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Preparing pharmacists for disaster management and practice: protocol for a scoping review with a participatory approach

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ABSTRACT

Introduction Emergency humanitarian situations can be caused by extreme weather events, natural disasters, civil conflicts, international wars, terrorism and pandemics, which threaten our health and compromise health systems worldwide. Pharmacists are the third-largest healthcare professional group globally and provide pharmaceutical care and advice to people in need. However, the training opportunities to prepare pharmacists to respond in emergency humanitarian areas are not well described and may be limited. This scoping review aims to understand the extent and type of evidence in relation to training and education activities to prepare future pharmacists for disaster management in humanitarian emergency situations.

Methods and analysis We will analyse peer-reviewed literature relating to educational or training activities for pharmacists/pharmacy students in the delivery of pharmacy services in humanitarian emergency situations. Relevant medical subject headings and keywords will be used to search Ovid MEDLINE, Scopus, EMBASE, ERIC, Informit, Web of Science and CINAHL databases from inception to the end of July 2024. Hand searching of any key references identified will also be performed. The title and abstract of search results will be screened to identify articles eligible to be included for full review. Articles meeting the inclusion criteria will undergo data extraction, content analysis and synthesis of the evidence using NVivo qualitative analysis software. A narrative summary of key themes and concepts in the literature will be presented as results. An international panel of experts will be consulted to inform decision-making processes during the development and interpretation stages, and we propose a template for the incorporation of participatory/consultative methodology into the scoping review process.

Ethics and dissemination Ethics approval is not required for this study protocol because the members of the expert panel consulted are researchers who are participating based on their professional skills. Findings will be disseminated via publication in a peer-reviewed journal and presentation at international conferences.

STRENGTHS AND LIMITATIONS OF THIS STUDY

⇒ A participatory approach involving an expert panel has been established to guide the development of the scoping review protocol and interpretation of the results.
⇒ Members of the expert panel will also be the end knowledge users of the study findings, increasing the relevance of the study and enabling effective dissemination and application of the findings.
⇒ Pharmacy technicians and support staff may play an important role in the disaster response from the profession; however, we have chosen to limit the inclusion criteria to pharmacists and pharmacy students only at this stage due to the focus on mapping educational and training activities.

INTRODUCTION

Disasters are broadly defined as events that cause human, physical, environmental or economic damage that overwhelms the ability of the affected community to cope using their existing resources.[1] Disaster risk depends on three interdependent factors—natural or anthropogenic risk, vulnerability to a hazard and the coping capacity of the community towards the hazard.[2]

The US National Preparedness Goal describes five mission areas necessary for a resilient and secure nation: prevention, protection, mitigation, response and recovery.[3] Prevention, protection and mitigation relate to preparedness by reducing the risk of a disaster occurring and/or lessening impacts once a disaster has occurred. Following a disaster, the response phase encompasses the capabilities needed to save lives, protect property and the environment and meet basic human needs in the days to weeks afterwards. The recovery phase involves restoration and rebuilding and takes place over months to years following a disaster.[4]

Climate change is increasing the occurrence of extreme weather events such as flooding and wildfires, threatening both the health of individuals and health systems

worldwide. Man-made disasters, including civil conflicts, international wars and terrorism, can have similar health impacts. To mitigate these negative health impacts, health professionals, including pharmacists, need to be prepared to respond during humanitarian emergency situations.

The extended role of pharmacists during the COVID-19 pandemic highlighted the adaptability and disaster management skills needed by pharmacists in the event of humanitarian emergencies.[5–7] Prior to this, there had been some work underway to define core competencies for pharmacists involved in humanitarian and military aid responses to natural disasters including landslides, earthquakes and displacement of refugees.[8 9] However, as far as the authors are aware, emergency preparedness is not routinely part of pharmacy programme accreditation standards.

Pharmacists are the third-largest healthcare professional group globally. In an emergency humanitarian setting, pharmacists are often on the frontline in responding to the health needs of the public.[10] They provide important material, logistic and pharmaceutical care as well as health advice and information to people in need.[11] Their roles in emergency planning and policy development have also been highlighted, for example, with regard to the coordination and implementation of mitigation strategies such as antiviral prescribing guidelines or vaccine rollout.[12]

Training opportunities for pharmacists to specialise in emergency humanitarian areas are thought to be limited. There is an urgent need to prepare pharmacists to continue to successfully fulfil their roles when infrastructure, supply chains and patient needs differ substantially from traditional healthcare settings. Responding to this, the International Pharmaceutical Federation (FIP) developed the Global Humanitarian Competency Framework (GbHCF),[13] which can be used as a basis for educational programmes to prepare pharmacists to work in a humanitarian area. Initial pharmacy education and training often dictates entry-level competencies of pharmacists in the country of registration and is often country-specific due to differences in educational systems, population and societal needs and the pharmacist's scope of practice within the country. However, unique challenges and settings of humanitarian emergencies often require international collaboration, where inconsistent skill sets of pharmacists are not ideal.

