and illness [12] along with being an important tool for active learning within multicultural contexts [13].

Patient and public involvement (PPI) in education
PPI can be integrated into health education in the design, delivery and assessment of education [14]. It has been highlighted that a range of patient voices should be included in health professions education to support authentic learning [14] and develop shared decision-making skills [15]. However, PPI lacks a sustainable integration into curricula, because it is often only utilised as a 'once off' initiative [15]. Additionally, when PPI is incorporated into educational approaches such as simulation, it can offer a meaningful person -centred simulation experience [16]. PPI in education is also widely acceptable to the public, with one study citing that up to 70% of a diverse sample of the public were willing to be involved in health professions education as a PPI contributor [17].

Experiential learning
Experiential learning means to learn from experience or learn by doing [18]. Kolb's learning cycle forms the theoretical basis for experiential learning and consists of four stages: (a) concrete experience, where the learner engages in activities such as simulations; (b) reflective observation, where the learner contemplates the experience; (c) abstract conceptualization, where the learner evaluates thoughts and reflections to understand the learning experience's importance and considers potential improvements; and (d) active experimentation, which

involves applying the acquired knowledge to guide future practice [19, 20]. Experiential learning has shown to develop essential skills for mental health literacy such as empathy [21].

Simulation is an educational approach rooted in experiential approach. The goal of simulation is to mimic medical and healthcare environments which allows students to practice skills in a risk-free environment. It has shown to improve skill retention [22] problem solving skills [23], and enhance students' collaborative skills. Simulation based education is underpinned by a behaviourist learning approach focused on repetition of skills [23]. Recent research from Pakistan shows simulation to be an essential teaching and learning strategy for medical students [24].

Interprofessional learning (IPL)
The delivery of complex care requires a team based and collaborative approach, so engaging students within an IPL setting can support them to develop these important skills at an early stage [25]. IPL can be defined as active learning 'with' and 'from' other disciplines [26]. IPL can be utilised in mental health education to support a more authentic learning environment and has been utilised to compliment teaching in areas such as medication safety [27] mental and physical comorbidities [28] and in perinatal mental health [29]. Whilst IPL is recognised as important for a collaborative future healthcare workforce, organising IPL activities within curriculums can face logistical challenges, and decisions on what to offer, how and when are often made on a pragmatic basis, rather than a pedagogical one [25].

Community engaged learning
This involves a mutually beneficial relationship between community partners and educational institutions [30] and usually involves a student being involved in a community organisation as a student or volunteer. It involves the combination of service activities and academic learning objectives, with the intent that the activity will benefit both the recipient and provider [31]. Generally, students will be required to reflect on their experiences to explore key knowledge development, skill development and values [31]. Research on community engaged learning has shown that it can bring the community and patient voice into the curricula enabling students to reflect on this within their other learning [32].

These teaching and learning approaches are just some of the approaches that are utilised for health professions education in mental health. We know that a wide variety of mental health education approaches exist and it is not yet known how these operate to prepare health profession students for future clinical practice in the area of mental health.

A realist review seeks to answer questions such as 'what works, for whom, in what contexts, in what ways, to what extent, and why?'. This type of research examines the connections between contextual factors and the processes or mechanisms they activate, known as the CMO configuration, to elucidate why and how different outcomes are achieved [33–35].

A realist review is necessary in order to inquire into the mechanisms of mental health education and to help illustrate a theory or theories of practice for mental health education of undergraduate health profession students.

Research questions
What works for whom, how, and why in mental health education for undergraduate health profession students?

1. What are the teaching and learning approaches to mental health education across health profession curricula?
2. What are the features (context and mechanisms) of these curricular approaches (interventions) that produce different outcomes for different students (actors)?
3. What are the different theories which can help explain how and for who the identified mental health education approaches work and why?

The aim of this study is to understand the current landscape of teaching and learning approaches to mental health education for undergraduate health profession students.

Methods and analysis
A realist review was chosen for this study because identifying the active mechanisms (the choices, perceptions and reasoning that result from the resources of the intervention) within teaching and learning approaches was necessary to answer the research questions. This realist review was conducted in accordance with the previously published protocol [36] and ran from October 2023 to August 2024. Within this review, we initially utilised the common Context, Mechanism, Outcomes (CMO) heuristic, however as the review progressed, it became clear to the research team that the Interventions, Context, Actor, Mechanisms, Outcomes (ICAMO) heuristic [33] was most suitable in order to be able to extract specific data concerning the intervention and actors [37].

The ICAMO glossary is illustrated below:

Philosophy
Realist research is theory-driven, with the unit of analysis being the program theory rather than program activities [33]. In realist research, the program is seen as a dynamic mini-system within a larger complex social world [35].

The enquiry of the research is to build and then test an account, or accounts, of how and why an intervention works [35].

In this review, we followed the steps outlined in realist and meta-narrative evidence synthesis (RAMESES) guide for meta-narrative synthesis [38] which is attached in supplementary material 1.

Locating existing theories: engaging stakeholders phase 1

A preliminary stage in realist review is the dialogue among the research team members as well as with the intended user(s) of the review, to clarify its focus and prioritise questions and direction of theory building [39]. To do this, a stakeholder group was convened in order to establish priorities and maintain theoretical awareness throughout the study [34, 40]. Stakeholders were selected utilising Pawson's Subject, Practitioner, Evaluator Framework [34] and stakeholder membership is displayed in Table 2 along with a PPI panel. The aim of PPI in this study is to support people with lived experience and health profession students to work together with the research team to guide the research process. Stakeholder engagement informed the search strategy and is described in the study protocol [36].

The development of the initial programme theories (IPT)

Data from the theory gleaning interviews which relate to Initial Programme Theories (IPT) were reviewed in duplicate (ZM/AK). Data which was considered critical for theory development was extracted into an interview appraisal spreadsheet for analysis. At this stage, an initial programme theory was developed which supported the direction of the search strategy for the study. Stakeholder engagement and public and patient involvement was a key feature of this IPT, through interviews ($n = 6$) and group discussions co-facilitated by PPI members ($n = 2$), as described in the previously published protocol [36].

From this process, five core IPTs were identified: Safe learning environment; education philosophy and design; learner characteristics; logistics; and skill development as shown in Fig. 1 below.

After this process was completed and the IPT was agreed upon, the search strategy was devised and conducted with support from a research librarian.

Nature and content of the intervention

Mental health education initiatives are varied in their scope, delivery and approach. The focus of this review is on novel, recovery focused interventions as described in the previously published protocol [36].

Refine purpose of review

The aim of this study was to understand the current landscape of teaching and learning approaches to mental health education for undergraduate health profession students. A priority was to identify studies which utilised a recovery focused and PPI approach as this was highlighted from stakeholders as an important aspect of current mental health education approaches.

Defining patient and public involvement for this study

PPI in health professions education has often referred to Towle's et al. 'Ladder of Involvement', which considers PPI to be a fictionalised case on the lowest level, right up to the highest level of involvement which includes PPI contributors who are involved at an institutional level [15]. However, within this study we only considered an educational intervention to be a PPI approach if it included direct or indirect contact between students or curricula developers with an expert by experience. This could be through being a patient educator (direct contact), collaborating with curricula developers to develop education (direct contact), or by providing video or text-based resources on their lived experiences (indirect contact). Additionally, PPI in instances where the public, i.e. actors were involved in health profession curricula via simulated practice was also included. We do not consider fictionalised cases to be PPI as they do not include people with lived experience helping to develop or write these cases.

Search for evidence

Developing the search strategy

The search strategy was guided by the stakeholder involvement and PPI panel. As recommended within realist reviews, the search strategy began broad and was narrowed down as the review progressed [41]. This initial search strategy was developed with support from a research librarian using the following databases: EMBASE, Medline, PsycInfo, CINAHL Complete, Cochrane and ERIC. The details on this search strategy are provided in supplementary material 2.

