MERIT RESEARCH JOURNALS
www.meritresearchjournals.org

Merit Research Journal of Medicine and Medical Sciences (ISSN: 2354-323X) Vol. 11(3) pp. 076-085, March, 2023
Available online http://www.meritresearchjournals.org/mms/index.htm

DOI: 10.5281/zenodo.7778809

Original Research Article

Healthcare Workers' Readiness and Emergency Preparedness at the National Center for Disaster Management, Riyadh: A Cross-Sectional Study

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Abstract

The term "disaster" a widespread destruction of the environment, economics, healthcare, and social infrastructure that may disrupt the individuals' or whole communities' ability to use their resources to overcome such events. Disaster preparedness usually includes a variety of activities, programs, and systems that should be implemented before an event occurs. As soon as such policies are developed, they should be implemented into the healthcare system and all healthcare workers should be trained in their implementation. The current study investigated emergency preparedness and factors which may affect healthcare workers' readiness at the National Center of Disaster Management in Riyadh district. This study used a descriptive cross-sectional design. The survey was conducted in December 2022 on an online platform with primary data collection and a non-probabilistic purposive sample. The study involved 80 healthcare workers from the National Center for Disaster Management in Riyadh district. The responses were quantified using descriptive statistics including frequencies, means, percentages, and standard deviations. According to the survey, 41 (51.2%) of respondents reported they were somewhat prepared, while 22 (27.5%) reported they were somewhat unprepared. More than one-quarter of the healthcare workers 23 (28.7%) did not take any training in disaster management. There were some gaps in disaster preparedness among healthcare providers. In the study, healthcare workers did not perceive themselves as fully prepared for disasters and were unaware of disaster management protocols. During disaster preparedness, recommendations are made for enhancing clinical and educational efforts in healthcare workplaces.

Keywords: Disaster, Disaster Preparedness, Healthcare Providers, Saudi Arabia

INTRODUCTION

According to the different scientific definitions, disaster is defined generally as any emergency whatever due to man-made or natural causes which mainly occurs without warning. Moreover, it is usually related to a high risk for the future mental problems incidence (Cruz et al., 2022).

Globally, those disasters occur increasingly often, intensify, and occur on large scales. Every year, it causes approximately 75,000 deaths worldwide, affecting more than 255 million people. A major concern is how to respond effectively to disasters (Wang et al., 2021). A vital step in managing disaster consequences is to ensure that the health care system and workers are

prepared to handle disasters accurately and respond effectively. Health care workers will be able to develop a number of skills that will be useful for dealing with the disaster aftermath, minimizing the morbidity and mortality among their communities through on-time and effective responses. In order to accomplish this, health care workers need to gain knowledge of disaster preparedness (Goniewicz and Goniewicz, 2020).

Thereafter, several emergency scenarios are imagined, and then policies are designed to deal with the different emergency and disaster scenarios. In order to manage and redesign emergency scenarios efficiently and cope with the required resources, health professionals, decision makers and hospital administrators must be willing to handle and assess the emergency scenarios (Santinha et al., 2022).

On the other hand, the poor disaster planning or ineffective resources use leading to negative consequences during the disaster emergencies. For that, reviewing the emergency scenarios at both local and global level, and understanding the factors affecting disaster preparedness is very critical aspect. WHO tried to fill these gab through introducing a free up dated educational material with very high quality to help healthcare workers and the policy maker in preventing the disaster occurrence as a first priority or initiating effective response for the different emergency types. The conclusion of those recommendations always initiates the cooperation between the health care system items and the whole community and increase the health professionals willingness to improve their skills (Santinha et al., 2022).

Unfortunately, there are gabs between the education or the training programs and the actual application of the policies. Such gabs present in many healthcare systems including the Saudi healthcare system. Those gabs may present in different phases of disaster management including lack of education, preparedness, research, and expertise in both the clinical and academic fields. As a result, this study aimed to investigate the emergency preparedness and factors which may affect health care workers' readiness in at the National Center of Disaster Management in Riyadh district, KSA through preparing an online survey.