This scoping review will explore the breadth of evidence relating to training and education activities to prepare pharmacists or pharmacy students for the response phase of humanitarian crisis situations. A scoping review was chosen because although there has been some work done with regard to defining pharmacist roles, experiences and competencies in this field, less is known about educational needs and training activities to prepare pharmacists for their potential roles in planning for, and responding to, disasters. A preliminary search of MEDLINE was conducted, and as of July 2024, no current or underway systematic reviews or scoping reviews on the topic were identified. This indicates a gap in the literature which this scoping review seeks to address. This review will identify and analyse the peer-reviewed and published literature available to date and map the key concepts and themes emerging in this area.

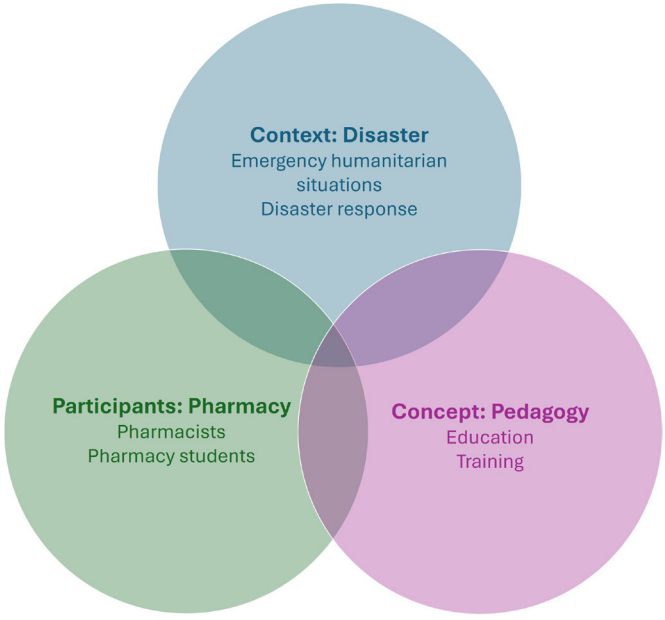

Figure 1 Outline of the three domains to be considered in the search strategy.

METHODS AND ANALYSIS

Review question

This protocol has been developed using the Joanna Briggs Institute (JBI) Scoping Review Protocol Template (available at https://jbi.global/scoping-review-network/resources; accessed 30 July 2024).

The review objective was developed using the Participant–Concept–Context framework (figure 1), where the participants are pharmacists/pharmacy students, the concept is education/training and the context is emergency humanitarian situations. The search strategy will aim to identify the published literature relating to all of these three domains.

Our specific research questions are as follows:

1. What are the educational needs of pharmacists responding to humanitarian disasters?
2. What training have pharmacists received to prepare them for this role?
3. How was this training delivered?
4. How was the effectiveness of the training evaluated?

Eligibility criteria

Participants

We will include in our review articles relating to pharmacists, pharmacy students and pharmacy interns.

Concept

Competencies required of pharmacists assisting in humanitarian crisis situations have already been described

in the literature, and a competency framework has been proposed by FIP. We will be searching for the published literature related to educational or learning needs of pharmacists and pharmacy students. We wish to identify and describe educational and training activities developed to prepare pharmacists for disasters and understand how materials may have been delivered and evaluated.

Context

We will consider pharmacist training needs in the context of humanitarian crisis situations resulting from (but not limited to): natural disasters such as earthquakes, volcanic eruptions, flooding, landslides, hurricanes, cyclones, typhoons, tsunamis, wildfires; pharmacists' training needs relating to man-made disasters such as civil war, international conflict, refugee displacement and terrorism. Pharmacist training needs relating to the emergency response phase of epidemic or pandemic pathogens such as influenza, SARS, Ebola and COVID-19 will also be considered.

Types of sources

This scoping review will consider original peer-reviewed research articles published from inception to the end of July 2024 that are available through the databases specified using the search strategy described here. This may include studies utilising quantitative, qualitative and mixed methods approaches as well as descriptive case reports and cross-sectional studies. Depending on the research question, systematic reviews that meet the inclusion criteria (such as disaster preparedness roles of pharmacists during COVID-19) will also be considered. In addition, we will conduct hand searches of reference lists of any key articles identified.