In line with the realist approach to literature synthesis we also conducted additional searches for specific literature on 'mentorship' [41] as this was one area that was lacking in the reviewed literature and available evidence showed promise for a recovery oriented and PPI approach to education [42].

Initial inclusion and exclusion criteria

Any article that focuses on mental health education for undergraduate health profession students was included, covering a range of educational approaches, initiatives, and evaluations. This includes studies in any language. Articles that did not reference mental health education for undergraduate health profession students were excluded at this stage.
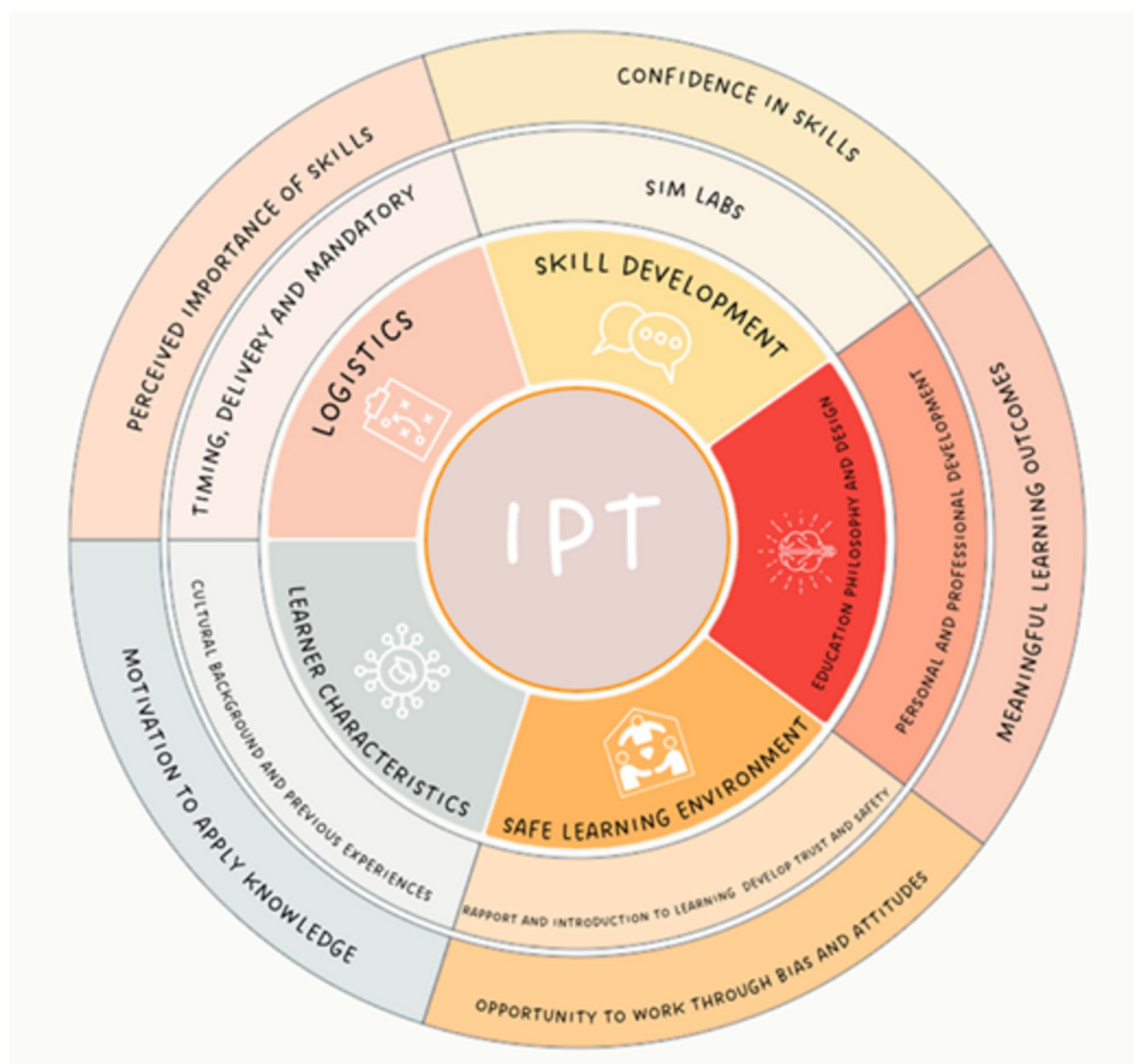
Fig. 1 Diagram of IPT

Selection of papers

Firstly, all papers were screened by title and abstract in duplicate (ZM and AK). Each title and abstract were reviewed using the inclusion and exclusion criteria to determine its suitability for the review. Papers were excluded because they were either not related to the mental health education of health profession students, not an intervention, focused on post-graduate health profession students or focused solely on the wellbeing of health profession students. Discrepancies were reviewed by JS who made the final judgement on papers to go forward for full text screening.

Due to the large number of accepted papers at this stage ($n = 687$) the research team agreed on developing a further exclusion criterion for the study. After discussion among the research team, articles were to be excluded based on: Article types (letter to editor, abstracts, reviews); study is not evaluating an intervention; study is published before 2014; Additionally, the included studies at this point were overrepresented by nursing research ($n = 143$). The research team agreed to separate the nursing studies and do a theoretically focused full text extraction of these studies, after reviewing the included 98 manuscripts which included a wide variety of undergraduate health professions.

At this stage, the 98 accepted papers proceeded to the full text retrieval. ZM reviewed each paper independently and determined its suitability to be included in the

Table 3 Appraisal strategy

Level	Description
High	Relevance: Papers, which have high relevance to the realist synthesis. Research questions and aim are highly matched to the review questions. Findings are clearly described. Richness: Intervention, methods and participants are richly described. Descriptions allow for contexts and mechanisms to be gleaned from the paper and can greatly contribute theory refinement and development. The paper describes conceptually thick data relating to CMOC which provides deep insights relating to richness. This paper is a key informant to programme theories. Rigour: The paper utilises highly rigorous methodological approaches such as RCT and looks for long term outcomes.
Moderate	Relevance: Papers, which are moderately relevant to the realist synthesis. The primary research is moderately matched to the review questions and theories. Description of intervention, methods and participants may have some gaps. Richness: Mechanism and context extraction may be more difficult and details included may limit identification of mechanisms. Paper describes some potentially thick or thin data relating to CMOC which is moderately useful for richness. Rigour: Paper describes the methodology clearly and follows a framework which is described in some detail. Findings may be described quite clearly, but with insufficient detail to be of high rigour or may be unclear described.
Low	Papers in this category meet inclusion criteria but the quality of description of methods and outcomes are poor so they may not be fully credible and are low in terms of rigour. Those with low rigour which contain rich information about contexts, mechanism or conceptualising outcomes, which can be used for theory refinement should remain in the synthesis. Data does not describe, or only references partly thin data relating to CMOC which is not sufficient for richness.
Exclude	Papers that do not correspond to initial programme theories or do not at all describe contexts or mechanisms, hence do not contribute to theory refinement.

review. Once this was complete, the nursing education studies were reviewed for inclusion based on the updated inclusion criteria and relevant studies added ($n = 27$).

After this, further searches were warranted to identify grey literature and identify any missing studies. The excluded reviews were citation searched backwards and forwards and relevant studied added ($n = 5$). A search of relevant mental health education websites and Google was completed which provided grey literature reports ($n = 9$). Finally, an additional search of the Embase database for studies on mentorship was completed ($n = 2$). Of these, 20% were double screened by the reviewers (JS, AK) in order to capture any potential discrepancies. Discrepancies identified related to different interpretations of PPI in the literature, this was resolved by ZM further identifying what constitutes PPI in education

by reviewing Towles Ladder of Involvement, and other frameworks defining PPI in education [14, 43].

