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What works for whom, how and why in mental health education for undergraduate health profession students? A realist synthesis protocol. [Protocol]

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BMJ Open What works for whom, how and why in mental health education for undergraduate health profession students? A realist synthesis protocol

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ABSTRACT

Introduction It has been shown that mental health education can support positive attitudes of health profession students towards people with mental health challenges, which supports them to provide optimal healthcare to this group. There are many different approaches to designing and delivering mental health education to health profession students. Each has their own advantages and disadvantages, and often mental health education programmes incorporate a multimodal approach in order to reap the benefits of a variety of teaching and learning approaches. 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. We will examine the features of successful outcomes for health profession students for:

- Learning environment.
- Knowledge development and retention.
- Confidence.
- Motivation.
- Preparedness for professional practice.

Methods For this, a realist synthesis has been chosen in order to review the literature. Realist synthesis lends itself to the review of complex interventions such as mental health education for undergraduate health profession curricula because it seeks to uncover the range of different mechanisms and context configurations that produce different outcomes. Health profession education and education practice, in general, is complex. A patient and public involvement (PPI) group is involved throughout this study and includes undergraduate health profession students, and members of the St John of Gods Hospital Consumers and Carers Council who are involved at every stage of the research. This study will engage with a stakeholder group who will support the refining of the programme theory.

Ethics and dissemination Ethical approval has been sought and approved by Royal College of Surgeons, Ireland Ethical Committee (REC number: 212622783). We will aim to write up and publish the full synthesis as a journal article. We will also discuss ways of dissemination outside of academia with our PPI group.

STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ We will include a stakeholder group who will support the research team to refine the programme theory multiple times in the synthesis process.
- ⇒ A patient and public involvement research advisory team will also be involved in every step of this research.
- ⇒ The researchers are involved in the mental health education of health profession students and are aware of bias that may arise during the study; however we have attempted to alleviate this through the involvement of the stakeholder group.

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.

Description

Within Europe, it is estimated that one in five people will experience depression during their lifetime.¹ The additional impact of the COVID-19 pandemic saw conditions such as depression and anxiety rise by nearly 25% in the first year of the pandemic.^{2,3} Furthermore, health profession students appear to have higher rates of mental health challenges than those studying for other degrees.^{3,4} Mental health education for health professionals is a global priority.^{4,5} Health profession students need mental health literacy in order to be prepared to support people with mental health challenges in their profession.^{4,5} Thus, education around mental health and

conditions is vastly needed in our communities and for health profession students in particular, so that our health professions can learn how to better support themselves, and each other. Additionally, some studies cite that mental health education within health profession curricula needs to address stigma towards those within mental health challenges.^{6,7}

TEACHING AND LEARNING APPROACHES

Inter-professional learning

Interprofessional learning (IPL) refers to the process of educating emerging professionals for competent multi-disciplinary clinical practice.⁸ Studies show that IPL focused learning experiences extended health profession students' knowledge and understanding of their own and other disciplines' expertise.⁸ IPL can also include other approaches within it, such as PPI, experiential learning and didactic learning.⁹ IPL has also shown to decrease mental illness stigma among health profession students.¹⁰ Another study examining a suicide prevention IPL between mental health nursing students and pharmacy students showed that it can improve preparedness to respond to someone experiencing thoughts of suicide.¹¹ A review of IPL within health profession education also showed that health profession students have a positive attitude towards IPL, and value the collaborative nature of IPL activities as part of their education.¹² IPL has also shown to help improve communication skills,¹³ which is a core competency for health professions.¹⁴

Case-based learning

Case-based learning (CBL) is a teaching tool used in a variety of medical fields using human cases to impart relevance, aid in connecting theory to practice¹⁵ and develop analytic and diagnostic skills.¹⁶ In CBL, learners are presented with a clinical problem and have time to struggle, define and resolve the problem.¹⁵ It can support health profession students to develop a collaborative, team-based approach to their education.¹⁷