The Disaster Definitions: An Overview

According to the Center for Research on the Epidemiology of Disasters (CRED), more than 200 million people are affected by negative disaster outcomes on average each year. The number of these cases increases every year, unfortunately. All over the world, disasters vary from country to country, including earthquakes, storms, typhoons, floods, droughts, traffic accidents, terrorist attacks, coal mining accidents, etc. As a result of such disasters, there may be mass casualties, property damage, and chaos, resulting in long-term physical, social, economic, psychological, and environmental effects (Sultan et al., 2020; Wang et al., 2021).

Whatever disaster as a term is used to describe different statues, WHO (the World Health Organization) pinpointed a distinguished definition for disaster term as a widespread environmental destruction including economic, healthcare and social infrastructure destruction besides life loss which may disturb the individuals or the whole community ability to use their resources to overcome such events. On the same side, the UN (United Nations) established a similar definition for the disaster term in the UN disaster reduction strategy. In these strategy they stated the definition of the disaster as critical disruption of the society or community functioning including the economic human, environmental or material losses and its effects that exceeds the society or community ability to deal with by using their own resources (Banajah, 2018).

Whenever any disaster occurred, several changes should occur in all over the community responses to such disaster including the health care system. For that, a declared well-defined plan should be present to deal with such situation. These plans should include different changes chain reactions that organize the work in different ways than the everyday work. Those may include different work flow in the emergency department, increasing the human resources, increasing in the number of beds in such way not affect the quick response to the disasters besides other changes necessary to face such disaster (Hammad et al., 2018).

Referring to the experts, there are two main type of disasters which includes manmade and natural disaster. The manmade disasters that was caused due to the human actions especially due to the human negligence or a system problems. The manmade disasters may include chemical, radiological and biological accidents. On the other hand the natural disaster which may include storms, famines, earthquakes, pandemics, landslides, tsunamis and volcanic eruptions (Labrague et al., 2016).

Another type of disaster is known as the internal disaster which occurs within the hospital itself. It may happen due to the sudden patients influx that exceeds resources and capacity of the hospital which limits its capability of function normally (Brewer et al., 2020).

Despite these classification, the actual and recent disasters become more complicated and sophisticated situation according to their nature. As each disaster could be caused by different factors fused together not only due to single distinct cause (Sawalha, 2020).

As common to the public health emergency including pandemics and outbreaks or any other crises such as natural, or man-made disasters as the chemical or radio nuclear disasters, the pressure and demand will be stressed on the healthcare system especially the emergency medical departments and in the front of

their staff is nurses (Santinha et al., 2022).

Disaster and Healthcare Response

Several situations could prove the importance of the disasters preparedness to ensure a timely and efficient response of organizations and individuals to the different disasters. The disaster preparedness also could minimize the damage that may occur (Kawasaki et al., 2022).

For that, the critical need for spreading the awareness and attentions about the disasters preparedness among the healthcare workers increased tremendously especially during our modern era which full with many different kind of disasters. So that the health care workers need to be trained and prepared very well to provide their services effectively and on time to their affected communities without disturbance or problems to enhance the ability of their communities to face and overcome or decrease the disaster consequences (Goniewicz and Goniewicz, 2020).

Such need was supported from many health care workers owing to their desire to face disasters with their communities and decrease the individuals and families' morbidity and mortality. One of those evidences coming from an Omani study conducted on 51 nursing student. These study revealed the wellness of those student to participate in facing disasters even with their moderate knowledge with how to manage the health care services in the disasters. By the time those student develop their confidence and skills to handle the disaster (Kamanyire et al., 2021).

