A systematic review of the factors influencing retention or turnover intention among emergency personnel in epidemics

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Abstract

To maintain the performance of emergency personnel who are at disproportionate risk of infection on the front lines of outbreaks, it is beneficial to understand the factors that promote their willingness to stay or leave their job. This study aims to identify key factors related to emergency workers' willingness to retain. This study identifies key factors related to emergency workers' willingness to be retained or turnover intention during infectious disease pandemics. Following the PRISMA guidelines, a systematic review of the literature was conducted. To obtain the results, three databases, Scopus, PubMed Web of Science, and Google Scholar, were searched for English-speaking studies up to March 2022 that met the established inclusion criteria and were of high quality. Given the heterogeneity of the results, a qualitative synthesis of the results was also undertaken. A narrative synthesis was performed on 34 studies of high and medium quality. The studies examined different and multifaceted factors in three categories: retention, turnover decision, and factors that mediate between turnover intention and retention. The retention of frontline emergency workers during an epidemic is dependent on essential factors such as job satisfaction, organizational commitment, managerial support, psychological well-being, and resilience.

Introduction

Infectious diseases with epidemic potential have affected human societies in different periods.[1] As the most significant, and vital resources in fighting against epidemics, frontline healthcare workers have a substantial effect on these diseases, are exposed to a considerable risk of infection, and are the victims of the spread of this disease field.[2] Based on the World Health Organization, healthcare workers in affected societies were 21-32 times more at risk of contracting Ebola than those in the society.[3] SARS and MERS respiratory infections were mainly hospital-based, and healthcare centers were a considerable, transmission environment with 33-42% transmission rates in SARS and almost 50% in MERS.[4] Frontline healthcare workers were twice as likely to be infected during the H1N1 influenza pandemic,[5] and the risk of COVID-19 among healthcare workers is 10 times higher than in those providing health services.[6] Emergency personnel, both as citizens and as a part of frontline healthcare workers, encounter many challenges in the face of these epidemics.[7] The result is an increase in turnover intention,[8] and unfavorable care to patients.[9] Turnover intention refers to the conscious will to leave the organization, leading to planning to withdraw from an organization, and is known as the strongest predictor of actual leave.[10] In a study, the annual cost of leaving a job, including hiring, training, and productivity, is approximately 5% of the yearly operating budget in a healthcare center.[11] In addition, a high rate of turnover intention has been reported among frontline healthcare workers involved in treating patients with infectious diseases. The increase in turnover intention, especially in the COVID-19 epidemic, has become a challenge and an obstacle to developing health systems and imposes a heavy burden on society.[12]

Based on the reports, it is expected to see a net shortage of 15 million health workers worldwide by 2030, which requires attention to the recruitment and retention of health workers in addition to providing health workers and increasing productivity to provide essential health services.[13] Considering the role of frontline healthcare workers in responding to and hindering epidemics, studies on maintaining these workers should be prioritized.[14] Thus, it is necessary to understand the factors that increase or decrease the willingness to work in an infectious disease epidemic.[15] Previous studies have identified several factors associated with healthcare worker retention and turnover during infectious disease outbreaks. However, there is limited research on the global prevalence of intentions to stay or leave emergency personnel during epidemics. Therefore, this systematic review aims to comprehensively identify factors associated to stay or leave emergency personnel in the context of an outbreak. Effective intervention strategies to increase the intention of responders to stay in their positions during epidemics may be informed by the results of this review.

Materials and Methods

Design and population

A systematic review was conducted to assess published studies on the willingness of emergency personnel to retain or quit their jobs during infectious pandemics. The protocol of this study was used on the PROSPERO website, and the code CRD42022313552 was received. After extracting the data, conclusions were drawn based on moderate and high-quality studies. Health workers on the frontline of epidemic response and in emergency departments were the study population in this review.

Data sources and searches

This systematic review followed the PRISMA statement (preferred reporting items in the report of systematic review and meta-analysis articles).[16,17] A systematic literature search was conducted from the onset of the database until March 2022 using three databases (Scopus, PubMed, Web of Science) and Google Scholar to complete the search results. No limitation was applied to the publication date, and only English-language articles were included in the study. The search strategy combined three categories of keywords (emergency personnel, retention and turnover intention, and epidemics) and the related keywords using the operators (mesh terms, AND, OR) were written in the PubMed database and operators (AND, OR) in the Web of Science; and Scopus databases. Manual searching and reviewing of reference lists were employed to identify additional relevant studies. Due to the difficulty of implementing advanced search operations in Google Scholar, the researchers combined three categories of keywords and reviewed the first 400 studies to complete the results (*Appendix 1 of the Supplementary Materials*).