Appraise studies and extract data

Studies were appraised for relevance, richness and rigour, in line with the updated realist methodology for conducting realist reviews [44] and this was completed as described in the study protocol [36]. The appraisal strategy used can be viewed in Table 3.

All studies were appraised using a high, medium and low rating for each appraisal category. Any studies that had a low rating in all appraisal categories; relevance, richness and rigour were excluded at this point ($n = 24$) and all other studies went forward for extraction ($n = 76$). The full search strategy diagram can be viewed in Fig. 2. More than half of the included studies were of high relevance ($n = 36$), medium richness ($n = 42$) and of medium rigour ($n = 33$).
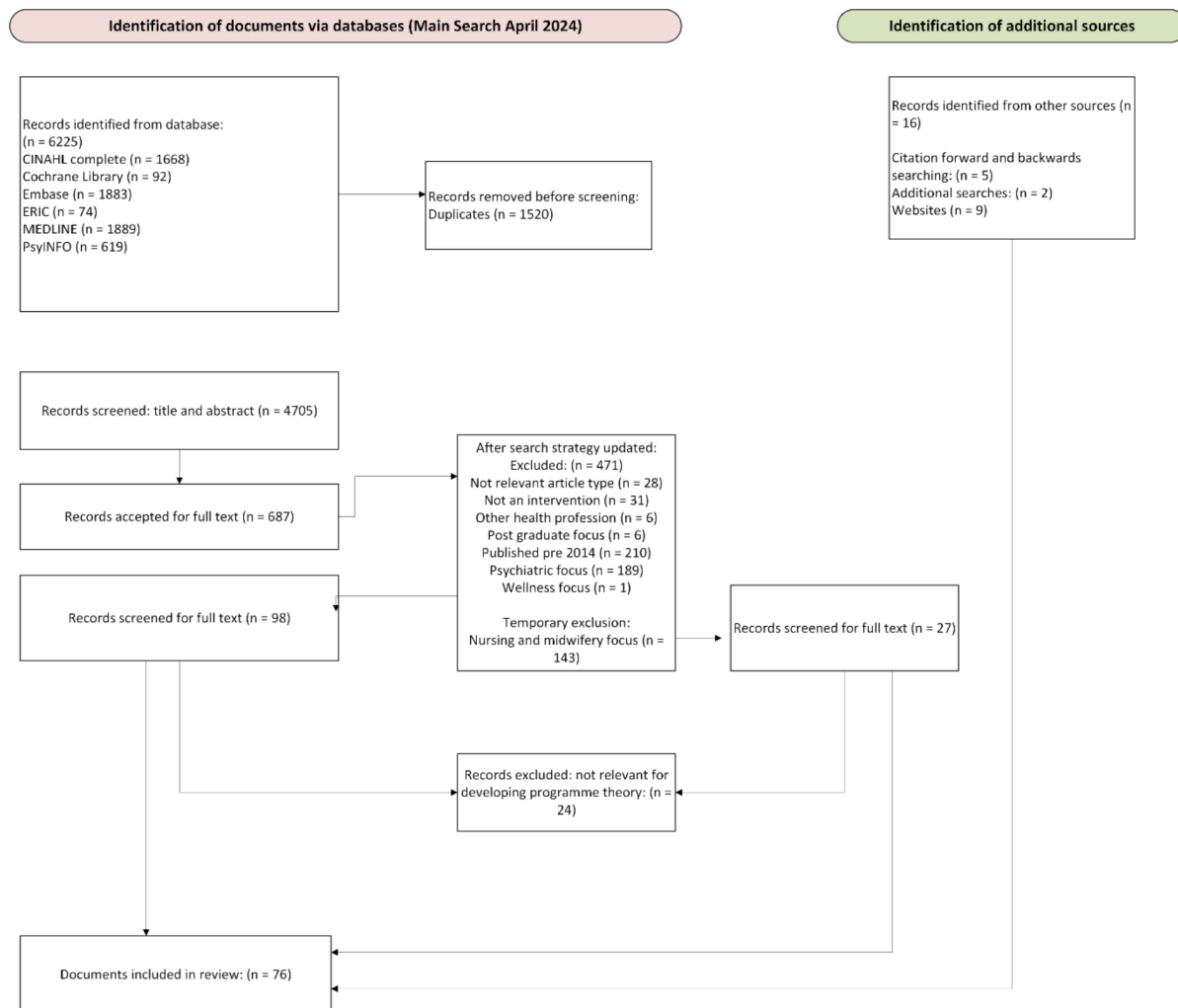
Data extraction

Data from the literature searches was extracted into a data extraction form for analysis of the emerging theories. The relevant text fragments which correspond to the ICAMOC were coded and rated as per Table 1 which is a categorisation strategy taken from Kerr et al. [45] and updated in line with more recent developments in realist synthesis appraisal [46] to include a richness category as described in the study protocol [36]. The extraction categories included descriptive study data, and I, C, A, M, O boxes. The data extraction categories were devised pragmatically, and with input from PPI panel who suggested that the environment of an intervention, i.e. university or community, would be an important factor to consider.

ICAMO configurations were extracted from each article. The development of ICAMO configurations was done by mapping the patterns in the data through the extraction sheet. Several iterations of data mapping were completed through writing down all the patterns and slowly merging similar contexts together along with the sources supporting them. Multiple research team meetings were conducted as a group and between AK and ZM during this process to refine and develop the ICAMO configurations. The configurations were then analysed for patterns and conceptual areas of interest. This resulted in 8 conceptual buckets. Each conceptual bucket was given an ICAMO statement incorporating the common theory represented in the literature as displayed in Table 4.

Stakeholder consultation: validation of theories phase 2

The second phase of stakeholder engagement occurred at this stage to support theory refinement and to help prevent bias in the development of theory. Stakeholder group discussions were held after literature searching and extraction was completed to further validate and refine

Identification of documents via databases (Main Search April 2024)

Identification of additional sources

Records identified from database:
(n = 6225)
CINAHL complete (n = 1668)
Cochrane Library (n = 92)
Embase (n = 1883)
ERIC (n = 74)
MEDLINE (n = 1889)
PsyINFO (n = 619)

Records removed before screening:
Duplicates (n = 1520)

Records identified from other sources (n = 16)

Citation forward and backwards searching: (n = 5)
Additional searches: (n = 2)
Websites (n = 9)

Records screened: title and abstract (n = 4705)

Records accepted for full text (n = 687)

After search strategy updated:
Excluded: (n = 471)
Not relevant article type (n = 28)
Not an intervention (n = 31)
Other health profession (n = 6)
Post graduate focus (n = 6)
Published pre 2014 (n = 210)
Psychiatric focus (n = 189)
Wellness focus (n = 1)

Temporary exclusion:
Nursing and midwifery focus (n = 143)

Records screened for full text (n = 98)

Records screened for full text (n = 27)

Records excluded: not relevant for developing programme theory: (n = 24)

Documents included in review: (n = 76)

Fig. 2 Search strategy: Adapted from Howe (2024)

the programme theories. The stakeholders were divided into two groups, and invited to an in-person discussion group where they were presented with five theories each to validate or reject. These theories were presented as vignettes in order to make the theories clear to the stakeholder group who are not trained in realist methods. These group discussions were jointly facilitated by ZM and GL, a PPI panel member. An example vignette is displayed in Table 5 and all vignettes can be viewed in supplementary material 3 which contains all the ICAMO statements written as vignettes.