For that, WHO initiated the healthcare systems to prepare their workers and in the front the medical staff to deal with disasters and ensure their preparedness against any emergency that may occur during their casual practice. Moreover, WHO recommended involving the disasters preparedness and emergency responses in the curricula of the health care members education particularly the nursing staff as they are always considered as the first line and critical part in the health care system. Furthermore, WHO had declared that the health care systems will be considered to be prepared if their nurses are prepared (Cruz et al., 2022; (Sultan et al., 2020; Banajah, 2018).

As a consequence at some countries, different measures were implanted into the health education to develop the healthcare workers emergency skills against various emergency senior or as part of the emergency medicine training in postgraduate practice (Santinha et al., 2022).

However, accumulating evidence from different studies have demonstrated the presence a critical gap between the health care education or the stimulated training, and the actual requirements in the emergency states yet (Wang et al., 2021).

The Disaster Preparedness

Unfortunately, in the last century, humans had suffered several pandemic outbreaks such as avian influenza, Middle East respiratory syndrome (MERS), Severe acute respiratory syndrome (SARS), and COVID-19. Those pandemics represented in the past and still represent till now a vital threat to human beings' health and existence. Besides, those pandemics represent a hug challenge for the health care systems including their workers to deal with such pandemics. These threats not only for the health pandemics but they also include the disaster and its consequences which also represent the same threats and more (Li et al., 2020).

For that, the effective and on time response of the health care workers for the different disasters is a very sophisticated challenge facing the health care system even in the most well – prepared systems. The disaster preparedness is usually including various programs, activities and systems should be developed before the event occurs. After developing such policies, it should implement in the health care system and train all the health care workers in the place for those polices. Besides, those policies are need to be evaluated periodically to investigate their effectiveness and find the gabs in those policies and try to overcome them. The disaster preparedness is also included an effective planning to provide an appropriate logistics chain supplies, and coordinate the overall emergency response procedure in the disaster place (Goniewicz and Goniewicz, 2020).

In addition to, the developing process for the health care workers' competencies in the disaster response takes several steps, as generating the adequate healthcare workers' competency for disasters responding. Besides, the process should include a hierarchy of disaster preparedness skills, from basic skills to advanced (Banajah, 2018).

Several methods and strategies could be used to increase the disaster preparedness and the health care competences. One of them is using the most available ways to prevent disasters occurrence or reduce their effects through spreading the disaster education. The disaster education includes steps and strategies that aim to decrease disasters consequences via changing the system resilience beside the disaster recovery capacity as building adjustment against the risks, improving the cooperation among the whole community in the allocating resources and educating the vulnerable groups how to make effective actions during the disaster to decrease any harm may occur to them. These strategy is a part of the United Nation International Disaster Standard Framework (UNISDR) (Torani et al., 2019; Banajah S, 2018).

Several training and education programs had been established to ensure the healthcare workers competence which enable them to deliver an effective

response for the different disaster. Those programs were delivered by different and various organizations and institutions. These trend may produce different attitudes and different policies even in the same country (Banajah, 2018).

For example, in USA before 2001 there was not a uniformed disaster preparedness program but it was only an individual attempt to each healthcare team to put a vision how to deal with crises according to their previous experience in disaster relieving or due to their previous military services in which they learned how to deal with crises in an organized manner. While after September 11 events at 2001, USA committed to have a national plan to face different crises. They released a stricter standards to overcome disasters from TJC which know as The Joint Commission (Balut et al., 2022).

Besides, they created a new division in the US Department of Health and Human Services known as the Office of the Assistant Secretary for Preparedness and Response. Moreover, In 2004, USA had established the Comprehensive Emergency Management Program through the US Department of Veterans Affairs. These programs aimed to ensure the continuity, resiliency and the rapid recovery of the facilities and healthcare services during disasters. Furthermore, USA put a condition to give their accreditation to the healthcare institution is to run a stimulation for crises situation to investigate the organization emergency plan annually. These exercise includes a full community-based scale exercise or may be facility based functional test each other year. All those investigations were conducted by both Centers for Medicare and Medicaid Services and TJC. Those exercises could be done as a tabletop exercise or a mock disaster exercises. In addition, there are also a training conducted by standards boards of each state as requirement for clinicians license (Balut et al., 2022).

