

PROTOCOL

Near-peer faculty within simulation-based education in health care: a scoping review protocol

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ABSTRACT

Background

Peer-assisted learning and near-peer-assisted learning are established educational philosophies within undergraduate healthcare curricula. Although widely described throughout healthcare education, the extent to which peers are involved as 'student faculty' within simulation-based education (SBE) remains unclear. This scoping review protocol seeks to outline how we propose to map the current landscape of peer-faculty involvement in SBE, identifying their roles, training requirements and evaluation methods, as well as reported benefits and challenges of a peer faculty.

Research Aim and Questions

The aim of this scoping review is to systematically explore the utilization and impact of peer faculty within SBE in undergraduate healthcare education. Our specific research questions are as follows: (1) What roles are peer faculty performing and supporting within SBE in undergraduate healthcare education? (2) What is the content and schedule of training provided for peer faculty? (3) What methods, tools or approaches are used to evaluate the benefits, effectiveness or challenges of peer faculty within SBE with respect to (a) learners, (b) institutions and (c) peer faculty themselves? (4) What methods are used to assess competence, or provide feedback, for different roles undertaken by peer faculty within SBE?

Methods

Following the Arksey and O'Malley framework, this scoping review will employ a systematic search across nine databases, including PubMed, Scopus and CINAHL. The review will focus on empirical studies and other published academic works that describe the involvement of peer faculty in undergraduate healthcare SBE. Data extraction will be guided by pre-defined criteria, and results will be synthesized to address the key research questions and identify gaps in the literature and to propose directions for future research.

Discussion

This scoping review will attempt to address a gap in the synthesized literature and map the current terrain concerning how peer faculty are engaged within SBE. This topic is particularly pertinent given the potential benefits of incorporating peer faculty more widely in SBE in the context of rising healthcare student numbers and limited faculty expansion alongside the increasing use of experiential learning modalities in healthcare education.

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Introduction

Peer-assisted learning (PAL) and near-peer-assisted learning within undergraduate healthcare curricula are an established educational philosophy used across disciplines to enhance student learning, with reported benefits for learners, peer tutors and institutions alike [1,2]. It is defined as people from similar social groupings, who are not professional educators, helping each other to learn and learning themselves by teaching. In essence, it is generally thought of as students (or recently qualified practitioners) teaching other students [3]. In the past few decades, simulation-based techniques for teaching have rapidly gained prominence, delivering experiential learning opportunities across healthcare curricula [4,5]. However, unlike in other areas of healthcare education, where PAL is well documented, it is unclear to what extent 'student faculty' or 'near-peer faculty' are currently being engaged within simulation-based education (SBE). Furthermore, we pose that the concept of student faculty within SBE should be considered as a particular branch of PAL, with specific training needs, supervision requirements and assessment criteria. Simulation differs from other forms of PAL activities due to the range of skills required throughout all stages of the design, delivery, debriefing and evaluation phases of SBE activities. Despite this, we (and others) believe that SBE would be an area which is ripe for the involvement and development of a peer faculty at the undergraduate level as SBE activities rise alongside learner numbers [6]. Although there is a lack of synthesis within the published literature on the role of peer faculty within SBE, several papers suggest students may effectively take on a variety of roles including scenario writing, acting as a patient or embedded healthcare professional within a scenario, technical operations or as a facilitator involved in the pre-brief and debrief [6–8].

This lack of synthesis leaves a gap in our understanding of how peer faculty are being trained, developed and utilized within simulation-based activities, what benefits peer faculty may have for learners, institutions and the peer faculty themselves, and what assessment processes are being used to assess the peer faculties' competence. Furthermore, our current lack of understanding of the broader picture limits the practical development of this valuable resource, which is particularly pertinent as simulation-based activities expand alongside the global increase in undergraduate healthcare student numbers [9]. This scoping review protocol sets out to map the current terrain of peer faculty within simulation and answer these questions, identifying gaps in our current knowledge and future research opportunities around the role of peer faculty within SBE.