Results
Characteristics of the included studies
In total, ($n = 78$) manuscripts were included which contained a wide variety of teaching and learning interventions across ($n = 22$) countries. The majority of the studies were describing interventions in USA ($n = 33$), the UK

($n = 8$) and Australia ($n = 7$). The studies also described mental health education for a wide variety of students at different levels of their education; medicine ($n = 36$), pharmacy ($n = 25$), nursing ($n = 15$) dentistry ($n = 2$) and paramedical sciences ($n = 2$). Additionally, some allied professions such as occupational therapy and social work were also included among the literature ($n = 3$).

The majority of studies included were of medium to high rigour ($n = 60$), medium richness ($n = 21$) and medium to high relevance ($n = 25$).

The included studies and range of interventions and outcomes identified in the literature can be viewed in Table 6 below.

Developing the theory through ICAMO configurations
The ICAMO configurations went through several phases of development, firstly from the extracted data and through conversations between ZM, AK and JS. The

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Table 1 ICAMO glossary

Concepts	Definition/description
Intervention (I)	Characteristics of the mental health education interventions such as modality, duration, activity type, and whether it is a core or elective intervention.
Context (C)	The conditions required for mechanisms to activate or not. These are the circumstances that can facilitate or restrain mechanisms which include, societal, structural and health profession attitudes about mental health or active ingredients evident in interventions such as direct or indirect contact, positive learning environment, or cultural context of the intervention and whether the module is core or elective.
Actors (A)	The type of health profession the student is learning to become (pharmacy, medicine, nursing, paramedicine, physiotherapy, occupational therapy). The stage of learning the student is at (junior, intermediate, senior). This also includes any learner characteristics of students such as age, gender, cultural background, previous or personal experiences.
Mechanism (M)	The choices, perceptions and reasoning that result from the resources of the intervention Resources: time, authenticity, connection, contact, trust, dialogue, repetition, collaboration. Responses: understanding, empathy, reflection, confidence, greater awareness
Outcomes (O)	Consequences of the intervention (empathy, confidence, skills development, mental health literacy)

Table 2 Stakeholder group membership

Subject	Practitioner	Evaluator
People with lived experience of mental health challenges (3)	Student welfare professionals (2)	Researcher (1)
Undergraduate health profession students (5)	Mental health education professionals (1)	Mental health professional (1)
		Educator (1)

stakeholder discussions also refined these theories further. A total of 8 ICAMO concepts were formed from the literature which can be viewed in Table 7 below. These contain and describe the active mechanisms of each type of intervention extracted from the data and also highlight the outcomes that each intervention can or should achieve. Additional features of interventions such as reflective learning, didactic only education, and dialogic learning activities also featured within the data extraction, but did not contain enough theory building evidence to build an ICAMO statement.

The validated programme theories
These ICAMO statements were then granulated further into a total of 3 refined and validated programme theories (PT). The granulation process involved in depth discussion among the research team. It was agreed that PPI was a core feature among many of the 8 ICAMOC's that warranted a PT on its own as it was an approach with the highest number of sources and noted impact on student's

empathy. It was regularly reported throughout the literature that hearing from people with lived experiences supported a change of perspective. Additionally, integrated and longitudinal approaches was the next granulated PT, because each ICAMOC had some reference to scaffolding of student's knowledge and developing their ability to consider complexity as their educational journey developed. One study exploring student volunteering over a 12-month period, found that students were enabled to develop adaptable mental health skills for supporting people experiencing suicidal ideation and integrate cultural competency skills through this experience. Finally, throughout the studies which involved community engaged and experiential learning, the impact was significant on the student's mental health literacy, empathy and role identity. The literature showed that this approach has significant impact beyond what can be achieved in traditional settings, therefore this was developed as the final PT. These explain how mental health education interventions operate to achieve learning goals. They involve not just the educators and students, but also the institutional relationships with external organisations and the active and meaningful involvement and integration of PPI partners in the education of health profession students. The associated ICAMO with each programme theory is explained in Fig. 3, which highlights each active mechanism involved in each programme theory. Figure 4 explains the process of each programme theory and highlights what works for who by illustrating the student level, how the education could be adapted and what outcomes can be expected.

Direct contact with people with lived experience
The first programme theory relates to ICAMO a, b, c, d, e, which all included direct contact in some form within the studied intervention [42, 47, 49–60, 64–78, 94, 97, 99–108, 114–118]. Direct contact can be defined as experiences where students have the opportunity to meet, or be exposed to someone with lived experience of mental health challenges. These sessions were mostly delivered in person [65, 69, 70, 72–75, 77, 78, 114, 117], but some were offered as a video testimonial or as part of an online webinar [64, 66, 76, 77, 115, 116, 118], volunteering opportunity [68, 94, 97, 99–107], or through a mentorship teaching approach [42, 108].

Direct contact can also occur within student exposure to clinical environments through work placements [70, 87, 95, 100, 103, 109–113] which provide authenticity and role responsibility. Some studies that focused on student volunteering in community settings as part of the curriculum showed that when students are given opportunities to interact with patients at an equal level, i.e. not as a health profession student in training but as a volunteer, they developed advanced skills due to the level

Table 4 List of conceptual buckets and source

Conceptual bucket	ICAMO statement	Sources
PPI– integrated external training programme	Integrating an already existing programme into curricula provides curriculum designers with mental health education programmes that are already evidence based and reduces labour of designing a programme from scratch. These programmes when integrated as they are, improve students' mental health literacy, provide some students with increased positive attitudes and support students with developing confidence in mental health skillsets– however many students self-report increases in confidence but when behaviours are assessed, the increase in confidence does not translate into essential mental health communication skills. Those with previous personal experiences appear to be more motivated and engaged with the training. These training programmes can be adapted to the health profession students utilising common education approaches such as simulation, to greater integrate essential role knowledge and enhance outcomes.	(47–68)
PPI– patient educator	Students regard patient speakers highly. When students have the opportunity to listen to a patient speaker tell their story, and this presentation is adapted to the students future role identity, this provides students with opportunities to consider their own attitudes, reflect on the importance of compassionate patient centred care for their future practice, and this supports students to integrate more positive attitudes and recovery focused, non-paternalistic approach towards people with mental illness, and develop a willingness, confidence and comfort in supporting these patients. This can be provided as a video testimony or as an in person didactic lecture.	(64–66, 69–78)
PPI– mental health skills assessed via simulation	When simulation is utilised as a learning strategy and is a core component with lived experience simulated patients or actors, students can practice mental health competencies in a realistic and risk-free environment. This provides students with opportunities to practice utilising core communication frameworks, engage with lived experienced simulated patients or actors. This is authentic for students, allows them to practice challenging encounters, develop their professional role identity in mental health and show their mental health literacy skills. This results in improvements in empathy, confidence, whilst also helping to develop adaptable and collaborative health professionals. Continued opportunities to practice these skills will support long lasting improvements in confidence.	(49, 61, 75, 78–87)
Creative approaches to mental health education	Creative approaches such as the use of film, simulated games, artwork and books can support students across stages. Utilising creative approaches within a curriculum can augment the learning from traditional approaches and develop student awareness of the holistic nature of different mental health conditions, such as barriers to care, impact on family members and helps evoke more emotional responses in students which can help de-stigmatise mental health difficulties.	(64, 73, 88–94)
Case based learning	Case based learning is a useful teaching strategy to introduce mental health topics, build upon previous knowledge and ensure that students are familiar and confident with the basic knowledge and test their ability to incorporate this knowledge into more complex scenarios. It can be utilised at any stage in the curricula and also within interprofessional learning to promote collaborative skills among students. CBL gives students the opportunity to develop their role identity in mental health, develop problem solving skills with others and enhance their competencies in mental health.	(66, 71, 75, 92, 95–98)
Experiential– engaging with communities	Students who have the opportunity to engage with people with mental health challenges outside of the context of educational and clinical spaces are enabled to collaborate and support people in a recovery focused approach, and reframe the hierarchy of patient vs. health professional/student. When students are given the opportunity to have repeated contact with this population, and this contact is supported by the college/institution, this can support the sustainability of external relationships with community organisations and healthcare providers which can augment the learning goals of the health profession curricula. This results in students increased problem solving skills, developing a contextual mental health literacy, developing their confidence, and developing pro-active and adaptable health profession students in the area of mental health practice.	(42, 68, 94, 97, 99– 108)
Experiential– traditional clinical placements	Experience during the curricula within an acute clinical environment, as either an elective or core component of a curriculum can support students at a more senior level to be exposed to more acute presentations of mental illness. However, it is most effective when there are multiple opportunities across a curricula to engage with this patient population, across a variety of clinical settings, due to inconsistencies of exposure within some clinical environments and importance of meeting patients at different stages of recovery to prevent the development of therapeutic pessimism. When students get this diverse exposure, it allows them to develop an understanding of their role in mental health and build upon this literacy and skills throughout the curricula. This could positively impact future patient care through the scaffolding of skills throughout the undergraduate curriculum.	(70, 87, 95, 109– 113)

