



# BMJ Open Interventions to support medical trainee well-being when dealing with patient death: a scoping review protocol

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## ABSTRACT

**Introduction** Existing literature demonstrates that medical students and residents experience complex emotions and substantial grief after patient deaths. Over time, this can lead to burnout and depression and adversely impact patient care. In response, medical schools and training programmes worldwide have developed and implemented interventions to help medical trainees to better cope with patient deaths. This manuscript provides a scoping review protocol that aims to systematically identify and document the published research reporting on the implementation or delivery of interventions to support medical students and residents/fellows in dealing with patient death.

**Methods and analysis** A scoping review will be conducted following the Arksey-O'Malley five-stage scoping review method and the Scoping Review Methods Manual by the Joanna Briggs Institute. English language interventional studies published through 21 February 2023, will be identified in the following databases: MEDLINE, Scopus, Embase, Psych Info, Cochrane Database of Systematic Reviews, CINAHL and ERIC. Two reviewers will screen titles and abstracts and then independently screen full-text articles for inclusion. Two reviewers will assess the methodological quality of included studies using the Medical Education Research Study Quality Instrument. After extraction, data will be narratively synthesised. Experts in the field will be consulted to ensure the feasibility and relevance of the findings.

**Ethics and dissemination** Ethical approval is not required as all data will be collected from published literature. The study will be disseminated through publication in peer-reviewed journals and presentation at local and international conferences.

## INTRODUCTION

Medical school and residency training are characterised by high stress and heightened emotions. Although caring for terminally ill patients is an inevitable part of clinical practice, dealing with death and dying is a major source of stress for medical trainees.<sup>1</sup> Existing literature has primarily focused on evaluating end-of-life curricula and student and physician competence in providing end-of-life care.<sup>2-4</sup> Systematic reviews of teaching and learning in palliative care have noted

## STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ We will conduct a comprehensive literature search of multiple bibliographic databases to synthesise published interventions to support medical learners' well-being when dealing with dying patients and their families.
- ⇒ We will use the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews and will follow the Joanna Briggs Institute Manual for Evidence Synthesis to ensure the validity of the review process and findings.
- ⇒ We will consult with relevant experts and stakeholders in healthcare and medical education throughout the scoping review process to further validate the findings.
- ⇒ The review will only include peer-reviewed published literature and may miss relevant interventions in the grey literature.
- ⇒ Only studies written in English will be included and may miss interventions reported in other languages.

fragmented curricula with inconsistent teaching and a lack of assessment.<sup>3,4</sup> Accordingly, medical trainees often report gaps in their training and feel unprepared to provide care for dying patients and their families.<sup>5-7</sup> In fact, limitations in palliative and end-of-life education have been reported in health professions programmes worldwide.<sup>6-10</sup>

Research has also shown that students and resident physicians can experience complex emotions and substantial grief after a patient's death. Many trainees report feelings of helplessness, guilt, failure and sadness in the aftermath of patient deaths.<sup>11-13</sup> If not addressed, these feelings can lead to anxiety, depression and burnout.<sup>14</sup> Physician distress has also been directly linked to decreased empathy, impaired decision-making and adverse patient outcomes.<sup>14,15</sup> Yet, through survey studies and qualitative interviews, trainees frequently admit that their training programmes offer limited support to help

them to process patient death or to develop effective coping strategies.<sup>9 12 16</sup>

In recent decades, medical schools and teaching hospitals have recognised the importance of decreasing trainee anxiety while enhancing well-being and resilience.<sup>17</sup> As such, institutions have developed and implemented curricula and initiatives to support medical students and residents in providing end-of-life patient care. To date, no systematic efforts have been made to evaluate these interventions. To inform the design of effective strategies that support medical trainees managing terminal patients, we plan a scoping review that seeks to compile published evidence in the field. A scoping review methodology was chosen because it will identify the extent, range and nature of research on the topic, including the types of interventions that have been implemented, populations that have been studied and outcomes that have been measured. A scoping review can also help identify gaps in the literature and guide future research.<sup>18</sup> The objective of this review is to systematically identify and document the published research reporting on the implementation or delivery of interventions to support medical students and residents/fellows in dealing with patient death.