Experiential learning

This approach to learning originated first with Kolb, who stated that learning is best conceived as a process rather than in terms of outcomes.¹⁸ Kolb's approach was taken from Lewin, Dewey and Piaget who Kolb consider to be the founding fathers of experiential learning.¹⁹ Kolb's learning cycle is considered to be the theoretical foundation of experiential learning: (a) concrete experience where the learner participates in an experience such as a simulation, (b) reflective observation where the learner reflects on the experience, (c) abstract conceptualisation where the learner considers thoughts and reflections to identify the significance of the learning experience and considers what may have been done differently to enhance the outcome and (d) active experimentation which involves using what was learnt to direct future practice.¹⁹ This approach has been used in health profession

education in areas of simulation,^{20–23} IPL,^{20 24 25} student visits to patient care facilities²⁶ and through peer-assisted learning.²⁷ Experiential learning has shown to improve cultural competency,²⁸ professional identity development²⁸ and develop learning experiences which are authentic and interactive.²¹

Simulation, which is an approach to experiential learning, offers health profession students an opportunity to practice skills in a risk-free environment.²⁹ It has been embedded across a range of health profession education both as learning and assessment tools³⁰ and to teach suicide risk assessment to health profession students.³¹

Public and patient involvement

Education that is led and designed by those who have personal experiences with different health conditions and disabilities has shown promise for a variety of different health profession students and health professions.^{32 33} Lived experience involvement has an important role to play in the mental health education of health profession students in addressing fears and demystifying the experience of mental illness.³⁴

Didactic teaching

Didactic instruction is a teacher-centred model of education, traditionally in the form of lecture-based education where the focus is on the instructor and the content being imparted.³⁵ It is a monologic approach to imparting knowledge through communication geared towards the instructors' goals.³⁶ Within health profession mental health education, didactic teaching and learning approaches have been used to teach pharmacological management of patient medications³⁷ and the pathology of mental illness.³⁸

Dialogic teaching

Dialogic teaching and learning is based on Vygotsky's theory of learning, where it is posited that talking is the key to learning.³⁶ It can be viewed as a binary opposite to didactic teaching in that it promotes student engagement and interaction with the learning material. Studies on the impact of dialogic teaching have shown that students engaged in dialogic teaching methods appear to learn material quicker than those only engaged with didactic teaching methods.³⁹

Competency-based education

This approach to teaching and learning can be recognised as a form of outcome-based education.⁴⁰ Competency-based education (CBE) encompasses focusing on outcomes, emphasising abilities, de-emphasising time-based training and promoting greater learner centredness.⁴⁰ Competencies are considered to be abilities or capabilities which are the organising units of any CBE. Where other forms of teaching and learning might start with questions around knowledge, CBE starts with questions of ability and skill development,⁴⁰ thereby working backwards rather than forwards.

Multimodal approaches to mental health education

Many of the approaches to teaching and learning are often combined within modules or programmes, this has been shown to better incorporate the benefits of different teaching and learning approaches⁴¹ such as developing the empathy of health profession students⁴² and practising skill development.²⁹

Mental Health First Aid

One example of a mental health education programme, which uses multimodal approach, is Mental Health First Aid (MHFA). MHFA is an early intervention educational programme, which teaches people how to assist someone who is developing a mental health problem or in a mental health crisis.⁴³ It was first developed in Australia, to educate the lay public on how to respond to someone in crisis or in mental health distress.⁴³ This training approach and content is based on the model of physical first aid, a widely accepted training for physical health difficulties and crisis.⁴³ There have been many studies examining the impact of MHFA training on pharmacy, physiotherapy, nursing and medical students and the results are promising. Health profession students and professions who have been MHFA trained report feeling more prepared and confident to have a discussion with patients around their mental health⁴⁴ developed their mental health literacy⁴⁵ and increased helping behaviours.⁴⁶ Embedding mental health programmes into health professions curriculum, like MHFA, has also shown to provide students with more confidence and willingness to support their colleagues and friends with their mental health.⁴⁷

METHODS AND ANALYSIS

Philosophy

Realism is located between positivist and constructivist accounts of science.⁴⁸ A realist review asks ‘what works, for whom, in what circumstances, in what respects, to what extent and why?’⁴⁹ Realist research explores the links between contextual factors and the processes or mechanisms these trigger, to explain why and how different outcomes have been achieved. This is known as the context, mechanism and outcomes configuration (CMOC).⁴⁹ The ontological core of realism is that the real, whether that is physical or social, exists independently of our knowledge of it;⁵⁰ however, we can come to know them by observing sequences of events and identifying the mechanisms which give rise to different outcomes.⁵⁰

