

## Disaster Management, Role Of Healthcare Administration, Nursing, Paramedics And Operating Room Technician

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### Abstract

During crises like the COVID-19 epidemic, it is imperative to utilize all accessible resources in order to strengthen healthcare personnel. Several variables contribute to this process, such as choosing the groups of experts require, simplifying their licensing and credentialing procedures, determining suitable roles for them, and promoting their health and well-being. The dearth of educational initiatives is a significant problem contributing to the insufficient expertise of healthcare professionals in the realm of disaster preparedness. Therefore, it is imperative to incorporate emergency and disaster preparedness into the core medical school curricula and ongoing medical education programs offered by healthcare institutions. Extended periods of structured education, such as undergraduate and postgraduate degrees, are essential. It is recommended to conduct operational simulations that involve important personnel from many agencies. These simulations should prioritize organizational training rather than individual-based training.

**Keywords:** *healthcare personnel, educational initiatives, COVID-19.*

## Introduction

A disaster refers to a circumstance or incident that surpasses the ability of local resources, leading to the need for external help from a national or international level [1]. Global reports indicate that disasters often result in a severe physical, mental, environmental, and economic crises for the vulnerable people affected [2]. Yemen is a country that is very susceptible to disasters, with flooding being the primary natural calamity. Yemen has faced numerous humanitarian crises in recent decades as a result of poverty, social unrest, and civil strife. In this country, the continuous war has resulted in a significant and intricate humanitarian disaster, leading to the death or injury of thousands of people [3].

During the response to disasters and catastrophes, the primary focus is on providing assistance, support, and medical care to the victims in order to preserve their lives. Consequently, the provision of aid and support during times of catastrophe is mostly executed by rescue or emergency medical teams. In addition, in the case of an emergency such as a fire occurring within the health institution, medical personnel will be at the forefront. Therefore, it is imperative for them to possess extensive expertise in disaster management and have the capacity to promptly and efficiently address any calamity or emergency situation. Health workers must undergo education and training in order to acquire knowledge and cultivate the required abilities to effectively respond to disasters and emergencies [4]. Nevertheless, the absence of training programs focused on disaster preparedness was a significant factor that led to unfavorable results in two regional studies conducted in Yemen to evaluate the readiness of hospitals in dealing with disasters [5].

## Review:

During disaster situations, the willingness of healthcare professionals to respond and continue their work depends on their perception of the risk to themselves and their families, the safety measures in place, the value they place on their

work, the clarity and openness of the information they receive about the situation, and their personal circumstances.

Once healthcare professionals make the decision to remain in their positions, their numbers will unavoidably decline as a result of the large influx of patients and the increased responsibilities they must undertake. This will lead to burnout and a higher rate of healthcare workers leaving their jobs owing to illness, particularly during epidemics. Specifically, 14% of the initial 40,000 confirmed cases of coronavirus in Spain were individuals working in the medical field. Igualada Hospital in Catalonia has placed 30% of its personnel in home isolation. Analogous situations have transpired throughout Europe.<sup>5</sup> The aforementioned examples illustrate the necessity for an increased number of physicians, nurses, and support staff. The majority will consist of volunteers. Volunteers can enhance the existing workforce if a thorough evaluation procedure is conducted, appropriate responsibilities are assigned to them, and they are provided with adequate support [7].

This suboptimal outcome status was documented in several globally conducted investigations with the same objective. For example, research conducted using a non-probability sampling technique focused on specific tertiary hospitals in Lagos, Nigeria and Nairobi, Kenya [8]. The level of knowledge among healthcare and non-healthcare professionals in hospitals was assessed, revealing an overall rate of 47.8% in Lagos and 36% in Nairobi. In Shanghai, China, a study [9] employed probability sampling to select medical professionals and medical students, whereas random selection was used to select community inhabitants. Two distinct assessments were carried out, and they determined that health professionals exhibited greater expertise compared to medical students. The community people exhibited a significant lack of information. Nevertheless, there was a statistically significant relationship between educational level and knowledge level about catastrophe management. A study was conducted in Madinah, KSA [9], on two groups of postgraduate nursing students who had a

minimum of ten years of previous job experience. The sample was acquired via a non-probability method, and the findings indicated that the levels of knowledge and training were insufficient.