From the previous example, we could conclude the importance of implementing the disasters preparedness program in the healthcare system. It also defined an important obstacle in implementing such program due to the various training programs and education which may result in non consistent competencies of the healthcare workers until 2009. At 2009, the International Council of Nurses conducted their Framework of Disaster Nursing Competencies which known as ICN Framework beside the American national standardized “all-hazard” disaster core competencies (Banajah, 2018).

According to the ICN Framework the disasters nursing competency are located into 4 sets and 8 domains. Those sets include.

1. Mitigation/prevention

In this practice set the policies and plans will be development. Also it includes plans to decrease the risk and disease prevention. Another important practice in this set include health education promotion

2. Preparedness

In this practice set the ethical, legal practice will be defined beside their accountability. Also, in this set the preparedness education will be promoted and shared the information.

3. Response

In this practice set the nursing will perform the health care for the whole community particularly the vulnerable populations besides the psychological car.

4. Recovery/rehabilitation

In this set the practice will care about the long-term recovery of the communities.

The healthcare workers should corporate together to perform the next 8 domains to ensure the adequate disasters competency in Table 1.

Another important aspect in the disaster preparedness program is the evaluation process. The emergency responsiveness itself is considered to be a vital functional and financial indicator for the healthcare system particularly in how the emergency departments handle the disasters. Usually, these evaluation is a considered as processual evaluation which concerned with specific care process and its outcome for example the response time for ambulance and the waiting times for each patient (Santinha et al., 2022).

However, the most common concept in the disasters preparedness training is the disaster management.

Disaster Management

Each year, millions suffer from disaster due to the insufficient coping with the disaster and its consequences. This demonstrated knowledge sharing lack and inability to develop effective management strategies of disaster. Management as a term indicates obtaining the correct knowledge at the correct place and time. Management strategies aim to facilitate the creation, making use and sharing of knowledge process. This management strategy depends on adequate preparedness planning and studied actions. In addition, management also depends on creative practitioners who learn lesson from the real participation in the different emergency situations and tend to improve their skills and knowledge constantly (Oktari et al., 2020).Concerning the disaster management, there are several of models, frameworks and procedures to handle the disasters. One of the most widespread frameworks is the cycle of disaster management. The disaster management cycle involves five phases. Each phase in the cycle includes several action plans and procedures which may vary among different disaster agencies, organizations and academic references in the same country as mentioned before

1. **Prevention.** It involves procedures and plans conducted to prevent the disaster occurrence before it happen

Table 1. The disasters competency domains

Domain No.	Domain	Actions
1	Preparation and planning	actions taken according to certified organization to increase confidence and readiness in actions taken during the event
2	Communication	Techniques used to transfer the essential information among the workers and decisions makers
3	Incident management systems	the effective action should be taken as a disaster response taken by countries, institutions and organizations
4	Security and Safety	assuring that the healthcare workers and patients be away from any unsafe practices
5	Assessment	Collecting the data about assigned patients to assess the nursing actions consequences
6	Intervention	clinical actions or others taken as a response to the assessment done
7	Recovery	any actions taken to facilitate the return of the community or the organization functioning as before the event or move it to higher level
8	Ethics and Law	the ethical and legal framework for disaster or emergency nursing

2. **Mitigation.** It involves minimizing the disaster effects through public education and follow the building and zone coding

3. **Preparedness.** It involves adequate planning as a response for the disaster such as establish emergency training , warning systems and preparedness plans.
4. **Response.** It involves different efforts exert to decrease the disasterhazards such as emergency relief
5. **Recovery.** It involves returning the normal state of the community as before the disaster occurred (Sawalha, 2020).