## METHODS AND ANALYSIS

### Study design

The search strategy will be performed using a methodology that enhances transparency and improves the reproducibility of the evidence synthesis and findings. We will conduct a systematic scoping review using the enhanced framework of scoping reviews that is based on the methodology described by Arksey and O'Malley.<sup>18</sup> Research objectives, inclusion criteria and methodological techniques will be designed prior to the commencement of the study using the Joanna Briggs Institute (JBI) Reviewers' Manual 2020 Methodology for JBI Scoping Reviews.<sup>19</sup> This will incorporate the following six stages: (1) identifying the research question, (2) identifying relevant studies, (3) selecting studies, (4) mapping/charting the data, (5) collating, summarising, reporting the results and (6) expert consultation. The findings from the completed scoping review will follow the reporting guidance provided in the Preferred Reporting Items for Systematic Reviews and Meta-analyses extension for Scoping Reviews (PRISMA-ScR).<sup>20</sup> The study is scheduled to start in February 2023 and is expected to be completed in August 2023.

### Stage 1: identifying the research question

Population, concept and context criteria were used to formulate the following research questions for this review<sup>20</sup>:

- ▶ What strategies/interventions have been implemented by teaching programmes and institutions to support medical trainees after patient death or to mitigate the negative impact of patient death on medical learners?

**Table 1** Domains and examples of the impact of patient death on medical trainees

| Domain      | Example                                     |
|-------------|---|
| Cognitive   | Difficulty concentrating                    |
| Emotional   | Feelings of grief, guilt or shame           |
| Existential | Feelings of hopelessness or meaninglessness |
| Physical    | Difficulty sleeping; decreased appetite     |
| Relational  | Disrupted relationships with colleagues     |
| Spiritual   | Questioning faith beliefs                   |

- ▶ What are the gaps in the current knowledge base on interventions to support medical trainees after patient death?

### Population

All medical students and residents or fellows in graduate medical education programmes in hospitals worldwide. Medical trainees are particularly vulnerable to negative impacts of patient death due to the intensity of their interactions with patients and families and their lack of experience and coping skills.<sup>11–13</sup>

### Concept

Any interventions or strategies that have been implemented by medical schools or teaching hospitals to support trainee well-being after a patient death or to mitigate the negative impact of patient death on medical trainees will be reviewed. The term 'professional bereavement' has been used to describe the process that physicians and professional caregivers undergo after a patient's death.<sup>21</sup> Based on prior studies, professional bereavement can be operationalised as the cognitive, emotional, existential, physical, relational and spiritual reactions that are triggered by the death of a patient (table 1).<sup>11–13 22 23</sup> Ultimately, the trainee may experience professional challenges in maintaining empathy and compassion for future patients, decreased confidence in clinical abilities, avoidance of patient care responsibilities and decreased satisfaction with the medical profession.<sup>1 11–17 22</sup>

### Context

Medical schools or teaching hospitals worldwide. The global focus was chosen because medical trainee distress after patient death has been well documented in international studies.<sup>6 7 10</sup>

Scoping reviews follow an iterative approach; the research questions may be revised, or additional questions may be included as the research team reviews the literature.<sup>24</sup>

### Patient and public involvement

A medical student and a resident are part of the research team. They have participated in the design of the scoping review and will be involved in study selection, charting the data and summarising the results in order to include their perspectives and experiences.