Realist research is theory driven, with the unit of analysis being the programme theory rather than programme activities.⁴⁸ In realist research, the programme is seen as a dynamic mini-system within a larger complex social world.⁵⁰ The enquiry of the research is to build and then test an account, or accounts, of how and why an intervention works.⁵⁰

When reporting on this realist synthesis, we shall follow the steps outlined in RAMESES (Realist and

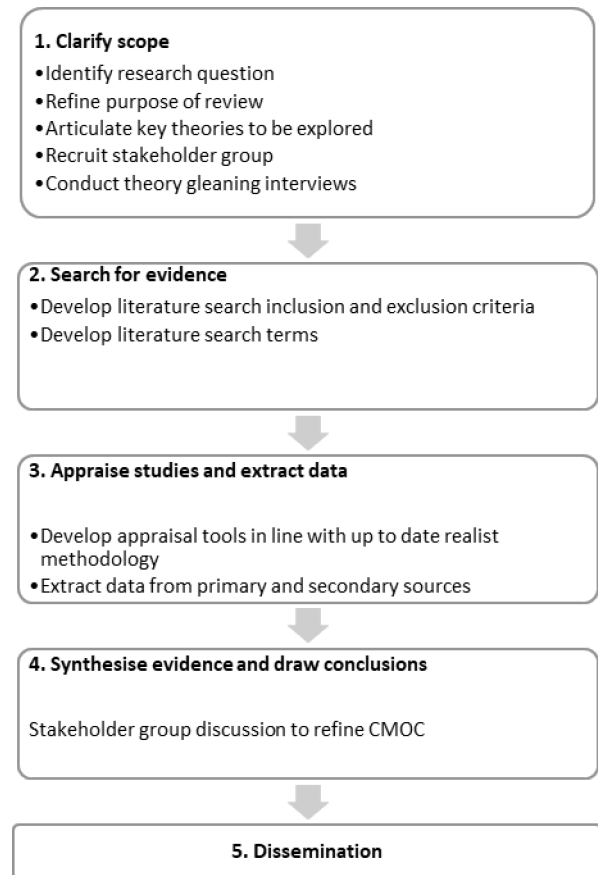


Figure 1 Flowchart. CMOC, context, mechanism and outcomes configuration.

MEta-Narrative Evidence Syntheses: Evolving Standards) guide for meta-narrative synthesis.⁵¹

Review phases

The review will follow the following steps as per RAMESES guidelines for realist review.⁵¹ The full review phase steps can be viewed in online supplemental file 1; [figure 1](#), and are discussed in more depth in the following sections.

Step 1: clarify scope

Identify research question

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 that produce different outcomes?
3. What are the different theories which can help explain how and for whom the identified mental health education approaches work and why?

Refine purpose of review

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. We will examine the features of successful outcomes for health profession students in the areas of:

- Learning environment.
- Knowledge development and retention.
- Confidence.
- Motivation.
- Preparedness for professional practice.

Recruit stakeholder group: in realist research, the assumptions and expectations of the programme designers and implementers are usually explored.^{49 52} In this research, we will recruit a stakeholder group. Members include: MHFA Ireland staff and instructors; mental health researchers; Masters of Pharmacy students enrolled in Royal College of Surgeons, Ireland (RCSI); RCSI student support and education welfare staff; and those who have lived experience of mental health challenges (or carers of people with lived experience). In realist terminology, these stakeholders are known as programme actors. To obtain information from these programme actors, it is suggested to use multimethod data collection and analysis approaches.⁵² We have opted to conduct theory gleaning/refining interviews in conjunction with the research team knowledge on education and mental health in order to develop the initial programme theory.