Grey literature such as key policy documents from FIP, the World Health Organization (WHO) and Pharmacists without Borders will be included to gather insights into disaster preparedness training for pharmacists at national and international levels.

Exclusions

Articles that cannot be obtained online via the libraries of our affiliated universities will not be included. Articles which are not available in English will be excluded, as the authors do not have the resources required to translate non-English articles.

As there has been an explosion of literature relating to the COVID-19 pandemic, we will limit our inclusion criteria to only include COVID-19 articles during the emergency response period. This decision is intended to maintain the breadth of focus of the present scoping review.

We will not be considering articles relating to pharmacy technicians or other pharmacy support personnel at this stage, since the focus of the review is educational and training needs of pharmacists and pharmacy students in the context of disaster preparedness.

Current school of pharmacy curricula will not be included at this stage as this will be explored specifically in more depth in a separate study.

Participatory approach

Although the authors suggest it to be optional, stage 6 of the original scoping review framework described by Arksey and O'Malley[14] recommends a consultation process to inform the scoping review. This is often not undertaken; however, more recent developments to this seminal work in scoping review methodology have built on this and now recommend consultation with key stakeholders to be an essential component to inform the interpretations and dissemination of the scoping review findings.[15] Further, Pollock *et al.* propose that knowledge users should be engaged at all stages of the scoping review process, from inception to dissemination.[16] In accordance with these guidelines, a panel of experts has been consulted to inform decision-making processes during the development of the scoping review protocol and will inform the interpretation and implications of the findings. The panel was drawn from a pre-existing network of university academics involved in the delivery of undergraduate teaching from schools of pharmacy across the world and comprises a group of representatives with a special interest in teaching disaster preparedness. These individuals have been listed as co-authors for this protocol. They will be some of the end users of the knowledge generated from the scoping review and have the ability to apply key findings in the development of disaster management preparedness training into pharmacy undergraduate curricula. In this way, we endeavour to link the objectives of the review to research outcomes at the outset via incorporation of participatory methodology. A group policy for the role of the panel was established prior to the commencement of the study. Feedback was collected from the panel through online focus group meetings at critical decision-making points in the research process. A meeting report template (table 1) was used to document key discussion points from the group and demonstrate how their ideas were translated into agreed action points by the research team.

Timeframe

The proposed timeline for the research is as follows:

- July: first consultation with expert panel to present skeleton plan and gather feedback to develop scoping review protocol.
- August: finalise scoping review protocol.
- September–October: gather, read and analyse articles.
- November: write up preliminary report/findings.
- December: second consultation with expert panel to present preliminary findings of scoping review and gather feedback to inform interpretation and implications from a pharmacy education perspective.
- January: incorporate feedback and finalise review.

Search strategy

The proposed scoping review will be conducted in accordance with the JBI methodology for scoping reviews.[17]

Table 1 Expert panel consultation report template

Agenda	Discussion points	Action
Issue/item to be discussed. This column will be prepared before the meeting	The main discussion points and opinions expressed by the panel members will be recorded during the meeting	Ideas will be assimilated into an action plan, and any agreed action points resulting from the discussion will be recorded. The revised interview schema will then be reviewed by the panel members to check interpretation
Discuss education/training in disaster management focus of scoping review		
Brainstorm ideas for search terms, journals, databases		
Feedback on proposed search strategy and template		
Thoughts on stage 2 of the project—curriculum mapping		
Other items discussed by the panel		

The proposed search strategy for the present scoping review has been developed in collaboration with a biomedical librarian, who will advise on further refinement where necessary.

A preliminary search of MEDLINE was undertaken to scope for articles relating to the research question. Search terms and index categories were identified from the titles, abstracts and keywords of relevant articles and were used to develop a possible search strategy (table 2). This was presented to the expert panel for review and refinement. Keywords and index categories will be tailored and adapted where necessary for each database during the course of the literature search, following guidance from the librarian.

The databases to be searched include Ovid MEDLINE, Scopus, EMBASE, ERIC, Informit, Web of Science and CINAHL, following the recommendations of the biomedical librarian.

FIP, WHO and Pharmacists without Borders websites will also be searched to identify key policy documents relating to the research question.

Study/source of evidence selection

After searching the above databases and websites, all identified references will be imported into Endnote. Duplicates will be removed. Titles and abstracts will then be screened to determine whether they are eligible for inclusion against the criteria described.

Table 2 Preliminary search strategy, conducted on 25 June 2024 in Ovid MEDLINE.