Factors Affecting Disaster Preparedness Program

Despite the presence of several guidelines to assist healthcare workers in handling the emergency situations, there are different factors that may affect the practice of the healthcare workers during the actual practice of the polices. The disaster preparedness practice may be affected by various factors including individual characteristics andorganizational factors, and community and familial factors (Sultan et al., 2020).

Individual Characteristics

Many studies demonstrated the significance of the personal characteristics on the healthcare workers disaster preparedness. Among the individual characteristics factors are age, education, gender and experience are the most important factors. Studies claimed that the more experienced practitioners, the more effective response conducted by these staff. Other studies also mentioned an effect for the demographic state on the healthcare workers responses, as the rural region usually suffer from logistic and training lack (Sultan et al., 2020; Li et al., 2020).

On the other hand, the psychological condition of the healthcare workers is a vital factors which affects the willingness of the healthcare workers to participate in the disaster fighting for example some healthcare workers in China in the Bangkok flooding disaster in 2011. The healthcare workers felt worry about the safety of themselves inside the hospitals besides worrying about the locations and safety of their relatives during the disaster (Sultan et al., 2020).

For that improving the safety feeling among healthcare workers for increasing their willingness to participate in the event. as consequence, the vaccinated state beside self efficacy also consider as important factors (Li et al., 2020).

Without doubts, the mental health of both healthcare workers and patients is critical factor. For example, during the COVID-19 pandemic one of the most vital factors that affect the overall health outcomes. So maintaining the mental health burden for patients and healthcare workers beside preventing the healthcare workers burn out became an important concern during fighting the pandemic (De Brier et al., 2020).

Organizational characteristics

As mentioned before, as the willingness of the healthcare workers increase, more effective outcomes will be obtained. One of the ways could be used to increase that

willingness is by increasing the confidence between the organization and their workers. This confidence could be built through providing adequate disaster preparedness program training for the organization staff previously before the disaster occurred. The ability of the organization to provide the adequate personal protective equipment (PPE) in a correct quality and quantity during the disaster. Also the mutual trust between the organization and their workers also had a significant role beside the way the workers could communicate and transfer information among them (Li et al., 2020).

Community and Familial Factors

Meanwhile, the spreading of certain cultures and molars among the community individuals encourage the cooperation and the willingness of sacrifices to help others during emergency, also the presence of certain culture and religious culture will affect the outcomes of fighting disaster. Moreover, some researchers studied the effect of the nurse perceived image of the from community besides having different moral considerations and fears of being blamed. Some study could prove a minimal effect of such factors on the nursing performance during the disasters. Moreover, the researches could prove the effect of the well nursing training and education to overcome such situations (Li et al., 2020).

On the other hand, promoting good behaviors among the community individuals could give a very positive outcomes such as the concept of social resilience. The term social resilience could be defined as the social mechanisms and social entities ability to anticipate, cope and mitigate the disasters effectively. Besides the ability of implementing some recovery activities which minimize the social disruptions and decreasing the future disasters impact (Saja et al., 2019).

Disaster Preparedness Program in Saudi Arabia

Unfortunately, KSA as other countries had recorded many disasters as flooding and fires. Besides, KSA considered as a huge growing healthcare market. KSA also have a well defined health authorities represented with the Saudi Ministry of Health (MOH) which offer about 80% of the healthcare services in the kingdom for free in its different hospitals all around the kingdom. Despite, the presence of differentdisaster preparedness program and exercises which conducted almost yearly in some healthcare agencies which promote the ability and preparedness of those agencies to handle various disaster types effectively, the Jazan General Hospital fire accident reveal a different view. This accident demonstrated response deficiencies besidedefects in the disaster preparedness and planning. It also revealed the inability of the Saudi healthcare workers of the adequate plan andthe proper application of those plans for unpredicted situations (Sultan et al., 2020)

As a measure of the disaster management importance and preparedness, the current study investigated emergency preparedness and factors which may affect health care workers' readiness at the National Center of Disaster Management in Riyadh district.