Screening and data extraction

This systematic review involved quantitative and qualitative studies. To be eligible for inclusion in this review, the papers had to be in English and have taken place in a hospital or pre-hospital setting. Sampling was not restricted; therefore, all sampling methods are acceptable for the studies in the analysis. Only articles relating to outbreaks of infectious diseases were considered eligible. The review also included articles that examined frontline healthcare professionals, including nurses and doctors, and identified the factors that affect their retention or their intention to leave

the profession. Exclusion criteria were studying whose original text was not accessible, written in languages other than English, and failed to report the aspects related to retention and turnover intention among emergency personnel during epidemics. The review excluded certain study designs, such as dissertations, guidelines, and study protocols. and those that focused on the employees in other hospital departments except the emergency department. Two reviewers worked together to screen and select studies after removing duplicates. Furthermore, the screening and evaluation of the title, abstract, and main text were independently conducted by two reviewers, and disagreements on determining which study should be excluded or included were resolved by a third person.

Quality assessment of all studies independently conducted by two authors. The AXIS tool was used for the critical evaluation of cross-sectional studies in this study. The checklist has 20 questions for scoring the research design, sample, measurement, and statistical analysis and can be used in health studies for systematic review.[18] The total score was 20 and studies with a score of 14-20, 8-14, and less than 8 were classified as good, moderate, and low in terms of quality, respectively (*Figure 1 of the Supplementary Materials*). In addition, the quality assessment of qualitative studies was conducted by the Cochrane Quality Methods and Implementation Group (CASP instrument) because it is the most commonly used tool for quality assessment when combining qualitative evidence related to health research. The instrument includes 10 questions with two yes and no answer ranges.[19] Therefore, the studies with a score of 9-10, 7-8, and less than 7 have good, moderate, and low quality, respectively (*Appendix 3 Figure 2 of the Supplementary Materials*). To reduce bias, quality assessment was performed independently by two investigators, and any disagreements about eligibility were resolved by consensus or by seeking the opinion of an additional investigator. In addition, three reviewers discussed the quality assessment results of the articles, and Discussions were held until a consensus was reached among the three reviewers. The validity of data extraction was reviewed by the remaining investigators to ensure accuracy and completeness.

Data on the author, year of publication, location of analysis, sample size, assessment tool, study design, and associated findings were collected and synthesized after evaluating the full text of the selected studies. (*Appendix 5 Appendix 2 of the Supplementary Materials*). The full text of the articles was assessed by two reviewers. In case of disagreement, the research article was assessed by a third reviewer, and a discussion was held between all three reviewers until a consensus was reached. A narrative synthesis was performed to analyze the results of the studies because of the heterogeneity of the study populations, study designs, tools used, statistical methods, and measurement outcomes.

Results

The selection process of the study

The search strategy identified 833 studies from three databases (Scopus=133, Web of science=177, PubMed=523), resulting in 687 records after removing 146 duplicates using EndNote software (version). Then, four studies were added to the studies mentioned above after evaluating the first 400 records extracted from Google Scholar. Thereafter, 162 studies were reviewed at the title by two independent researchers to exclude irrelevant records. In the following procedure, the abstracts were examined, and 69 were selected for full-text evaluation. Finally, 34 studies that met the

inclusion criteria considered appropriate to the research design and question were selected (Figure 1).

Quality assessment

Among the cross-sectional studies, 10 studies had a score above 14 (high quality), and 22 studies had a score of 8-14 (moderate quality). Two qualitative studies had a score of eight (moderate quality). The most common limitations of moderate-quality cross-sectional studies include the lack of detailed information regarding the sampling approach used to select participants, the lack of sufficient information about the process of selecting participants to be representative of the target population under study, low response rates that lead to and Increasing concern regarding non-response bias and biased results, failure to provide sufficient information about measures taken to assess and classify non-responders, also did not provide detailed information on the instruments or measurements used to measure the risk factor and outcome variables. In addition, the limitation of the qualitative studies was related to the inappropriateness of the research design, the lack of consideration of the relationship between the researcher and the participants, and does not provide explicit information on the ethical issues that were considered in the study (*Appendix 3 of the Supplementary Materials*).