	Search terms	Hits (n)
1	exp Natural Disasters/ or exp Disasters/ or disaster.mp.	126 568
2	emergency.mp. or exp Emergencies/	439 155
3	1 or 2	507 954
4	pharmacist.mp. or exp Pharmacists/	34 836
5	Pharmacy Technicians/ or pharmacy.mp. or Community Pharmacy Services/ or Pharmacy/ or Pharmacy Service, Hospital/	78 712
6	4 or 5	94 600
7	Students, Pharmacy/ or Education, Pharmacy/ or Pharmacy Research/ or Schools, Pharmacy/ or Education, Pharmacy, Continuing/ or Education, Pharmacy, Graduate/	11 443
8	Education, Public Health Professional/ or Education, Pharmacy, Graduate/ or Education, Continuing/ or Education/ or Interprofessional Education/ or Competency-Based Education/ or Health Education/ or Education, Pharmacy/ or Education, Pharmacy, Continuing/	109 187
9	training.mp.	636 409
10	Competency-Based Education/st [Standards]	653
11	competencies.mp.	24 003
12	10 or 11	24 464

This search generated 539 references, of which 39 appeared to be relevant after screening of titles and abstracts and were imported into Endnote.

Authors may be contacted to request missing or additional information, where appropriate. The full texts of potentially relevant articles will then be retrieved and assessed in detail against the inclusion criteria by the reviewer (EL). Reasons for exclusion will be recorded and reported in the scoping review. Any uncertainties arising during the selection process will be discussed with an additional reviewer or a member from the expert panel. A Preferred Reporting Items for Systematic Reviews and Meta-analyses extension for scoping review flow diagram will be used to present the reference selection process.[18]

Data extraction

A draft extraction form has been developed by the reviewers in consultation with the expert panel (see online supplemental material 1). This will be used to document details about studies which are relevant to the objectives of the review, including the date of publication, journal or publication platform, location, participants, type of humanitarian crisis, research methods and key findings relating to educational or training concepts. This tool will be adapted and modified where necessary following piloting and in accordance with feedback from the expert panel during the data extraction process. Modifications will be documented in the scoping review. Any uncertainties that arise will be resolved through discussion with an additional reviewer or with the expert panel.

Data analysis and presentation

Characteristics of the studies included in the review such as type of humanitarian crisis, pharmacy population studied (eg, hospital/community/pharmacy students), methods and key findings will be tabulated. Extracted data will undergo content analysis using NVivo qualitative software to categorise data relating to research questions this scoping review is aiming to address:

1. What are the educational needs of pharmacists responding to humanitarian disasters?
2. What training have pharmacists received to prepare them for their roles in humanitarian disasters?
3. How was this training delivered?
4. How was the effectiveness of the training evaluated?

A narrative summary of key themes and concepts emerging from the current literature will be provided to describe the breadth of evidence currently available regarding disaster preparedness training for pharmacists.

We will also use geographical mapping to visually present the distribution of current publications globally and chronological mapping to show how the landscape of the literature has developed over the last three decades (1994 to present).

Patient and public involvement

Patients and or the public were not involved in the design, conduct or reporting of this scoping review protocol.

ETHICS AND DISSEMINATION

Ethics

As per JBI guidelines,[16] ethics approval is not required for this study protocol because the members of the expert panel consulted are researchers who are participating based on their professional skills.

Dissemination

It is unknown what the possible findings might be, but it is expected that the results of the scoping review will go on to inform the second stage of our research programme. The consequence of this first phase will be to map current pharmacy undergraduate curricula against the FIP GbHCF and compare it back to the literature found in this review. In this way, the implications for theory/literature in this field will be better understood. The results will also be disseminated to members of the expert panel, all of whom are involved in the delivery of undergraduate teaching at universities internationally. This will allow key findings of the scoping review to be used in the development of disaster management preparedness training for pharmacy students. We also intend to submit the scoping review for publication in peer-reviewed journals and to present at international pharmacy conferences where appropriate.

Contributors EL is the first author and primary research fellow who is responsible for the conceptualisation and development of the protocol. SLS contributed to the funding acquisition and was a member of the expert panel involved in the conceptualisation and development of the protocol. NA contributed to the development of the initial concept and was a member of the expert panel involved in the conceptualisation and development of the protocol. AC was a member of the expert panel involved in the conceptualisation and development of the protocol. CRS was a member of the expert panel involved in the conceptualisation and development of the protocol. SMH was the project supervisor, contributed to the funding acquisition and was a member of the expert panel involved in the conceptualisation and development of the protocol. SMH acted as the guarantor and had the final responsibility to submit the manuscript. All authors read and approved the final protocol manuscript.

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Competing interests None declared.

Patient and public involvement Patients and/or the public were not involved in the design, or conduct, or reporting, or dissemination plans of this research.

Patient consent for publication Not applicable.

Provenance and peer review Not commissioned; externally peer reviewed.

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