METHODS

The design of this study was descriptive cross-sectional. Using a non-probabilistic purposive sample, primary data were collected online from October 2022 to January 2023. The study involved 80 healthcare workers from Riyadh's National Center for Disaster Management.

In addition to demographic data, participants were also asked about their preparedness for disaster management. The easy process of completing surveys online makes it convenient for busy professionals. The questionnaire's content was developed based on similar studies (Hammad et al., 2011; Magnaye, et al., 2011; Arbon et al., 2011). A pilot study of the questionnaire was conducted at the disaster center where the first author works.

The Central IRB approved the study protocol with Log No: 22-51 M, in October 2022. Participants' rights were protected by describing the nature, benefits, and lack of known risks of the study.

Between October 2022 and January 2023, four months were spent collecting data. Participants were assured of anonymity, which encouraged integrity. Data from the survey were analyzed quantitatively using SPSS V.22 (Statistical Package for Social Scientists).

RESULTS

The demographic characteristics of the respondents are shown in Table 2. This study involved 80 healthcare workers over a four-month period. The majority of participants (63.7%) were between the ages of 26 and 35. 42 (52.5%) of the participants were female. Nearly half of the participants 41 (51.2%) had work experience between 1 and 5 years. In terms of education level, nearly 3 out of 4 (61, 76.3%) had a bachelor's degree.

Participants' perceptions of disaster management knowledge and attitudes are shown in Table 3. In terms of the most involved organizations in disaster situations, 67 (23.9%) reported the National Crisis and Disaster Center. Meanwhile, 52 (18.6%) responded with the ministry of health. However, 50 (17.9%) chose the red crescent. In response to the question, "Are you prepared for disasters at work using the available protocols?", 41 (51.2%) responded with some preparedness, and 22 (27.5%) responded with some lack of preparedness. In response to the question, "What is your role as a

Table 2. Participants' Characteristics

Item	Frequency	Percentage
Age		
20-25	7	8.8
26-35	51	63.7
36-45	18	22.5
46-60	3	3.8
More than 60	1	1.3
Gender		
Female	42	52.5
Male	38	47.5
Years of experience in healthcare profession		
<15 years	4	5.0
1-5 years	41	51.2
11-15 years	12	15.0
6-10 years	23	28.7
Qualification		
Bachelor degree	61	76.3
Master degree	7	8.8
Ph.D degree	3	3.8
Technician degree	9	11.3

Table 3. Participants Perceived knowledge and attitudes toward Disasters.

Item	Frequency	Percentage
What do you think, the organizations that are considered most involved in disastrous situations?		
National Crisis and Disaster Center	67	23.9%
Red Crescent	50	17.9%
Ministry of Health	52	18.6%
Ministry of Internal Affairs	30	10.7%
Civil Defense	35	12.5%
the police	31	11.1%
Ministry Of Agriculture	7	2.5%
Ministry of Chemical Energy	8	2.9%
Are you prepared for disasters at work using the available protocols?		
Fully prepared	11	13.8
Somewhat prepared	41	51.2
Somewhat unprepared	22	27.5
Totally unprepared	6	7.5
In your opinion, what is your role as healthcare provider during disaster preparedness		
Educator	20	16.0%
Caregiver	49	39.2%
Counselor	7	5.6%
Coordinator	31	24.8%
Manage	13	10.4%
Researcher	5	4.0%
In your opinion, What do you need to be prepared for any possible disaster		
Drills	62	24.0%
Disaster management protocol	52	20.2%
Disaster management course	49	19.0%
Informational website	36	14.0%
Information pamphlets	30	11.6%
Onsite visit	29	11.2%
In your opinion, what are the educational courses that should be taken in preparing for disaster		
First aid	35	9.9%
Field triage	41	11.6%
Basic life support	39	11.0%