of responsibility placed on them in these settings [68, 94, 97, 99–102, 104–107].

However the most common form of direct contact in the literature was in the form of one or two patient educator talks within a module which had been paired with a didactic and/or dialogic teaching and learning approach [64–66, 69–78, 114–118] and this approach seemed to be widely accepted and embraced by students. This type of direct contact enabled students to develop foundational mental health literacy prior to meeting a patient educator and integrate this mental health literacy with

the storytelling and experiences of the patient educator. This approach also reframed hierarchies between students and PPI partners or patients. Students were seen to develop empathy and understanding by listening to patient stories and being encouraged to ask questions. Developing a foundation mental health literacy through these patient contact sessions supports students to integrated more advanced mental health concepts further on in their educational career.

Pairing didactic and dialogic methods prior to patient contact appeared to be the most impactful approach for

Table 5 Vignette presented to stakeholders

Vignette	Stakeholders present to validate
Brian is a first year Medicine student. His parents have often expressed negative attitudes towards 'addicts'. During a module about professional skills, Brian attends a patient contact session where a mental health advocate tells their story through addiction. This patient contact session gives Brian an opportunity to consider how drug addiction is a health issue and the experience of stigmatisation that people in addiction face. The presentation is focused on the role that future doctors can play in recovery focused practice and the importance of shared decision making. Brian felt comfortable asking the patient educator questions during the session, and felt that there was a positive learning environment. Brian leaves the session with a new, more positive perspective, feeling more willing and comfortable to support people who are having addiction issues.	Subject, practitioner

developing empathy and understanding among students [70, 72, 73, 75, 77, 115–117]. Some studies in the literature that only used a patient educator approach found that it was not as impactful on its own, especially in cultural environments where stigma towards people with mental health challenges is particularly pronounced [118]. The literature also found that patient education on depression tended to increase empathy score more easily than patient education on psychosis, highlighting that different mental health challenges can be viewed differently by students.

However, underpinning this theory is the presence of learner characteristics which can impact the level of stigma reduction that can occur in the form of supporting or challenging factors. The literature uncovered higher rates of empathy in students who had a previous experience and lower apprehensiveness about engaging in experiential learning within mental health setting. Some studies highlighted the complex nature of reducing stigma, citing the impact of societal and cultural values [48, 107, 119], gender [47, 115], age [56, 113] and the previous personal experiences of students [48, 70, 71, 102, 103, 113] to be an influencing factor in how successful the intervention will be [48, 60, 65, 71, 78, 119, 120]. Challenging and supporting factors relating to learner characteristics can be viewed in Fig. 5.

Longitudinal and integrated learning

The opportunity to review the foundational knowledge on mental health was essential to building on mental health literacy [47, 50, 52, 62, 84, 88, 91, 94, 107, 112, 121–127]. This PT was present among all conceptual buckets. The literature found that students appreciated getting opportunities to scaffold knowledge throughout the curricula [47, 52, 122, 126]. This was backed up by

student members of the stakeholder group who appreciated getting the opportunity to undertake training courses in mental health which were paced at an introductory level. The scaffolding of mental health literacy was seen as essential to enabling students to then be able to add contextual and complex knowledge to their foundation mental health literacy by integrating core mental health literacy knowledge with more complex scenarios such as dual diagnoses [77] and social inequalities [75, 98].

In addition to this, there was an emphasis in the literature on the importance of the opportunity to practice skills more than once [61, 79, 80]. Some studies reported that there was a lack of confidence when students were assessed for their behaviour and skills in simulated settings [54, 61]. It was reported in the literature that repeated opportunities to practice skills would empower students to feel more confident in providing mental health support in simulated sessions and in practice [54, 61].

Diversity of experiential and community engaged learning

Comprehensive education about mental health means that students have access to a variety of experiential and PPI learning opportunities throughout the curricula. This necessitates a strong community partnership in order to facilitate these learning experiences. Throughout the literature on experiential learning and direct contact approaches, relationships with external organisations and communities were essential to enabling these educational approaches to happen. These collaborations involved a wide range of partnerships, such as clinical sites [70, 87, 100, 102, 103, 109–112] and community groups [42, 68, 94, 95, 97, 99, 101, 105–107]. Mental health education involves the participation of many different stakeholders and it is imperative for institutions to collaborate with both clinical and community organisations in order to enhance the richness of experiential learning. This is beneficial for all students to have a range of different experiences with patients at different levels of recovery. Students within the literature who had previous experiences with supporting someone through a mental health challenge were more engaged in the learning, so implementing experiential learning activities could support better educational outcomes for mental health.

Some studies that focused on student volunteering in community settings as part of the curriculum showed that when students are given opportunities to interact with patients at an equal level, i.e. not as a health profession student in training but as a volunteer, they developed advanced skills due to the level of responsibility placed on them in these settings [68, 94, 97, 99–102, 104–107]. This means that students are enabled to develop more complex knowledge building on their skills over the curricula.

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Table 6 Included study characteristics

Author	Year	Country	Study design	MH focus	T and L approach	Setting	Profession	Learner characteristic	Outcomes
Atienza Carbonell, B	2022	Spain	QUANT survey	Stigma	PPI	university	junior med	Gender	Stigma reduction
Bamgbade, B	2016	USA	Quant eval	Depression, psychosis,	Videos, dialogic learning, active learning exercises, didactic theory	university	intermediate pharm		Willingness
Bamgbade, B	2017	USA	Quant eval	Depression psychosis	Videos, dialogic learning, active learning exercises, didactic theory	university	intermediate pharm	Gender	Stigma reduction, willingness
Bharathy, A	2015	Malaysia	Qual focus group	Stigma	Contact based education, community engaged learning	community	senior med		Stigma reduction
Bock. P	2022	USA	Quant eval	General mental illnesses	Creative approach - film,	university	intermediate pharm		MHL, stigma reduction
bonnin, R	2021	USA	Mixed methods	Suicide	Integrated curriculum	university	junior med		MHL, perceived importance
Boukouvalas, E	2018	Australia	Quant survey	General mental illnesses	MHFA (didactic, vignette, active learning, group discussions) simulation	university	senior pharm	Nationality, cultural values, personal or professional experiences of suicidality	Stigma reduction, MHL
Brondani, M	2021	Canada	Qual reflection	Addiction	Didactic, vignette, dialogic, reflective	university	dental MIXED		Stigma reduction, MHL
Brown, R	2015	USA	Qual eval	General mental illnesses	Didactic, dialogic, ppi, reflective	university	junior med		Stigma reduction
Cates. M	2019	USA	Quant survey	General mental illnesses	Creative - film, active learning exercise	university	intermediate pharm		MHL, stigma reduction
Dean, T	2020	USA	Quant survey	Depression	Didactic, guest lecturer, patient educator, case studies, proctor	university	intermediate pharm		Confidence
Downs, S	2023	UK	Quant survey	Serious mental illnesses	Simulation	university	intermediate paramedic		Confidence