Articulate key theories to be explored: through the process of engaging with the research teams' knowledge, the following initial theories have been identified in advance of interviews with the stakeholder group:

- *Kirkpatrick hierarchy model:* this model is the most widely used model for evaluating training effectiveness.⁵³ It contains four stages of impact, from the student, to beneficiaries, to wider societal change.⁵⁴ These stages are
 1. Participation.
 2. Modification of attitudes/perceptions and attitudes.
 3. Behaviour change.
 4. Benefit to patients/clients.⁵⁴

This theory might be relevant and useful to use when considering the different outcomes of certain mental health education approaches and programmes within undergraduate health profession education.

- *Kolb reflective (experiential) learning cycle:* this theory posits that knowledge is created through the transformation of experience.⁵⁵ Kolb's learning cycle composes four stages, namely concrete experience, reflective observation, abstract conceptualisation and active experimentation.⁵⁶

This theory is particularly useful to guide thinking when applied to experiential learning approaches.

- *Newble and Entwistle learning styles theory:* this theory posits that different learners have different intrinsic motivations for learning, therefore, if teachers understand the learning styles of the student, they can better incorporate the teaching to create improved learning outcomes.⁵⁷ However, this theory has been criticised in the literature as having no scientific evidence behind

it.⁵⁸ This theory may be mentioned within the literature and so it is included as a potential theory at this stage.

- *Model of adult learning:* this theory concerns andragogical learning theory, which includes eight steps for planning adult learning experiences, which are:
 1. Preparing learners for the programme.
 2. Establishing a climate conducive to learning.
 3. Involving learners in mutual planning.
 4. Involving participants in diagnosing their learning needs.
 5. Involving learners in forming their learning objectives.
 6. Involving learners in designing learning plans.
 7. Helping learners carry out their learning plans.
 8. Involving learners in evaluating their learning outcomes.^{59 60}

This learner-centric theory may have relevance to the design and implementation of mental health education programmes.

- *Perspective transformation theory:* this theory posits that for adult learners, they have already developed a worldview and this creates a boundary around receiving and comprehending new information.⁶¹

This theory may have relevance for mental health education and how learners may receive new information about mental health when ideas and attitudes have already been formed about the topic.

- *Constructivist learning theory:* constructivism means that learners construct knowledge for themselves.⁶² Within this theory, the learner is considered an active participant of the learning experience and their own world experiences are an important aspect of how they will construct meaning from the new knowledge.⁶³ This theory may have importance when considering active approaches to learning such as experiential and inter-professional teaching and learning models.

- *Social theory of learning:* this theory considers how the learner is a member of their communities and society, and how they construct their identity in relation to those communities. It is focused on the premise of social participation and consider meaning, practice, identity and community as focal parts of developing knowledge.⁶⁴ This theory may be of interest in terms of health profession students and how they develop knowledge about mental health within professional and personal contexts.

- *Knaak and Pattern anti-stigma education model:* this is a theory which contains six ingredients for a successful education model, which decreases stigma about mental health.⁶⁵ These are recovery, multiple contact, setting the tone, personal testimony, skills training and myth busting.⁶⁶ The authors found that programmes which include all six approaches were more successful at improving attitudes towards people with mental health challenges.⁶⁶

This theory might have relevance when considering the promotion of positive helping behaviours towards people experiencing mental health challenges.

– *Corrigan attribution theory*: this theory states that when people consider someone to not be at fault for their position (in this case, mental illness or challenges), they have more positive attitudes towards them, and are more likely to have a helping response to the person.⁶⁷

This theory may have relevance for mental health education and how experiences of mental health challenges are presented to learners.

Theory gleaning interviews: in order to refine the initial programme theories, key stakeholders will be interviewed to glean programme information. Theory gleaning interviews are a specific type of realist interview, which function to uncover a programme story.⁶⁸ Questions will be focused in order to ascertain how the key informants consider the programme working, for whom and in what circumstances.⁶⁸ Each set of stakeholders will have a different set of questions in order to focus on their particular set of knowledge and experiences, we have divided the stakeholder group into three categories: subject, practitioner and evaluator, in line with realist theory.⁴⁹ This interview method is applied to glean information on the programme modalities, important context conditions, mechanisms provided and/or triggered by the programme and the potential outcomes of the programme that could be used to formulate the initial programme theory.⁵² Interviews will be designed around the initial thoughts of the research team of the potential programme theories, and interviews will be approached using conceptual focusing in order to elicit stories related to the CMOC.⁴⁹ Conceptual focusing is where the interviewer pays attention to explanatory passages in the interview that might form a potential programme theory. The interviewer checks this with the interviewee as to whether that programme theory may hold meaning for them, or not.⁴⁹

Step 2: search for evidence

Literature search strategy: the search strategy will be iterative and search terms shall initially be quite broad but may be narrowed down as the literature search process develops, which is the preferred approach in a realist review⁶⁹ as described in line 50 in online supplemental file 1.

