COVID-19-related stress among emergency physicians: a scoping review protocol on the stressors and coping strategies

Sze-Yuen Yau,1 Ching-Yi Lee,2,3 Hung-Yi Lai,2,3 Ching-Hsin Lee4

INTRODUCTION

The world has recently faced unparalleled pandemics, such as Coronavirus (SARS, MERS and COVID-19), swine influenza and Ebola. Global health and safety have been seriously threatened by COVID-19 since December 2019.1 Approximately 500 million cases and more than 6 million deaths have been reported worldwide as a result of the new crown pneumonia.2 There is no doubt that COVID-19 has broken all previous records related to pandemic duration, number of infections, morbidity and mortality. Various difficulties confront healthcare workers during this unprecedented crisis, and all disciplines must provide frontline care in a high-pressure environment. Healthcare professionals are exposed to a significant number of risks, including long working hours, increased workload, personal infection risk and physical and psychological stress related to caring for infected patients.3–5 Numerous studies indicate that healthcare professionals are more likely to experience psychological symptoms such as anxiety and depression in response to the current corona pneumonia epidemic.6–8

Frontline health workers, particularly emergency physicians, are suffering the most severe effects of COVID-19.7–9 Nearly all patients first seek assistance from emergency services, resulting in a significant increase in the workload of emergency personnel. Health systems were unable to respond effectively to the growing demand for care during
this acute period of the pandemic, resulting in negative impacts among emergency physicians. It is important to note that emergency physicians make up the majority of the critical health workforce, and they are responsible for providing frontline patient care while making rapid decisions under high pressure. Their professional duties to care for patients infected with COVID-19 and their exposure to an unsafe environment put them at risk of infection and death. Meanwhile, much scholarly research has taken place on a variety of aspects in parallel. Many studies have found that emergency physicians are especially prone to mental health issues in the wake of the pandemic. However, there is a lack of comprehensive research on the stress and coping mechanisms of emergency physicians. Given the urgent nature of the pandemic, and the critical role that emergency physicians play in healthcare systems worldwide, it is essential to understand their unique stressors and coping strategies.

COVID-19-related stressors
The term stressor refers to a condition that causes distress, usually by means of a stimulus or a trigger. Emergency physicians have been exposed to a range of stressors during the COVID-19 pandemic. Key stressors include long hours, increased workload, personal risk of infection and exposure to potentially infected patients. Emergency physicians may also experience moral distress due to having to make difficult decisions about patient care. The problem is further exacerbated by isolation from family and friends.

Emergency physicians can utilise a variety of coping strategies to cope with these stressors. These include problem-oriented coping, which involves taking action to address the source of stress; emotion-oriented coping, which involves managing emotions associated with stress and avoidance coping, which entails avoiding or withdrawing from stressful situations. In addition, emergency physicians can use positive reappraisal, a cognitive reframing technique designed to facilitate a more optimistic perspective on stressful situations. Therefore, understanding the source of stress and the relevant coping strategies is an important endeavour. In light of the dynamic nature of the COVID-19 outbreak, it was expected that the stressors and corresponding responses would change as the outbreak progressed. Thus, a systematic scoping review will provide an overview of the current state of stress and management research targeted at emergency physicians during the COVID-19 pandemic and identify any key gaps in our knowledge.

It was determined that no systematic reviews or scoping reviews were currently underway on the topic based on a preliminary search of MEDLINE, Cochrane Database of Systematic Reviews and Joanna Briggs Institute (JBI) Evidence Synthesis. Thus, the objective of this scoping review is to assess the extent of the nature of stressors and coping mechanisms among emergency physicians during the COVID-19 pandemic in order to recommend effective techniques for managing stress.

ELIGIBILITY CRITERIA
Participants
All papers published in academic journals that relate to emergency physicians at all levels will be considered for this scoping review. These individuals will include those who are currently practicing independently (such as consultants in the UK and attendings in the USA), trainees and medical students. However, it will exclude physician associates or assistants, and other healthcare practitioners and students from other specialties.

Concepts
The concepts of interest for the proposed scoping review are the COVID-19-related stressors and coping strategies proposed in the medical literature. A stressor typically refers to a stimulus or an eliciting event. Coping strategies refer to actions that people take to deal with stress. These can include relaxation techniques, exercise and social support. The nature and timing of stressors as well as coping strategies will be the focus of our analysis.

Context
This review will focus on studies that are conducted in clinical environments during the COVID-19 pandemic. The review is not geographically limited; we will include relevant papers worldwide. However, emergency medicine may not exist as a separate specialty in some countries, or it might be relatively new in others. Therefore, we expect most of the literature were from countries where emergency medicine has been established specialty for some time. However, studies conducted in schools or other service communities will be excluded unless emergency physicians are the target participants, or a separate discussion is provided.

Types of sources
Our scoping review will examine experimental and quasi-experimental studies, including interrupted time-series studies, before and after studies, randomised controlled trials and non-randomised controlled trials. Additionally, we will consider observational studies which involve statistical analysis, such as prospective cohort studies, retrospective cohort studies, cross-sectional studies and case-control studies. Observational descriptive designs such as case series, individual case reports and descriptive cross-sectional studies will also be included in the review.

Studies with qualitative approaches will also be considered, including, but not limited to, phenomenology, ethnography, grounded theory, qualitative description, action research and feminist studies. In accordance with the research questions, systematic reviews that meet the inclusion criteria will also be taken into account.