Table 6 (continued)

Author	Year	Country	Study design	MH focus	T and L approach	Setting	Profession	Learner characteristic	Outcomes
Dulellari	2022	USA	Quant survey	General mental illnesses	MHFAusa	university	MIXED		This can support students to develop appropriate knowledge for their future practice
El-Den, S	2016	Australia	Qual eval	Depression	Simulation	university	senior pharm		Confidence
Feeley	2016	USA	Quant survey	Addiction	Didactic, PPI experiential (placement)	hybrid	intermediate med	Previous experiences	Motivation, improved patient care, MHL.
Fernandez, A	2016	Malaysia	Quant rct	Serious mental illnesses, stigma,	Didactic, PPI, video	university	junior med		Reduced stigma and social distancing
Frick, A	2021	USA	Quant survey	General mental illnesses	MHFA USA − 8 h, vignettes, group discussion, role play scenarios	university	intermediate pharm		Reduce stigma, MHL, care quality.
Hassoulas. A	2017	UK	Quant eval	Depression, psychosis, stigma	Case based learning, experiential- placement, MSE practical, small group discussion	hybrid	junior med		Mhl
Hostetter, K	2022	USA	Mixed methods	Addiction	Experiential	clinic	intermediate med		Develops motivation, confidence
Jarvi, A	2020	USA	Quant survey	Addiction	Didactic, community engaged learning, reflection	hybrid	intermediate pharm		Research shows similar outcomes whether education is online or in person
Keating, D	2019	Ireland	Qual eval	General mental illnesses	PPI, experiential learning	hospital	senior pharm	Apprehension and previous experience	Reduced stigma and social distancing (?) Motivation and reduced stigma
Lizer, M	2016	USA	Quant survey	Stigma, general mental illness	Experiential, peer to peer, PPI, art based, dialogic,	university	intermediate pharm		Deeper MHL, reducing stigma
Loera, L	2023	USA	Quant survey	Addiction	Experiential	hybrid	senior pharm		Confidence with different presentations of mental health.
Ma, H	2020	Taiwan	Quant survey	Stigma	Didactic, dialogic, art based, experiential, practice	university	occupational therapy		Reduction stigma

Table 6 (continued)

Author	Year	Country	Study design	MH focus	T and L approach	Setting	Profession	Learner characteristic	Outcomes
McLaughlin, J	2017	USA	Quant survey	Stigma	Experiential	university and clinic	intermediate pharm		Decreased social distancing, motivation and confidence in providing support to people with mental health challenges
Monteiro, K	2017	USA	Quant eval	Addiction	Interprofessional, case based learning, PPI,	university	Interprofessional		Learning outcomes are richer, team development skills
Newman, J	2019	Australia	Qual eval	Psychosis	PPI	university	social work		Enrichening students understandings of mental health challenges., reflective
O'Reilly, C	2019	Australia	Qual eval	Suicide	Simulation	university	senior pharm		Skill development, confidence,
Pandhi, N	2020	USA	Quant survey	Depression	Dialogic, self- paced online	university	intermediate med		Preparedness for professional practice
Peyre, H	2021		Quant survey	Suicide	Simulation	university	junior med		Which helps improve the quality of the communication between student and patient
Pittenger, A	2019	USA	Mixed methods	General mental illnesses	Peer led teaching, simulation, compentency based learning	university	intermediate pharm		MHL, adaptable, complexity
Player, E	2019	UK	Mixed methods	Addiction	PPI	university	senior med		Improved patient care, authenticity, complexity, communication skills, reduced stigma
Pothireddy, N	2022	USA	Quant survey	Suicide	Didactic, video, role play	university	intermediate pharm		Increasing knowledge, confidence and mental health communication and referral behaviour

Table 6 (continued)

Author	Year	Country	Study design	MH focus	T and L approach	Setting	Profession	Learner characteristic	Outcomes
Potts, L	2022	England, Nigeria, South Africa, Spain, Tunisia, Hungary, Czech Republic, France, Italy, Brazil	Quant survey	Stigma	Dialogic, placement	clinic	mixed		Reduced anxiety and greater empathy can promote more therapeutic optimism
Prosser, M	2021	Somaliland and UK	Qual focus	Cultural competency	Reflective, case based learning	online	senior med		Intercultural skills and competencies
Rikard-bell, C	2018	Australia	Quant survey	General mental illnesses	Year 2 human development and behaviour module:	hybrid	junior med	Age, prior experience	Students who do not feel fully prepared
Silvia, R	2020	USA	Qual eval	Addiction	Creative - music, reflections	university	not specified pharm		Empathy, MHL
Skoy, E	2015	USA	Mixed methods	Psychosis	Simulation	university	intermediate pharm		Improved empathy
Sun, A	2022	USA	Quant survey	Addiction	Online, didactic, art based, experiential,	hybrid	intermediate med		Prepared health professionals, reduction of stigma, MHL, skill development, quality of care

Theories not carried over

There are some theories that were a feature of the IPT, which did not carry over to the PT. This is because there was a lack of evidence for these in the literature.

Safe learning environment

Whilst this theory featured heavily within the IPT, the literature did not mention this aspect of the education initiatives. This could be an overlooked aspect of delivering mental health education, and a hidden mechanism which might be more apparent in future studies evaluating mental health education. This was a theory put forward by student stakeholders, and as none of the studies included in the review were participatory studies with health profession students, this could explain why it is not currently a known mechanism of action for mental health education. Studies on important factors of mental health education for health profession students might explore this theory in more detail.

Logistics

Whilst logistics was a key topic among stakeholders, it did not feature as heavily within the literature. During IPT development aspects of logistics such as online vs. in person education, placement of mental health education and certification of training were discussed. However, within the final PT, it was evident that these are less important factors and that it is more important to ensure that mental health education is integrated across a curriculum, rather than strategically placed well once within a curriculum. Because of this, this theory was not carried over.

Discussion

The results of this study corroborate the findings of Samarasekera [128] who found that narrative medicine approaches such as the use of patient educators are more impactful for increasing empathy than traditional methods of teaching and learning. Our study provides an additional layer of understanding by illustrating the mechanisms through which this strategy works by increasing empathy and deconstructing student and patient hierarchical roles.