**Table 2** Search terms used in the scoping review

| Population       | Concept                  | Context                    |
|------------------|--------------------------|----------------------------|
| Medical student  | Well-being               | Medical school             |
| Medical resident | Mental health            | Residency                  |
| Fellow           | Grief                    | Fellowship                 |
| Medical trainee  | Death and dying          | Medical education          |
| Intern           | Moral distress           | Graduate medical education |
|                  | Coping                   | Clinical training          |
|                  | Death rounds             | End-of-life care           |
|                  | Teaching rounds          | Palliative care            |
|                  | Patient death            |                            |
|                  | Attitude to death        |                            |
|                  | Psychological adaptation |                            |
|                  | Professional bereavement |                            |
|                  | Intervention             |                            |

### Stage 2: identifying relevant studies

A comprehensive search of published literature will be conducted encompassing eight academic databases: MEDLINE, Scopus, Embase, Psych Info, Cochrane Database of Systematic Reviews, CINAHL and ERIC, using specific search terms (table 2). Studies published through 21 February 2023, will be included. The search strategy will follow a three-step process as recommended by the JBI Reviewer's Manual for scoping reviews.<sup>24</sup> In the first step, a limited search using keywords will be conducted in the database MEDLINE. Words contained within the

titles, abstracts and keywords in all retrieved articles will be analysed to develop a full search strategy. These identified keywords will then be used to conduct a second search across all of the databases. The third step will involve screening the references of all selected studies to identify additional manuscripts. The full search strategies for all databases will be included in the final review.

Eligibility criteria are listed in table 3. Papers will be included if they (1) include one or more interventions to enhance the well-being of medical trainees in the context of patient death or reduce the impact of patient death on medical learners and (2) are empirical studies. Study protocols, review papers, journal commentaries, book chapters and editorials will be excluded. Studies not in the English language will also be excluded. Previous studies have found that excluding non-English language articles from a review only minimally affects the results.<sup>25</sup>

The primary outcome to be reported is the impact on medical student or resident/fellow well-being, as measured either subjectively or objectively. We will exclude studies that evaluate the implementation of general well-being or mental health interventions that are not specifically associated with patient death, as well as interventions that are not formally implemented by medical education institutions (eg, mental health interventions freely available online). Interventions that exclusively improve trainee knowledge, skills or competence in end-of-life care but that do not have a well-being component will also be excluded.

### Stage 3: selecting studies

The scoping review will be conducted by eight individuals: two trainees, a medical librarian, a graduate student and four clinician-educators who train medical students

**Table 3** Inclusion and exclusion criteria for a scoping review of interventions to support medical trainee well-being in the context of patient death

| Inclusion criteria  | Exclusion criteria  |
|---|---|
| Any observational or interventional primary research study, including qualitative, quantitative or mixed-methods studies. Can include educational research or programme/curriculum evaluation | Study protocol, review, perspective or opinion, editorial, commentary, case study or case report, or report from an expert advisory group   |
| Participants or a proportion of participants are medical students or medical residents and fellows, regardless of year of training  | Participants include medical students or residents/fellows, but do not include them as an independent group within any analyses.<br>Participants are practicing physicians (not trainees) or other health professional students (eg, nurses, allied health)   |
| The study reports on a strategy or intervention to support medical trainees after patient death or to mitigate the negative impact of patient death on medical learners                       | The study does not describe an intervention.<br>The study reports on general well-being or mental health interventions that are not specifically associated with patient death.<br>The study describes an intervention/curriculum focused on palliative or end-of-life care education, without component(s) to support trainees after patient death |
| Study outcome includes social, physical, psychological or professional well-being, as measured either subjectively or objectively   | Study outcome includes changes in trainee knowledge, skills or competence in end-of-life care, without a well-being component   |

and residents. Several authors have expertise in medical education (HI, SS) and palliative care (HI). The research team will also be supported by local experts and clinicians in oncology and palliative care to enhance the reproducibility, transparency and trustworthiness of the analysis. The research team will meet at the beginning, during and end of each stage of study selection. Any discrepancies among reviewers will be resolved through team discussion and consensus.