Additional inclusion/exclusion criteria: (a) scientific papers and grey literature including editorials, commentaries, brief reports and other short pieces will be included, while book chapters and conference proceedings will be excluded as they were not well developed and
rigorous to provide valid evidences; (b) papers published in both English and Mandarin will be included.

A summary of inclusion and exclusion criteria is provided in table 1.

### METHODS

The proposed scoping review will be conducted in accordance with the JBI methodology and Arksey and O’Malley’s framework for scoping reviews. The entire process comprises an iterative six-stage process: (1) identifying research questions; (2) identifying studies; (3) study selection; (4) data extraction; (5) collating, summarising and reporting results; and (6) an optional stage of consultation exercise.

#### Identifying research questions—review questions

1. What is the state the current state of stress and management research targeted at emergency physicians during the COVID-19 pandemic?
2. What are the stressors and coping strategies encountered by emergency physicians during the COVID-19 pandemic?

#### Identifying studies—search strategy

The search strategy will be designed to locate both published and unpublished studies. This review will employ a three-step search strategy. The first step will be to conduct a limited search of MEDLINE (PubMed) and CINAHL (EBSCO) for articles related to the topic. A complete search strategy has been developed utilising the text words contained in the titles and abstracts of relevant articles, and the index terms assigned for description of the articles (see online supplemental appendix 1). The search strategy will be adapted for each database, including all identified keywords and index terms. Additional studies will be screened from the reference list of all included sources of evidence.

#### Study/source of evidence selection

All identified citations will be collated and imported into EndNote V.20 (Clarivate Analytics, PA, USA). After removal of duplicates and completion of a pilot test, titles and abstracts will be screened independently by two reviewers for assessment against the prespecified inclusion criteria. A third reviewer will be consulted to help reach consensus for any disagreement. The JBI System for the Unified Management, Assessment and Review of Information (JBI SUMARI; JBI, Adelaide, Australia) will be used to retrieve potentially relevant sources in full and import their citation details. Two independent reviewers will evaluate the full text of selected citations for eligibility against the inclusion criteria. The scoping review will document and specify the reasons for excluding sources of evidence that fail to meet the inclusion criteria. There will be a discussion at each stage of the selection process to resolve discrepancies between the reviewers. The search results and overview of study inclusion process will be presented in a Preferred Reporting Items for Systematic Reviews and Meta-analyses extension for scoping review (PRISMA-ScR) flow diagram.23

#### Data extraction

Data extraction from studies eventually included in the scoping review will be conducted by two independent reviewers using a data extraction tool developed after critical discussion. Details on the data extracted will capture information about participants (levels of physician), concepts (nature and timing of stressors as well as coping strategies), contexts (countries of study, size of hospital), study methods (qualitative and quantitative research methods) and critical findings relevant to the review question. Data will be coded using an inductively developed thematic framework approach: the research team will begin by reading a subset of the full text papers; the team will discuss the themes arising within the literature, at which point a coding framework will be developed and all of the literature will then be coded accordingly. Any disagreements in data extraction will be resolved through discussion by the reviewers. A third reviewer may be consulted to help reach consensus. The authors of papers will be contacted in order to request missing or additional data, where necessary.21

#### Data analysis and presentation

An analytical framework with a quantitative and thematic approach will be used to collate various themes that emerge from the existing data. Each article will be coded with a maximum of two themes during the coding analysis by JBI SUMARI (JBI, Adelaide, Australia), and the charting results will then be summarised using the same analytic tool. Percentages will be utilised to describe the nominal data.

#### Consultation exercise

According to current best practice for scoping reviews, the final step of the review should include expert
consultation. This consultation is important to this exercise as it will include social and cultural differences across stakeholders’ expertise and interests that come together to enrich discussion. A group of experts in medical education and public health from Chang Gung Memorial Hospitals (Medical Education Research Centre) and the University of Sydney (Faculty of Medicine and Health) will be consulted, thus providing valuable insights beyond what has been captured through literature search.

Patient and public involvement
There will be no involvement of patients or the public at any stage of this research.

Contributors
All authors have made substantial intellectual contributions to the development of this protocol and its revisions. The review question was developed by S-Y and further refined by C-YL. The review approach and design was conceptualised and developed by S-Y with advice from C-YL, H-YL and C-HL. S-Y and C-YL developed and tested search terms with revisions from H-YL and C-HL. S-Y and C-YL participated in drafting of the manuscript followed by further iterations after collaborative input and appraisal from all authors. All authors approved the final manuscript.

Funding
This work was supported by the Ministry of Science and Technology (R.O.C.) under grant (MOST 110-2628-H-182-002) and Chang Gung Memorial Hospital in Taiwan under grant (CMRPG3L1531).

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 required.

Provenance and peer review
Not commissioned; externally peer reviewed.

Supplemental material
This content has been supplied by the author(s). It has not been vetted by BMJ Publishing Group Limited (BMJ) and may not have been peer-reviewed. Any opinions or recommendations discussed are solely those of the author(s) and are not endorsed by BMJ. BMJ disclaims all liability and warranties of any kind, whether express or implied, for the accuracy or reliability of the content. Responsibility for any error and/or omissions arising from translation and adaptation or otherwise.

Open access
This is an open access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited, appropriate credit is given, any changes made indicated, and the use is non-commercial. See: http://creativecommons.org/licenses/by-nc/4.0/.

ORCID iD
Ching-Yi Lee http://orcid.org/0000-0001-9769-8115

REFERENCES
7 Chirico F, Nucera G, Magnavita N. Protecting the mental health of healthcare workers during the COVID-19 emergency. BJPsych Int 2021;1–12.