The initial inclusion criteria are broad, we are including any article that is focused on mental health education for undergraduate health profession students, including all educational approaches, initiatives and evaluations. We are including studies in any language. We will initially exclude any article that does not reference mental health education for undergraduate health profession students. However, the inclusion criteria may expand to cover teaching and learning approaches more generally if it is necessary in order to support the theory building process of realist reviews.

We have identified a search strategy using the following databases: EMBASE, Medline, PsycInfo, CINAHL Complete, Cochrane and ERIC. The details on search strategy are provided in online supplemental file 2.

Hand searching, citation tracking forward and backwards may also be conducted throughout the review to search for more narrowly focused articles as the review progresses, in line with the realist approach to literature synthesis.⁶⁹ Grey literature will also be included by hand searching for specific articles such as unpublished analysis and evaluation about other approaches to mental health education for undergraduate health profession students.

Selection of papers: first, all papers will be screened by title and abstract in duplicate by ZM and JS. Each title and abstract will be reviewed using the inclusion and exclusion criteria to determine its suitability for the review. Papers will be excluded if they are not related to the mental health education of health profession students. If there are any discrepancies, these will be discussed between the two reviewers and referred to a third member (DK), who will make the final judgement if necessary.

The papers accepted at this point will then proceed to the full-text retrieval. ZM, JS, DK and AK will review each paper independently and shall determine its suitability to be included in the review. Of these, 20% shall be double-screened by the reviewers (ZM, JS, DK and AK) in order to capture any potential discrepancies.

Step 3: appraise studies and extract data

Appraisal: studies will be appraised for relevance, richness and rigour, in line with the updated realist methodology for conducting realist reviews.⁷⁰ In a realist review, both the topic and the theory being tested are appraised for relevance,⁷¹ this closely mirrors the screening process used in other reviews by using the inclusion and exclusion criteria developed by the research team.⁷¹ Additionally, a recent revision to the appraisal step is to appraise for richness,^{71 72} this new step, added by Booth *et al*, is focused on appraising the conceptual and theoretical development, which explains how an intervention is expected to work. Appraising studies for this richness will ensure that only the sources that can meaningfully address the research question are included.⁷¹ Finally, in order to assess rigour, Pawson suggests that sample size, data collection technique, analysis methods and research claims should all be considered.⁷³

Data extraction: data from the theory gleaning interviews which relate to context, mechanisms and outcomes shall be highlighted within the pseudonymised transcripts and double-reviewed by the research team (ZM/AK). Data, which the team consider to be relevant and valuable to the programme theory development, will be extracted into an interview appraisal spreadsheet for analysis.

Data from the literature searches will be extracted into a data extraction form which will be developed by ZM in consultation with the team. To ensure the appraisal step accounts for relevance, richness and rigour, a spreadsheet will be created by ZM in line with recommendations from Dada *et al*⁷¹ and checked by research team. This will ensure that the appraisal of studies incorporates all three assessments of the data. The relevant text fragments which correspond to CMOC shall be coded and categorised as

**Table 1** Appraisal strategy adapted from Kerr *et al*⁷⁴ and Booth *et al*⁷²

Level	Description
High	Papers, which have high relevance to the realist synthesis. Research questions and aim are highly matched to the review questions. Findings are clearly described. 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.
Moderate	Papers, which are moderately relevant to the realist synthesis. The primary research is moderately matched to the review questions and theories. Findings may be described quite clearly, but with insufficient detail to be of high rigour or may be unclear described. Description of intervention, methods and participants may have some gaps. 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.
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 do 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.