Rationale for scoping review

Scoping reviews represent an effective and pragmatic approach for exploring complex topics with a broad and evolving literature base. Their primary purpose is to swiftly map out key concepts within a specific research area, identifying the main sources and types of available evidence [10]. Scoping reviews can also help contextualize knowledge,

assist in defining key concepts and signpost areas for future research [11]. As a result, scoping reviews are particularly useful for engaging with broad, exploratory questions in emerging or multifaceted research domains which cannot be addressed in other ways, such as systematic reviews [12,13]. In this case, there is a clear need to explore the concept of peer faculty within healthcare simulation to better understand how these roles can be utilized and developed in a strategic manner. Our scoping review will therefore utilize the methodological framework developed by Arksey and O'Malley to summarize what is currently known on this topic by undertaking a systematic search of literature, anchored by a set of research questions with specific inclusion and exclusion criteria [11]. Our narrative synthesis will provide an overview of the current evidence, as well as highlighting gaps in the existing literature and signpost areas for more in-depth investigation.

Within this scoping review protocol, we will outline our research questions, describe how we plan to identify the relevant literature, describe how studies will be selected both in terms of inclusion and exclusion criteria, and how we propose to map out the data and summarize, synthesize and report our findings.

Methods

Research questions

Our main research questions we hope to address by this scoping review are fourfold:

1. What roles are peer faculty performing and supporting within SBE in undergraduate healthcare education?
2. What is the content and schedule of training provided for peer faculty?
3. What methods, tools or approaches are used to evaluate the benefits, effectiveness or challenges of peer faculty within SBE with respect to (a) learners, (b) institutions and (c) peer faculty themselves?
4. What methods are used to assess competence, or provide feedback, for different roles undertaken by peer faculty within SBE?

Identification of relevant literature

To identify the literature for review, eligibility criteria will be applied relating to participant definitions, types of evidence, language and context.

Eligibility criteria

Participants

Evidence will be sought that relates to peer or near-peer faculty within undergraduate healthcare education simulation. Previous work found a variety of terms used within peer-assisted learning literature and proposed some nomenclature clarifications based on two aspects: the relationship between the student and teacher and the student-to-teacher ratio [14]. We define 'peer' as someone of the same academic status in terms of year and discipline (e.g. medicine or nursing) and 'near-peer' as one or two academic years apart [15]. In the cases of interdisciplinary programmes, we will refer to faculty as 'near-peers' if

they are from different disciplines but the same or similar academic levels [14]. Importantly, for the purposes of this review, we would include those within 2 years of certification/graduation within our definition of near-peer in undergraduate medicine, such as newly qualified doctors being faculty for senior medical student simulations. We use the term ‘faculty’ to include persons involved in any aspect of SBE processes, such as scenario writing and development, facilitation of simulation activities (technical and non-technical aspects). In this context, faculty are distinct from learners or participants within a given SBE activity.

We define any simulation activity as per the Healthcare Simulation Dictionary as ‘The entire set of actions and events from initiation to termination of an individual simulation event; in the learning setting, this is often considered to begin with the briefing (pre-briefing) and end with the debriefing’ [16] and ‘undergraduate healthcare education’ as any pre-licensure healthcare programme including medical, nursing, dental or allied health professions students. There will be no limitations placed on the type of healthcare programme or types of simulation.

Types of evidence

The scoping review will include any empirical primary research studies or other published academic work of either quantitative or qualitative research study designs or descriptive articles in peer-reviewed journals. Included in this review will be both experimental and non-experimental studies describing peer faculty within undergraduate healthcare education. There will be no assessment of, or restriction, placed by study quality as the aim of the scoping review is to understand the contexts and mechanisms by which peer faculty are being trained, utilized, evaluated and assessed as per our research questions. Review articles will not be included as primary evidence; however, reference lists of review articles will be screened for relevant primary studies that fall within the inclusion criteria, and these will be charted within the scoping review.

Context

Articles will be considered for inclusion if they focus on any aspect of peer faculty within undergraduate healthcare programme simulation.

Language

For practical reasons, as is common practice in literature synthesis studies, evidence to be included in this review will be restricted to articles with available English translations. This is reported to be unlikely to introduce significant bias [17].

Search strategy

Selection of studies

Our search strategy will use medical subject headings (MeSH) and keywords within the titles, abstracts and index terms within published research, including:

1. Student led
2. Collaborative learning in placement
3. Collaborative learning
4. Peer learning

5. Placement learning
6. Collaborative coaching
7. Near-peer
8. Peer faculty
9. Peer-to-peer learning
10. Peer-assisted learning
11. Simulation training
12. High-fidelity simulation training
13. Patient simulation
14. Interactive learning
15. Simulation learning

We will also conduct a reference list search of review articles to identify any further studies not identified by our primary search strategy [18].

Nine different database searches will be included:

1. PubMed
2. PsychINFO
3. Embase
4. Scopus
5. Web of Science
6. CINAHL
7. ERIC
8. Google Scholar

Boolean operators such as truncations (*) will be used where appropriate.