Furthermore, Allports intergroup contact theory offers a theoretical basis for understanding these results. According to Allport, direct contact between groups can

Table 7 ICAMO configurations

ICAMO	Conceptual bucket	Source	Item code
All health profession students (A) regard patient speakers highly (C). When students have the opportunity to listen to a patient speaker tell their story (I), and this presentation is adapted to the students future role identity, this provides students with opportunities to consider their own attitudes, reflect on the importance of compassionate patient centred care for their future practice (M), and this supports students to integrate more positive attitudes and recovery focused, non-paternalistic approach towards people with mental illness, and develop a willingness, confidence and comfort in supporting these patients (O). This can be provided as a video testimony or as an in person didactic lecture.	Narrative medicine	(64–66, 69–78, 114–118)	a
Integrating an already existing programme into curricula provides curriculum designers (I) with mental health education programmes that are already evidence based and reduces labour of designing a programme from scratch(C). These programmes when integrated as they are, improve students mental health literacy, provide some students with increased positive attitudes and support students with developing confidence in mental health skillsets (M)– however many students self-report increases in confidence but when behaviours are assessed, the increase in confidence does not translate into essential mental health communication skills. Those with previous personal experiences appear to be more motivated and engaged with the training. These training programmes can be adapted to the health profession students (A) utilising common education approaches such as simulation, to greater integrate essential role knowledge and enhance outcomes (o).	Integrated training programmes	(47–68)	b
When simulation is utilised as a learning strategy (I) and is a core component with lived experience simulated patients or actors (c), students can practice mental health competencies in a realistic and risk free environment. This provides students with opportunities to practice utilising core communication frameworks, engage with lived experienced simulated patients or actors (M). This is authentic for students, allows them to practice challenging encounters, develop their professional role identity in mental health and show their mental health literacy skills. This results in improvements in empathy, confidence, whilst also helping to develop adaptable and collaborative health professionals (0) Continued opportunities to practice these skills will support long lasting improvements in confidence.	Involving patients and public within assessment	(49, 75, 78, 79, 81–84, 86, 87)	c
Experience during the curricula within an acute clinical environment, as either an elective or core component of a curriculum (I) can support students at a more senior level (A) to be exposed to more acute presentations of mental illness. However, it is most effective when there are multiple opportunities across a curricula to engage with this patient population, across a variety of clinical settings (C), due to inconsistencies of exposure within some clinical environments and importance of meeting patients at different stages of recovery to prevent the development of therapeutic pessimism (M). When students get this diverse exposure, it allows them to develop an understanding of their role in mental health and build upon this literacy and skills throughout the curricula. This could positively impact future patient care through the scaffolding of skills throughout the undergraduate curriculum (o)	Clinical placements	(70, 87, 95, 100, 103, 109–113)	d
Students who have the opportunity to engage with people with mental health challenges outside of the context of educational and clinical spaces (C) are enabled to collaborate and support people in a recovery focused approach, and reframe the hierarchy of patient vs. health professional/student. When students are given the opportunity to have repeated contact with this population (I), and this contact is supported by the college/institution, this can support the sustainability of external relationships with community organisations and healthcare providers which can augment the learning goals of the health profession curricula (M). This results in students increased problem solving skills, developing a contextual mental health literacy, developing their confidence, and developing pro-active and adaptable health profession students in the area of mental health practice (o)	Community engaged learning	(42, 68, 94, 97, 99–108)	e
Creative approaches such as the use of film, simulated games, artwork and books (I)can support students across stages (a). Utilising creative approaches within a curricula (C) can augment the learning from traditional approaches and develop student awareness of the holistic nature of different mental health conditions, such as barriers to care, impact on family members (M) and helps evoke more emotional responses in students which can help de-stigmatise mental health difficulties (o).	Creative approaches	(64, 73, 88–94)	f
Case based learning (I) is a useful teaching strategy to introduce mental health topics (C), build upon previous knowledge and ensure that students are familiar and confident with the basic knowledge and test their ability to incorporate this knowledge into more complex scenarios (M). It can be utilised at any stage in the curricula (A) and also within interprofessional learning to promote collaborative skills among students. CBL gives students the opportunity to develop their role identity in mental health, develop problem solving skills with others and enhance their competencies in mental health (O).	Case based learning	(66, 71, 75, 92, 95–98)	g
Health professionals work alongside each other in practice (C) so incorporating interprofessional learning opportunities (I) at undergraduate level enable students to appreciate the knowledge and expertise of other professions which can help develop their own role identity (M). This enables students to practice collaborative decision making, deepen their mental health literacy and scaffold upon core learning (o).	Interprofessional learning	(71, 82, 92, 96, 104, 106, 110)	h
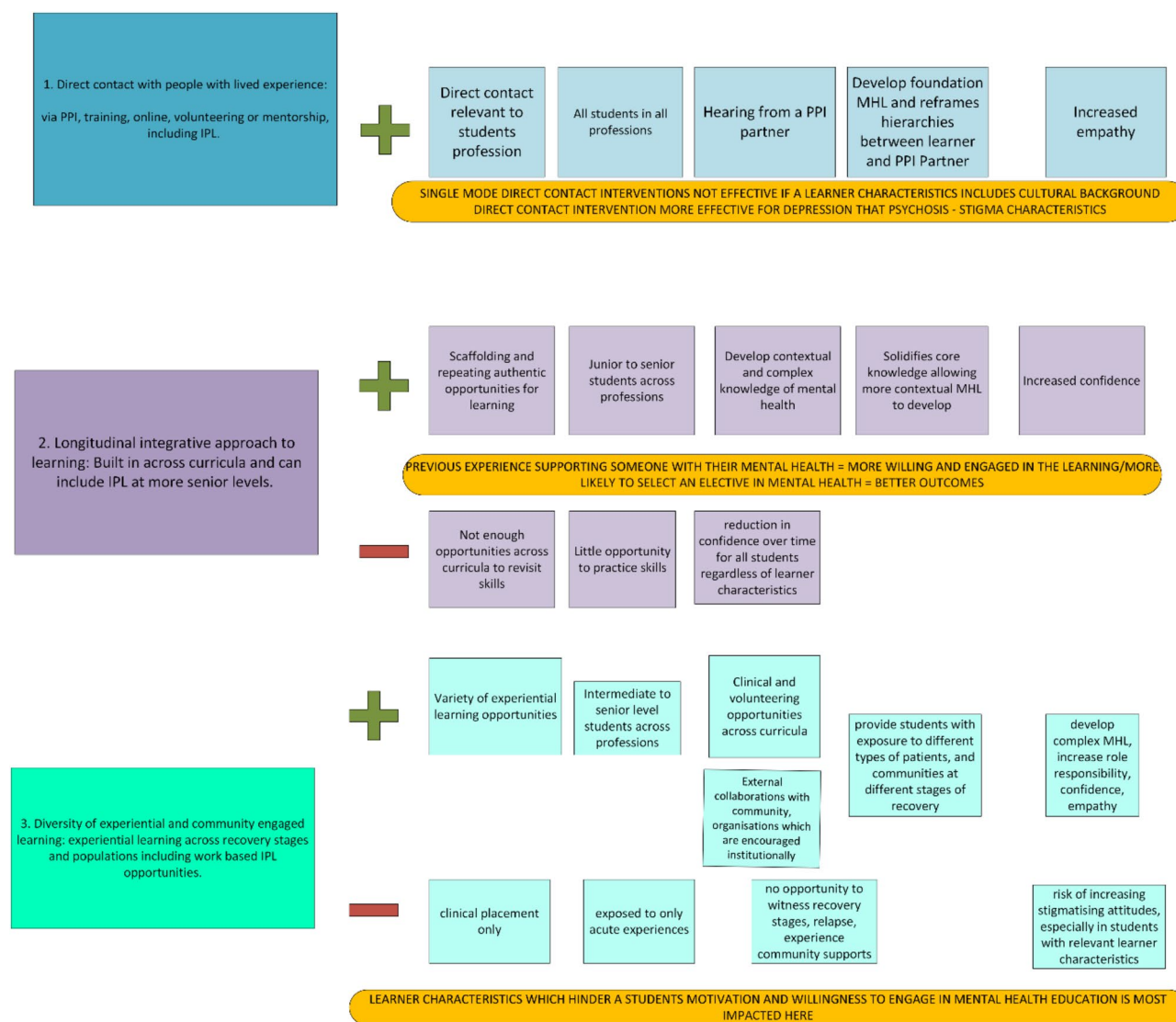
Fig. 3 ICAMO of programme theories

reduce prejudice and stigma when certain conditions are met such as equal status, common goals and institutional support. Our results show that when these conditions are created within educational settings, the benefits of direct contact are maximised.