Initially, the research team will independently conduct a pilot screening by applying the selection criteria to a random selection of 10 study titles and abstracts and discuss discrepancies to finalise the selection criteria. Study selection will then consist of a two-step screening process, which includes a title and abstract screening followed by a full-text review. In both steps, the same two independent reviewers will screen the studies using the inclusion and exclusion criteria. Any disagreements will be discussed, and if no consensus can be reached, a third reviewer will be consulted. Discrepancies and associated decisions will be recorded and included in the final manuscript.

All search results will be imported into the systematic review screening tool Covidence, where any duplicates will be removed. Two reviewers will conduct a title and abstract screening of the retrieved studies in Covidence using the final eligibility criteria. Then, the remaining full-text publications will be independently reviewed by two reviewers. Ineligible studies will be removed at each step, and the reason for exclusion will be recorded. A third reviewer will re-review all excluded articles. In the final step, the references of reviews and included documents will be hand-searched to identify additional articles. The process will be depicted in the final manuscript with a flow diagram following the PRISMA-ScR guidelines.<sup>20</sup>

#### Stage 4: charting the data

Two reviewers will independently abstract the data using a pretested structured data recording template. Discrepancies will be resolved through discussion. If no consensus is reached, a third author will review and resolve the disagreement. The extracted data will include: author names; title; year of publication; type of study; country of study; aims or purpose of the study; study population and context (medical students or residents, preclinical or clinical, hospital or other clinical context); study design (quantitative, qualitative, mixed methods); intervention type and duration; outcomes measured; comparison groups (if available); key findings that relate to student or resident/fellow well-being. To ensure reliability, data from 5% of included papers will be independently coded by a third reviewer.

#### Assessment of evidence quality

Two reviewers will independently use the Medical Education Research Study Quality Instrument to assess the quality of each included study.<sup>26</sup> All studies that meet inclusion criteria will be included, regardless of quality.

Inter-rater reliability will be measured using Cohen's kappa coefficient. Discrepancies will be resolved through discussion and if not resolved through consensus, a third researcher will be consulted.

#### Stage 5: collating, summarising and reporting the results

Data from the included articles will be collated, summarised and reported according to the aims of the scoping review and the PRISMA-ScR checklist guidelines.<sup>20</sup> Descriptive characteristics of the selected studies, including publication date, population studied and sample size, study location and intervention, will be collated in tables or charts to present a general overview of the literature. A narrative synthesis will focus on the intervention approaches and outcomes, specifically on the trainee's social, physical, psychological or professional well-being. The narrative summaries will describe how the results meet the aims and objectives of the scoping review. The collation and synthesis of the data will follow an iterative approach and will involve discussions with all team members and consultation with external experts and stakeholders. Based on the synthesis of the studies included in the scoping review, the research team can identify gaps in the literature by highlighting areas where there is limited or no literature available on interventions to support medical trainees after patient deaths. The research team will also identify inconsistencies in the data, such as inconsistent outcomes or a lack of studies on a particular type of intervention. The implications of these gaps for medical education and clinical practice will be considered and will help inform directions for future research.

#### Step 6: expert consultation

The findings will be discussed with relevant experts and stakeholders in healthcare and medical education, and their input will be integrated into the final report. Stakeholders will include medical educators, oncologists and palliative care specialists. Stakeholder input will validate the findings and help to identify gaps for further research.

#### Ethics and dissemination

Ethical review or approval are not applicable as this review will be conducted on published data only. Findings of this study will be disseminated through publication in peer-reviewed journals and at national and international conferences and can inform curricula and educational programming in medical schools and residency programmes globally.

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**Contributors** HI and SS conceived the review idea with input from KW. KW and LOA conducted the literature review. KW, CJV and SS developed the search strategy and contributed to the methods section. HI drafted the initial protocol. KW, LOA and SS revised the manuscript. All authors contributed to and approved the final version of the manuscript.

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