Mapping out the data, data extraction and charting

Identified citations will be imported into the reference management software Rayyan (www.rayyan.ai), where de-duplication will occur. Titles and abstracts will be screened by a first reviewer (AM) against our inclusion and exclusion criteria. Following this stage, these selected publications will be screened by full text by two researchers for inclusion, one consistent researcher (AM) plus one other researcher (CB, RF or JM). At this stage, the researchers will be ‘blind’ to the other researchers’ decisions.

Reasons for exclusion at the full-text stage will be recorded by the researchers. Any disagreement on article inclusion or exclusion, as indicated by the ‘conflict’ list from Rayyan, will be resolved by discussion in the presence of a third reviewer. Corresponding authors will be contacted directly if identified papers are not available through usual institutional access policies.

Population inclusion criteria: Studies involving undergraduate healthcare education simulation programme peer faculty.

Population exclusion criteria: Programmes that are not simulation, not undergraduate healthcare education programmes or not peer faculty as per our described definitions.

Our research team consists of CB – Clinician and senior clinical lecturer in clinical simulation, RF – Clinician and clinical lecturer, JM – Senior lecturer in clinical simulation, all of whom have experience in literature review and AM – Senior medical student under the supervision of the above.

A standardized data extraction template will be created, focussing on variables pertaining to our research questions, specifically:

- Article demographics
- Type of article
- Study aims
- Research methods
- Learners involved (simulation participants) – numbers, discipline, stage of learning
- Peer faculty involved (student faculty) – numbers, discipline, stage of learning, gap between peer and learners
- Faculty involved from institution – numbers, level of supervision provided
- Simulation activity description
- Results of study
- Areas of peer-faculty involvement and role of peer faculty described
 - Scenario writing development
 - Briefing/pre-briefing
 - Role as simulated patient
 - Role as embedded healthcare professional
 - Simulator technical operations
 - Role within post-scenario learning conversation/debrief
- Initial and ongoing training of peer faculty
- Reported benefits or challenges with respect to:
 - Learners (simulation participants)
 - Peer faculty
 - Institutions
- Assessment of quality or competence of peer faculty
- Supervision of peer faculty

Summarize, synthesize and report the results

Our review will be reported in accordance with Preferred Reporting Items for Systematic Review and Meta-Analysis Scoping Review extension [19].

Following data extraction and charting, the results will be synthesized to address the four principal research questions. The roles of peer faculty will be described numerically and descriptively within tables and text. A narrative synthesis of initial training and ongoing training will be developed. Methods used to evaluate the impact of peer faculty will be described in relation to the learners, institutions and peer faculty themselves. A descriptive approach will be taken to summarize the results of such evaluations within different SBE contexts. Finally, an assessment of the available literature on ongoing competency assessment will be synthesized and presented descriptively. Where there are identified gaps, these will be highlighted as areas for future research.

Consultation

This study will be conducted with AM, a final-year medical student, as a co-author who will help with the synthesis and contextualization of the results. We plan to share the results of this scoping review with our student faculty to receive further comments about the implications and application of our findings prior to preparing the final manuscript.

Conclusion

This scoping review aims to address an identified gap in the synthesized literature around how peer faculty are engaged within SBE in undergraduate healthcare education. This is pertinent given the potential benefits of incorporating peer faculty more widely within SBE in the context of rising healthcare student numbers and limited faculty expansion, as well as the increasing use of simulation-based techniques across curricula [20]. Addressing this gap will provide an overview of the current landscape of peer-faculty engagement within SBE, as well as identify areas requiring further research.

Author biographies

CB is a consultant in Emergency Medicine and an honorary senior clinical lecturer in clinical simulation at the University of Aberdeen. JM is a senior lecturer in clinical simulation at the University of Aberdeen. RF is a vascular surgeon and a clinical lecturer (scholarship) at the University of Aberdeen. AM is a final-year medical student at the University of Aberdeen.

Declarations

Authors' contributions

CB conceived the initial idea for the study. CB, RF and AM devised the research protocol. JM and RF developed the Aberdeen student simulation faculty development programme, which was the inspiration for this review study. CB wrote the initial protocol manuscript. All authors contributed to the writing and editing of the manuscript.

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Availability of data and materials

Not applicable.

Ethical approval and consent to participate

Literature review study and ethical approval are not required

Competing interests

There are no conflicts of interest to report

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