CMOC, context, mechanism and outcomes configuration.

per table 1, which is a categorisation strategy taken from Kerr *et al*⁷⁴ and updated in line with more recent developments in realist synthesis appraisal⁷² to include a richness category.⁷⁴

This extraction form will include the following categories:

- ▶ Teaching and learning approach.
- ▶ Population.
- ▶ Setting.
- ▶ Study type.
- ▶ CMOC.
- ▶ Relevance, richness and rigour.

Audio-recorded data from the stakeholder group discussion which relates to refining or refuting the programme theories shall be highlighted within the pseudonymised transcript and reviewed by the research team, then moved into the appraisal spreadsheet, so that the CMOC can be adapted accordingly.

Step 4: synthesise evidence and draw conclusions

Stakeholder group discussion: once the realist synthesis has been conducted and programme theories have emerged through appraisal and analysis, it is recommended in realist research to bring these programme theories to a group of stakeholders.⁴⁹

The members of this stakeholder group will be the same people we will have conducted theory gleaning interviews with. This will be done after the literature has been synthesised and appraised, and when programme theories have been analysed by the research team. This shall be done with the stakeholders gathering to identify the most important and relevant statements among those brought forth to the stakeholder panel. The stakeholder group will be invited to provide feedback on the

programme theories identified in the literature and how they fit in relation to their experiences. The facilitator shall support participants to jointly discuss and resolve variances.

There are no prescriptive guidelines on best practice for stakeholder engagement in realist synthesis; therefore, we have planned this stage of research by looking to past realist research which has incorporated this method.^{75 76}

Step 5: ethics and dissemination

Ethics and dissemination: ethics has been approved by RCSI Research Ethics Committee (REC number: 212622783) to interview members of the stakeholder group and to hold a group discussion to support the refining of programme theory.

We will aim to write up and publish the full synthesis. We will also discuss ways of dissemination outside of academia with our PPI group and aim to disseminate findings to the lay public as well as writing an academic publication.

Public and patient involvement

Here, we provide details on the PPI approach that will be included in the research.

At what stage in the research process were patients/the public first involved in the research and how?

The PPI panel recruitment began at the beginning of the project and will remain involved throughout the review. Each member was recruited because of their link with RCSI as a student or through membership of St John of God's Hospital Consumer and Carers group. A research advisory group will be involved in this study in order to advise and collaborate with the research team on all aspects of the realist synthesis. This includes three

patient partners, and three undergraduate student representatives at RCSI.

How were the research question(s) and outcome measures developed and informed by their priorities, experience and preferences?

The PPI panel was involved in cocreating the language used around mental health in this study. It was agreed that ‘mental health challenges’ was the most appropriate and respectful language to use around mental health.

How were patients/the public involved in the design of this study?

The PPI panel will be involved in every step of this research study, from stakeholder facilitation of the stakeholder discussion group, to analysis and write-up.

How were they involved in the recruitment to and conduct of the study?

PPI panel recruitment was still ongoing when stakeholder recruitment began. PPI panel was not involved in the recruitment of stakeholders for this study.

Were they asked to assess the burden of the intervention and time required to participate in the research?

Yes. We have had a discussion with our PPI group on the tasks involved in this research and the time frame around their involvement. We also discussed extra ways to be involved in the research if they so wish.

How were (or will) they be involved in your plans to disseminate the study results to participants and relevant wider patient communities (eg, by choosing what information/results to share, when, and in what format)?

We will undertake a realist synthesis in which PPI and diverse stakeholder participation are embedded at every stage.

PPI in the project will be reported following the Guidance for Reporting Involvement of Patients and the Public² reporting checklist.

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Contributors ZM: initial protocol preparation, theory building and development. JS: overseeing protocol development, editing and revisions, overseeing methodology and theory development. DK: overseeing protocol editing and revisions, overseeing theory development. AK: providing guidance on methodology. AS: informatics specialist at RCSI, worked with the research team to develop the search strategy. All authors read and approved final manuscript.

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Competing interests None declared.

Patient and public involvement Patients and/or the public were involved in the design, or conduct, or reporting, or dissemination plans of this research. Refer to the Methods section for further details.

Patient consent for publication Not applicable.

Provenance and peer review Not commissioned; externally peer-reviewed.