Table 3. Continue

Advanced cardiovascular life support	35	9.9%
Prehospital trauma life support	40	11.3%
Disaster management	70	19.8%
Infection control	31	8.8%
Advanced trauma care for nurses	27	7.6%
Advanced trauma life support	36	10.2%

Table 4. Training on disaster preparedness

Item	**Frequency**	**Percent**
Have you participated in disaster management activities at work?		
No	23	28.7
Yes	57	71.3

Table 5. Association between attending training about disaster management and demographic factors

		Sum
Age	Pearson Correlation	.261
	Sig. (2-tailed)	.019*
Experience	Pearson Correlation	-.011-
	Sig. (2-tailed)	.926
Qualification	Pearson Correlation	.081
	Sig. (2-tailed)	.474

healthcare provider during disaster management preparedness?" The majority of responses came with caregivers 49 (39.2%), followed by coordinators 31 (25.8%), and educators 20 (16.0%).

In response to the question, "What do you need to prepare for any possible disaster?" Responses were recorded for Drills 62 (24.0%), Disaster Management Protocol 52 (20.2%), and Disaster Management Course 49 (19.0%). When asked, "What are the most relevant educational courses to take to prepare for disasters?" Disaster management was represented by 70 (19.8%), field triage by 41 (11.6%), and prehospital trauma life support by 40 (11.3%).

Table 4 shows the percentage of healthcare workers participating in disaster management activities at work. More than one-quarter of healthcare workers, 23 (28.7%) did not receive disaster management training.

The following Table (5) illustrates the association between attending disaster management training and demographic factors. A significant correlation was found between age of participants and disaster management training, P value = 0.01.While there is no significant correlation between attending disaster management courses and having more experience, the majority of those attending are older, have more experience, and have worked longer.

DISCUSSION

There is no equal distribution of disaster impacts across populations. There are usually more adverse impacts on high-risk and highly vulnerable communities as a result of disasters, aggravating societal inequities (National Academy of Medicine, 2021). A call to prepare nurses for disaster preparedness and management will help them better responds to victims' health needs.

At the National Center of Disaster Management in Riyadh, the present study examined emergency preparedness and factors affecting healthcare workers' readiness. A significant difference was found between the ages of the sample when it came to disaster preparedness education and training. According to the results of Labrague's study, nurses' perceptions of disaster management are based on their interpretation of their roles (Labrague, 2016). According to another study, Saudi nurses' preparedness for disaster situations depends on their knowledge and awareness of disasters (Alzahrani and Kyratsis, 2017).

The majority of healthcare workers in the present study did not receive real training in disaster management. According to another study conducted in Saudi Arabia, nurses cannot develop skills in treating disaster victims until they are exposed to real cases,

simulations, or drills. It is unlikely that exercises that lack a practical component, such as tabletop games and lectures, will have the same impact because they lack a hands-on component that will improve knowledge and leadership abilities (Stanley and Wolanski, 2015).

One of the largest annual mass gatherings in the world, the Hajj, falls under the country's disaster management system (Alyami, 2021). During the Hajj, 24 committees are charged with promoting awareness and effective communication in preparation for any possible disasters, according to Benkouiten et al. (2019). However, all healthcare workplaces need more training in disaster management. Healthcare workers should participate in disaster exercises. Additionally, it is suggested that staff from areas with fewer disasters transfer to areas with more frequent disasters for cross-training to gain knowledge and experience (Al Harthi et al., 2021). Therefore, the healthcare workers should have the full preparedness.

CONCLUSION

Healthcare workers' preparedness for disasters can be improved by developing tools for disaster management, emphasizing clear communication, and enacting specific legislation. In the study, healthcare workers did not perceive themselves as fully prepared for disasters and were unaware of disaster management protocols. During disaster preparedness, recommendations are made for enhancing clinical and educational efforts in healthcare workplaces.

Disclosure

A conflict of interest has not been declared by the authors.

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