Characteristics of the studies

A total of 32 studies were quantitative with cross-sectional designs. while two were qualitative. Six studies were conducted in Taiwan,[20-25] four including two quantitative studies[26,27] and two qualitative studies[28,29] in Iran, and three in the Philippines.[30-32] Two studies each were or conducted in America,[33,34] Egypt,[35,36] Lebanon,[37,38] South Korea[39,40] and Pakistan.[41,42] One each was conducted in Israel,[43] Italy,[44] Switzerland,[45] Turkey,[46] Saudi Arabia,[47]
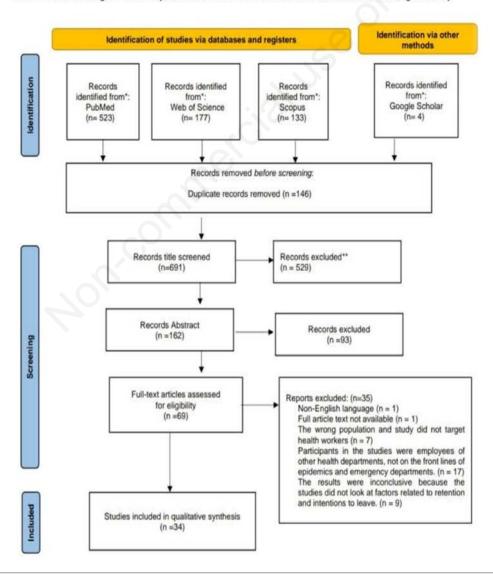

Figure 1. PRISMA document flow diagram of the selection process results.

Qatar,[48] Japan,[49] China,[50] Peru,[55] Bolivia,[51] and Germany.[52] Of the 34 studies that were evaluated, one study was conducted exclusively with front-line physicians, 27 studies were conducted with nurses, and 6 studies included front-line medical staff. The sample sizes of the studies varied from 15 people in the qualitative studies to 20,664 people in the quantitative studies.[28,33] The majority of participants in the studies reviewed were women, with more than 60% of participants being female in all studies, and only one study had more male participants, with 46% of participants being female.[44] Three studies were related to the evaluation of turnover during the SARS epidemic,[20,23,24] and one study evaluated the relationship between post-traumatic stress and turnover intention in the MERS epidemic.[39] In addition, 30 studies were related to turnover during the COVID-19 epidemic. Out of these studies, one study compared the state of affairs before and after the epidemic and the willingness of nurses for retention or turnover intention.[42] In addition, one study compared the willingness of nurses to be retired or the intention to move to another job who worked in the COVID and non-COVID departments.[53] Eight studies focused on the relationship between the factors and retention or turnover intention among the personnel.[21,27,34,35,44,45,48,49] Of the 30 studies identified, 21 studies reported factors related to the retention of emergency personnel.[22,2,5,26,28-33,37,38,40-43,46,47,51,52] All these studies reported willingness of emergency personnel on retention or turnover intention during epidemics as a key factor related to the retention or turnover of staff (*Appendix 5 of the Supplementary Materials*).

Outcome measures

All the studies included in this review were of moderate to high quality, and none were excluded because of low quality. The 34 studies were divided into three categories by the team of researchers. In the first category, 24 factors were identified that were associated with staff turnover during an epidemic. In the first category, 24 studies identified factors associated with employees' decision to leave their jobs in the context of epidemics, including fear of COVID-19,[36] social relationships, and risk of death from SARS,[30] frequency of patient care,[21,49] job stress,[44] lack of options during relocation, and lack of response from management.[45] Job stress and work pressure,[21,27] conditions related to the epidemic and workload,[22] number of working days,[51] increased stress levels.[26,48] In addition, young employees and low resilience scores,[38,53] low pay, and part-time work,[52] perceived discrimination,[31] fear of infection,[25] emotional exhaustion,[46] loss of independence at work[34] factors were identified. The second category consisted of eleven studies. These studies identified factors associated with job retention. Research has shown that employee retention can be improved by factors such as resilience,[37] COVID-19 training,[43] professional commitment,[39] knowledge sharing,[23] organizational and management support,[25] motivational measures and flexible management principles,[28] increasing job satisfaction,[46] motivational factors,[29] social support,[40] and feeling valued by the organization,[33] have also been found to contribute to employee retention. In the third category, six studies highlight the mitigating effect of certain factors in reducing the intention to leave. Based on the results of these six studies, it was found that supervisor support acts as a buffer between high levels of post-traumatic stress and turnover intentions;[39] psychological well-being acts as a mediator between perceived threat and turnover intentions;[41] resilience acts as a mediator between perceived discrimination and the likelihood of leaving the job;[31] satisfaction and organizational commitment act as mediators between patient care intentions and workload;[27] supervisor support moderates the effect of fear of the epidemic on turnover intentions;[42] and psychological resilience acts as a mediator between compassion fatigue and turnover intentions.[32]

The results of the study indicate that key factors contributing to the retention of emergency workers during an infectious disease epidemic are job satisfaction and organizational commitment, supervisory and management support, well-being, and psychological resilience, which not only support staff retention but also act as a moderating influence on pandemic turnover.