Contrary to the current findings, international research have demonstrated that workers has sufficient knowledge in the field of disaster management. Prior to the 2010 World Cup in South Africa, a study was undertaken in a teaching tertiary hospital in Johannesburg, which revealed a generally satisfactory level of expertise. While the outcomes were deemed satisfactory, it was advised that there was potential for enhancement within the training personnel. Despite the staff's regular participation in disaster management training classes and the existence of a hospital disaster committee with an established response plan for emergencies, this issue arose. A study conducted in Mecca, Saudi Arabia, focused on all registered nurses employed in the emergency departments of the city's four public hospitals. The study used a non-probability sampling method. [10] The findings indicated that the majority of emergency nurses demonstrated a high level of self-assurance and expertise in fulfilling their responsibilities when it comes to efficiently addressing mass gathering disasters. Nevertheless, their familiarity with various forms of disasters remained inadequate, despite their regular training in the medical facilities. Therefore, it was advised to have both training programs at hospitals and universities [11].

The present study revealed a notable disparity in knowledge level between postgraduates and graduates, irrespective of their level of experience. The educational level of the respondents had a statistically significant impact on over 90% of the replies to the knowledge items presented. Contrarily, almost 90% of the responses to the knowledge test did not show any significant differences based on the period of experience ( $P < 0.05$ ). It appears that the individuals who completed their education had a restricted amount of experience with training programs. A potential reason for this could be the absence of disaster training programs in medical schools and during continuing medical education (CME) programs in healthcare

facilities. However, the data indicated that several programs were specifically designed for individuals pursuing advanced degrees. However, the report did not clarify whether the postgraduate programs were conducted domestically or internationally. Thus, it is imperative to specifically tackle this unresolved matter and recommend conducting additional research [12].

Despite having a strong understanding of catastrophe and emergency situations, health administrators did not demonstrate the level of skill expected in disaster management, as indicated by their performance in Q1 and Q3. They failed to properly assess the risk analysis and overlooked the crucial significance of mutual helps and multidisciplinary teamwork in catastrophe preparedness. Consequently, implementing training programs focused on leadership skills could improve the ability of health administrators to handle disasters. Physicians possessed a greater level of expertise compared to other specializations. Consistent with these findings, a research corroborated these results [13]. Managers demonstrated a lack of expertise in disaster management, particularly in the relevant areas. On the other hand, medical teachers, in general, demonstrated a higher level of expertise compared to the managers and practitioners. Nevertheless, it seems that they had a misconception regarding disaster concepts and their roots. This delay in understanding can be related to the absence of disaster medical faculties and/or instructors.

The primary cause of the Yemeni health professionals' lack of understanding in disaster management can be attributed to the scarcity of formal training programs or the absence of disaster medicine in the medical school curriculum. The program mostly covered short-term courses that specifically addressed catastrophe response. Moreover, a total of 35.9% of the participants in the survey were informed about disasters through the media, whereas only 14.7% acquired knowledge about disasters through undergraduate school classes. In addition, a mere 41% of participants had received prior instruction in the field of disaster medicine. Among those who had undergone training, a greater proportion of individuals,

specifically 15.7%, participated in courses offered by non-governmental organizations (NGOs), while 13.6% opted for online programs. In contrast, formal institutions and facilities had a less favorable impact, as indicated by a lower percentage [14].

The current study unveiled a favorable disposition of the participants and demonstrated their willingness to acquire knowledge in catastrophe management and their aspiration to be adequately prepared. The results of these studies were documented in various internationally published research papers [15]. The participants expressed the opinion that their facilities ought to possess an emergency plan, overseen by a catastrophe committee responsible for executing this plan. Moreover, they should be aware of their assignments once the strategy has been activated. The present investigation unveiled a greater proportion of respondents who concurred that training is vital for the nation and within their establishments (84.8%, 82.5%) correspondingly. In addition, 82.9% of respondents indicated that drills, workshops, or other simulation exercises should be carried out in their companies and are considered suitable for disaster training [15].