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1 **RAMESES GUIDE FOR META-NARRATIVE REVIEWS:**

2

3 **TITLE**

4

5 **1**

6

7 In the title, identify the document as a meta-narrative review or synthesis

8

9 **ABSTRACT**

10

11

12 **2**

13

14 While acknowledging publication requirements and house style, abstracts should ideally contain
15 brief details of: the study's background, review question or objectives; search strategy; methods of
16 selection, appraisal, analysis and synthesis of sources; main results; and implications for practice.

17

18 **INTRODUCTION**

19

20

21 **3 Rationale for review**

22

23 Explain why the review is needed and what it is likely to contribute to existing understanding of the
24 topic area.

25

26 **4 Objectives and focus of review**

27

28 State the objective(s) of the review and/or the review question(s). Define and provide a rationale for
29 the focus of the review.

30

31 **METHODS**

32

1

33

34 5 Changes in the review process

35

36 Any changes made to the review process that was initially planned should be briefly described and
37 justified.

38

39 6 Rationale for using meta-narrative review

40

41 Explain why meta-narrative review was considered the most appropriate method to use.

42

43 7 Evidence of adherence to guiding principles of meta-narrative review

44

45 Where appropriate show how each of the six guiding principles (pragmatism, pluralism, historicity,
46 contestation, reflexivity and peer review) have been followed.

47

48 8 Scoping the literature

49

50 Describe and justify the initial process of exploratory scoping of literature.

51

52 9 Searching processes

53

54 While considering specific requirements of the journal or other publication outlet, state and provide
55 a rationale for how the iterative searching was done. Provide details on all the sources accessed for
56 information in the review. Where searching in electronic databases has taken place, the details
57 should include (for example) name of database, search terms, dates of coverage and date last
58 searched. If individuals familiar with the relevant literature and/or topic area were contacted,
59 indicate how they were identified and selected.

60

61 10 Selection and appraisal of documents

62

63 Explain how judgements were made about including and excluding data from documents, and justify
64 these.

65

66 11 Data extraction

2

67

68 Describe and explain which data or information were extracted from the included documents and
69 justify this selection.

70

71 12 Analysis and synthesis processes

72

73 Describe the analysis and synthesis processes in detail. This section should include information on
74 the constructs analysed and describe the analytic process.

75

76 RESULTS

77

78

79 13 Document flow diagram

80

81 Provide details on the number of documents assessed for eligibility and included in the review with
82 reasons for exclusion at each stage as well as an indication of their source of origin (for example,
83 from searching databases, reference lists and so on). You may consider using the example templates
84 (which are likely to need modification to suit the data) that are provided.

85

86 14 Document characteristics

87

88 Provide information on the characteristics of the documents included in the review.

89

90 15 Main findings

91

92 Present the key findings with a specific focus on theory building and testing.

93

94 DISCUSSION

95

96

97 16 Summary of findings

98

3

- 99 Summarise the main findings, taking into account the review's objective(s), research question(s),
100 focus and intended audience(s).
101
- 102 17 Strengths, limitations and future research
103
- 104 Discuss both the strengths of the review and its limitations. These should include (but need not be
105 restricted to) (a) consideration of all the steps in the review process and (b) comment on the overall
106 strength of evidence supporting the explanatory insights which emerged.
107
- 108 The limitations identified may point to areas where further work is needed.
109
- 110 18 Comparison with existing literature
111
- 112 Where applicable, compare and contrast the review's findings with the existing literature (for
113 example, other reviews) on the same topic.
114
- 115 19 Conclusion and Recommendations
116
- 117 List the main implications of the findings and place these in the context of other relevant literature.
118 If appropriate, offer recommendations for policy and practice.
119
- 120 20 Funding
121
- 122 Provide details of funding source (if any) for the review, the role played by the funder (if any) and
123 any conflicts of interests of the reviewers.