Discussion

In this study, the results of 34 studies of moderate and high quality were analyzed. This study focused on 34 studies from different countries of high and medium quality. Among the various identified factors, the factors affecting the emergency personnel's willingness to be retained or high turnover on jobs during pandemics are multifaceted and include various personal psychological, occupational, social support, and leadership factors. The results of the study indicate that factors such as fear of the lethality of the epidemic, clinical stress, anxiety, psychological characteristics, working conditions related to the epidemic, total number of working days, and the age of the workers[22,23,25,26,41,42,44,47,48] have a significant influence on the willingness of emergency workers to leave their jobs during epidemics. These findings are consistent with the findings of previous studies in which the negative effect on the mental health of nurses was a predictor of turnover intention in the COVID-19 epidemic,[54] the risk of infection with COVID-19 strengthens the turnover intention among health workers,[55] stress, anxiety, and job burnout were identified as the main factors of turnover intention among health care workers,[56] higher levels of support had a considerable effect on the retention of nurses during the epidemics,[57] and job stress, workload, and social support affect the turnover intention of health care workers during the epidemics.[58] In addition to determining the prevalence of turnover intention among general practitioners, the systematic review introduced lower income levels and lower job satisfaction as related factors.[59] The systematic review indicated that individual and organizational factors affect the retention of nurses during epidemics.[60] Moreover, the systematic review with the aim of a comprehensive review of studies related to the willingness of personnel to work in emergency conditions was one of the challenges of preserving healthcare workers and the manager's relationship with the employee.[61] According to the study's findings, leadership and supervisor support, resilience, psychological well-being, and psychological resilience were identified as the most critical factors in maintaining employee job satisfaction and organizational commitment. These findings are consistent with previous research confirming that professional identity includes individual perceptions, social values, and other professional factors that indirectly increase retention through job satisfaction.[62] In addition, organizational commitment is effective in promoting the retention of nurses throughout their careers.[63] Organizational commitment is important for the retention of nurses, particularly in the event of a disaster.[64] There are also consistent findings from numerous studies identifying factors associated with the retention of frontline health workers. A study suggests that healthcare workers are more likely to remain in their jobs if they believe their organization has effective pandemic preparedness and support in place.[65] Another study also found that resilience has a significant impact on the level of burnout and turnover intentions of senior nurses.[66] A research also

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found evidence of an intermediate role for organizational commitment in the relationship between ethical leadership (demonstrating justice, respect for others, honesty, and humanity) and intention to leave the nursing profession.[67] Healthcare professionals who show organizational commitment are more likely to be retained.[68] Furthermore, career commitment was also found to play a significant role in mediating relationships between social support and retention, and between resilience and retention.[69]

Many studies have identified the factors related to retention and turnover intention among health workers, physicians, and nurses, in epidemics. In addition to identifying factors associated with intention to leave and retention among frontline epidemic frontline staff, this systematic review identified mediators influencing staff willingness.

Limitations

In this systematic review, only studies published in English were included; therefore, we excluded studies in other languages, which could be a source of publication bias. Most of the studies were conducted among nurses during the COVID-19 epidemic. Due to the limited number of studies related to the emergency department, we reviewed and included studies using a broad criterion that focused on emergency department staff, including physicians, nurses, and frontline health workers (related to emergency personnel and frontline staff). This study did not perform a meta-analysis because of considerable heterogeneity. The strengths of this study include the availability and variety of studies conducted in low-, middle-, and high-income countries, which increases the generalizability of the results of this study.

Conclusions

This study focused on 34 studies from different countries of high and medium quality. The results of this study identified job satisfaction and organizational commitment, social support, supervisor support, leadership support, psychological well-being, and resilience as the most important factors associated with the retention of frontline workers in epidemics. Not only were these components identified by the studies as components associated with staying, but they were also found to mediate the main components of intended turnover during the epidemic. Therefore, when developing strategies to retain emergency personnel during epidemics, social and organizational support and resilience should be considered. It is also recommended that a comprehensive and multifaceted framework of the identified factors and their interrelationships be considered.

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Online Supplementary Materials
Appendix 1: Search Strategies
Appendix 2: Characteristic of the selected studies
Appendix 3: Quality assessment
Appendix 4: PRISMA 2020 CHECKLIST
Appendix 5: Studies included