In 1997, the Yemeni government granted the Supreme Council of Civil Defense (SCCD) of the Ministry of Interior the authority to oversee disaster management in the country. SCCD mostly prioritized reactive measures and provided assistance primarily after a disaster occurred. In 2006, following a widespread flood catastrophe, SCCD established a nationwide strategy for emergencies and disasters; nonetheless, it fails to adequately address the requirements. There is a need for a national institution that would review legislation and policies related to disaster management. The national government should assume responsibility for guiding and supervising emergency and disaster preparedness efforts, including the implementation of training programs throughout the country [16].

Undoubtedly, education and training play a crucial role in disaster preparedness. Therefore, in order to enhance the capacity of health professionals in emergency and disaster

management, it is imperative to provide formal educational programs. Training programs that span a long period of time and contain a thorough curriculum are more uniform compared to shorter sessions [17]. The government must develop undergraduate or postgraduate degree programs in disaster medicine, either domestically or abroad with scholarships. Blended learning programs, which combine online lectures with classroom discussions and are followed by practical field workshops, drills, or large-scale exercises, are recommended. It is vital to conduct operational-based exercises that involve key persons from many agencies. These exercises should prioritize leadership abilities, team collaboration, communication, and decision-making related to resource allocation, rather than focusing on individual performance [17].

Moreover, according to the study's results, traumatic mass casualty incidents (MCIs) are common occurrences that might pose a significant challenge to healthcare workers, especially surgical teams. Consequently, it is necessary to provide training in incident command system (ICS) and mass casualty triage to field first responders. Additional courses to consider include basic and advanced disaster life support (BDLS, ADLS), prehospital trauma life support (PHTLS), and advanced trauma life support (ATLS). The government must mandate the inclusion of disaster-planning training in the orientation and Continuing Medical Education (CME) programs of all healthcare facilities. Stakeholders must build an emergency Hospital Incident Command System (HICS) and develop contingency plans for potential disasters. Additionally, it is crucial to provide frequent training to the staff in order to improve their performance and enable them to successfully respond to such events [18]. It is essential to incorporate the community into disaster management. Community resilience relies heavily on the public's understanding of disaster risks, impacts, and appropriate response measures in the event of a disaster. Additionally, in order to bolster the formal response efforts in disaster response, the government must initiate training programs for civilian volunteers. To address this, it is recommended to enroll in

classes that focus on search and rescue, evacuation procedures, and basic first aid skills. Providing mental support to the worried victims is crucial in the aftermath of a disaster [19].

## Conclusion:

The overriding concept is to give top priority to safety above all other considerations, irrespective of the situation. A crucial element of the comprehensive security system is to furnish authorized volunteers who require access to the healthcare facility with a form of identity, ideally in a format that is difficult to duplicate. For example, some nurses employed in hospitals are currently benefiting from recently established precautions. These procedures involve providing transportation for nurses to and from work using private vehicles driven by individuals who have been confirmed as healthy. In addition, hospitals are receiving packaged meals for the healthcare workers, and the workers are also being offered childcare services and shopping deliveries for their families at home. A nurse now working in an Emergency Department and caring for two sick family members has stated that grocery delivery has greatly helped her ability to continue providing care to others and contribute to the endeavor of minimizing the spread of the virus. They have been not just insuring my safety, but also safeguarding the safety of the entire population, which is really significant. Typically, an experienced nurse is responsible for administering triage in the majority of hospital emergency rooms. During a Mass Casualty Incident, it is preferable for triage to be overseen by a qualified physician. However, there may be situations where limited resources prevent this from happening. In addition to medical decision-making, catastrophe triage also poses numerous ethical difficulties, which can often contradict the fundamental principles of being a physician. Patients with the most severe illnesses may not receive priority if it is determined that they are unlikely to benefit from the limited resources that are available. These individuals could be classified as being in a state that beyond the need for emergency medical attention. Patients of this nature should receive treatment with

understanding, respect, and kindness, and may experience positive effects from the administration of sedatives and pain relief medication.

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