1. PsycInfo:

undergraduate* OR student* OR trainee* OR bachelor* OR master* OR "pre registration")

N2

healthcare OR "health care" OR pharmacy OR medicine OR physiotherapy OR "social work"

OR

occupational therapy" OR nursing))

OR

INDEX: **Undergraduate Education**

AND

INDEX: **Mental Health Education**

OR

mental health" OR "mental illness" OR "mental disorder*" OR depression OR "anxiety disorder*" OR psychosis OR "eating disorder" OR suicide OR "substance use disorder")

AND

medical OR clinical OR paramedical OR "allied health")

N1

education OR training OR learning OR teaching OR curriculum OR curricula))

OR

INDEX: Health Education

NOT

("student welfare" OR wellbeing)

2. CINAHL:

mental health" OR "mental illness" OR "mental disorder*" OR depression OR "anxiety disorder*" OR psychosis OR "eating disorder" OR suicide OR "substance use disorder")

OR

INDEX: Mental Health

AND

medical OR clinical OR paramedical OR "allied health")

N1 education OR training OR learning OR teaching OR curriculum OR curricula))

OR

INDEX: **Education, Medical")**

OR

INDEX: Education, Nursing")

OR

INDEX: Education, Nurse Anesthesia

INDEX: Education, Nursing, Associate")

OR

INDEX: Education, Nursing, Baccalaureate

OR

INDEX: Education, Nursing, Practical

OR

INDEX: Education, Pharmacy")

OR

INDEX: Education, Podiatry

OR

INDEX: Education, Midwifery

AND

undergraduate* OR student* OR trainee* OR bachelor* OR master* OR "pre registration")

N2

healthcare OR "health care" OR pharmacy OR medicine OR physiotherapy OR "social work" OR "occupational therapy" OR nursing)) OR

INDEX: "Students, Undergraduate")

OR

INDEX: Students, Health Occupations+"))))

NOT ("student welfare" OR wellbeing)

3. MEDLINE:

mental health" OR "mental illness" OR "mental disorder*" OR depression OR "anxiety disorder*" OR psychosis OR "eating disorder" OR suicide OR "substance use disorder

OR

MESH: ((MH "Mental Health"))

AND

((((medical OR clinical OR paramedical OR "allied health")

N1

(education OR training OR learning OR teaching OR curriculum OR curricula))

OR

MESH ((MH "Education, Medical"))

OR

MESH (MH "Teaching Rounds")

OR

MESH (MH "Education, Medical, Undergraduate")

OR

MESH (MH "Education, Nursing")

OR

MESH (MH "Education, Nursing, Associate")

OR

MESH (MH "Education, Pharmacy"))))

AND

((((undergraduate* OR student* OR trainee* OR bachelor* OR master* OR "pre registration"))

N2

(healthcare OR "health care" OR pharmacy OR medicine OR physiotherapy OR "social work" OR "occupational therapy" OR nursing))

OR

MESH ((MH "Students, Health Occupations+"))))

NOT ("student welfare" OR wellbeing)

4. ERIC

mental health education AND health profession student OR undergraduate student OR allied health profession student

INDEX: Allied Health Occupations Education

INDEX: Curriculum Development

INDEX: Medical Education

5. Cochrane:

- #1 "mental health" OR "mental illness" OR "mental disorder" OR depression OR "anxiety disorder" OR psychosis OR "eating disorder" OR suicide OR "substance use disorder" 138646
- #2 (medical or clinical or paramedical or "allied health") NEAR/2 (education or training or learning or teaching or curriculum or curricula) 15400
- #3 (undergraduate* or student* or trainee* or bachelor* or master* or "pre registration") NEAR/3 (healthcare or "health care" or pharmacy or medicine or physiotherapy or "social work" or "occupational therapy" or nursing) 4627
- #4 MeSH descriptor: [Mental Health] explode all trees 3626
- #5 MeSH descriptor: [Education, Medical] this term only 587
- #6 MeSH descriptor: [Education, Medical, Undergraduate] explode all trees 994
- #7 MeSH descriptor: [Education, Nursing] this term only 276
- #8 MeSH descriptor: [Education, Nursing, Associate] explode all trees 25
- #9 MeSH descriptor: [Education, Pharmacy] this term only 98
- #10 MeSH descriptor: [Students, Health Occupations] explode all trees 2615
- #11 #5 OR #6 OR #7 OR #8 OR #9 1950
- #12 #1 OR #4 138646
- #13 #2 or #11 15664
- #14 #3 or #10 6269
- #15 #12 and #13 and #14 99