However, it is clear from the literature that reducing mental health stigma amongst health profession students is complex. Even when these mechanisms are in place, there are learner characteristics which can facilitate or hinder the outcomes. This includes learner characteristics such as culture, age, previous personal experience and gender. For example, this means that exposing some students to acute psychiatric settings before they have had the chance to unlearn certain stigmatising views may do more harm than good. Previous studies show that only being exposed to acute mental illness can sometimes cause therapeutic pessimism [129]; a concept where

students are pessimistic about the recovery of a patient, due to only being exposed to the most acute stages of mental illness [129]. Thus, it is essential that students have opportunities to meet patients at different stages of recovery to enable them to develop a recovery focused approach to mental health care and authentic learning experiences. This review finds that such opportunities appear to be most beneficial within community engaged learning where students can engage with patients outside of clinical responsibilities and engage in positive, fun activities with patients.

PPI in education was a common thread throughout this review, emphasising the shift in paradigm from the expertise of the professional to the involvement of patients and people with lived experiences [130, 131]. However, many of these interventions only included PPI in the form of a once off in-person session with students.
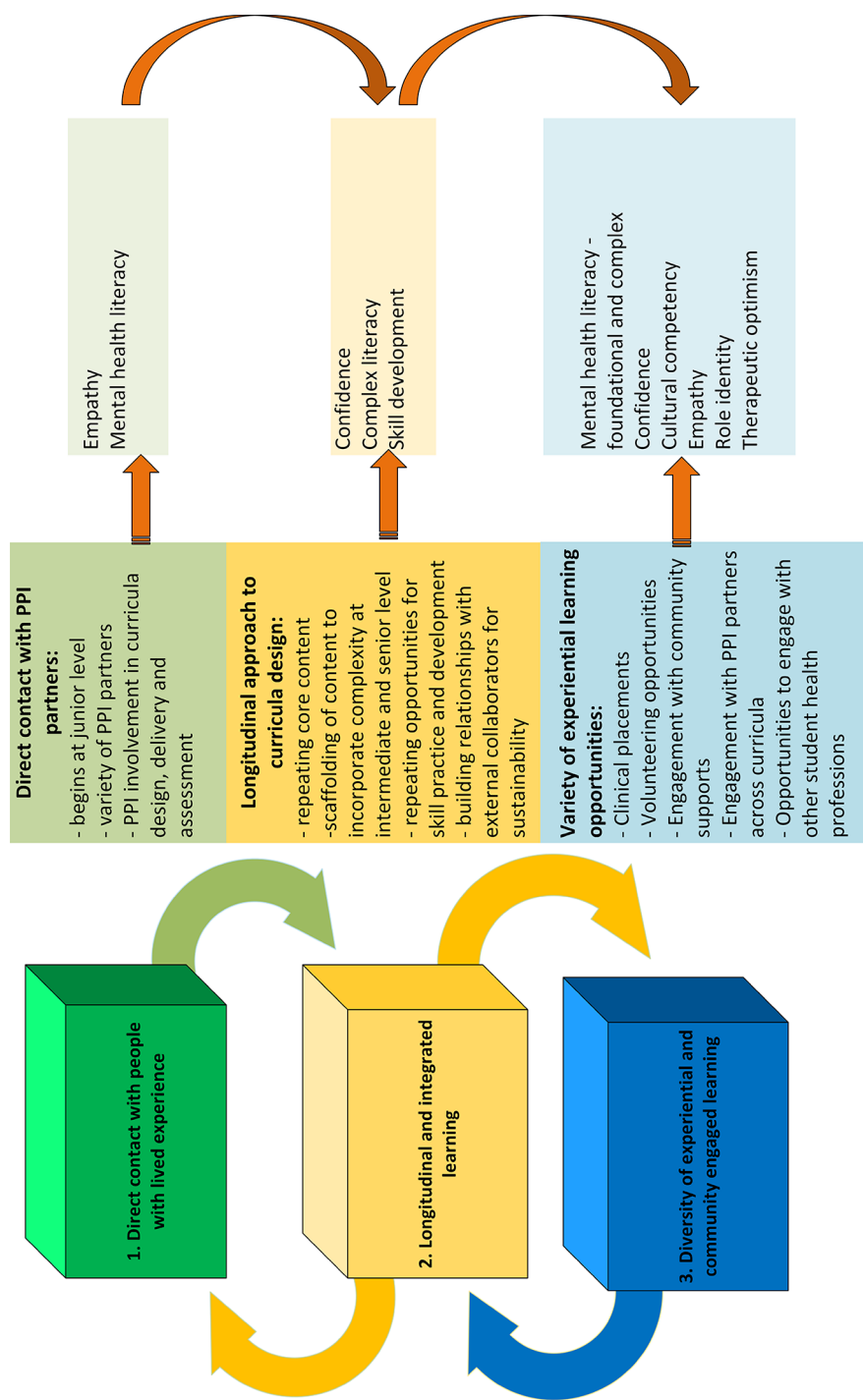
Fig. 4 Programme theory explained

Fig. 5 Learner characteristics

There was a lack of studies that incorporated more long-term engagements between students and PPI partners, such as mentorships. Where longer-term engagements were found, such as in volunteering opportunities, there appeared to be greater impact for students' awareness and understanding of the holistic nature of mental health challenges. The literature on PPI within health professionals education shows that there is a need for more sustainably planned and structured PPI in order to build a culture of PPI best practice [132].

Because most of the studies included in this realist review were either once off interventions, or did not study the outcomes longer than 6 months post intervention. This means that we cannot be sure of the long-term impacts, positive or negative of these interventions and if the increases in empathy, understanding and reduced stigma actually continues once the student is in professional practice. We echo recent calls for longitudinal training and evaluation of this to find out the impact on student outcomes [133].

Future research must explore how PPI partners, community organisations and institutions experience their involvement in the education design, delivery and assessment and develop recommendations could support greater integration into curricula.

Conclusion
This study identified three critical program theories for enhancing mental health education for health students: [1] direct contact with individuals with lived experience [2], longitudinal and integrative learning approach, and [3] diversity of experiential and community-engaged learning. These theories offer a framework for developing more effective and meaningful curricula in mental health education.

The results suggest that integrating these theories into health education curricula may lead to professionals better prepared to address mental health challenges. Educational institutions and policymakers should consider implementing programs that incorporate these approaches.

However, this study also presents some limitations, such as the relatively small sample size and the heterogeneity of included studies. Future research should investigate the effectiveness of these program theories in different contexts and with different groups of students, as well as explore how these approaches can be implemented effectively and sustainably in health education curricula.

This study contributes in advancing our understanding of how to provide impactful mental health education for health profession students. This research offers concrete insights for educators, researchers and policy-makers. Education which has implemented these programme theories has the potential to transform mental health education and subsequently improve the quality of care provided to people with mental health challenges.

Continued research and collaboration with stakeholders, including public and patient involvement, are essential to refining and expanding these educational strategies to meet the evolving needs of the healthcare sector. Further research could explore the perspectives of PPI partners, community partners and institutional organisations in being involved in mental health education.

These final programme theories were developed with support from both a stakeholder and PPI panel who helped provide context and meaning to the themes arising within the literature and IPT. Developing the programme theory refinement with PPI panel members taking a leading role in this process worked well, and permitted a more democratic process to the research.

Supplementary Information

The online version contains supplementary material available at https://doi.org/10.1186/s12909-025-07222-7.

Supplementary Material 1

Supplementary Material 2

Supplementary Material 3

Data availability
Data is provided within the manuscript or supplementary information files.

Declarations

Ethics
Ethical approval has been sought and approved by Royal College of Surgeons, Ireland Ethical Committee (REC number: 212622783). PPI is reported in this article as per GRIPP2 short form requirements [134].

Consent for publication
Agree.

Competing interests
The authors declare no competing interests.

Clinical trial number
Not applicable.

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