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Original Article

Disaster Management Factors and Challenges: Nurses' Competencies for Disaster Risk Management.

Soha Mamdouh Elkholy[1], Elsayeda Said Elwakeil, [2] Basma Abd El Mogy Ismail[3]

1. Assistant Professor of Nursing Administration Department, Faculty of Nursing, Menoufia University, Egypt.

2,3. Lecturer of Family and Community Health Nursing, colleague of Menoufia University Hospitals, Menoufia University, Egypt.

ABSTRACT

Background: The frequency and intensity of disasters have increased, making them a serious problem that needs immediate attention. Nurses must possess the ability to offer comprehensive and all-encompassing care to populations impacted by or in danger of disasters to respond appropriately. **Aim:** The purpose of this study is to investigate the relationship between disaster management factors, challenges, and nurse competencies for disaster risk management among nursing staff. **Methods:** Utilizing an exploratory descriptive design allowed the current study to accomplish its goal. The study was conducted in the emergency hospital located in the governorate of Menoufia, Egypt, encompassing all in-patient medical, surgical, and intensive care units. There were 154 staff nurses who worked in the operating room, critical care unit, surgical department, burn unit, and emergency department. **Results:** Staff nurses' responses to disaster risk management factors, challenges, and competencies levels show a significant difference ($p<0.0001$). Also, a positive association was discovered between elements influencing disaster risk management, challenges, and disaster risk management nurse competence among staff nurses. **Conclusion:** A highly substantial positive association was discovered between elements influencing disaster risk management, challenges, and disaster risk management nurse competence among staff nurses. **Recommendation:** For hospital administration to successfully apply disaster management technologies and practices, the organizational culture should be supported and adopted. Ongoing technical training is crucial to creating skilled nurses equipped to handle emergencies.

Keywords: disaster management factors, challenges, nurse competencies, disaster risk.

Introduction

Disasters have an enormous influence on healthcare practitioners and facilities, as well as on people's lives and global economies. According to the World Health Organization (WHO), a disaster is any significant

disturbance to the way a community or society functions that results in extensive losses of people, property, money, or the environment that are greater than what the impacted community or society can reasonably recover from using its own resources (Aliakbari, 2023). The variety of recent global disasters has prompted changes in disaster policy, which highlights the importance of enhancing nurses' preparedness for disaster response. According to statistics, the frequency of catastrophes is rising, their occurrence cannot be predicted or prevented, and despite this, both natural and man-made disasters continue to have detrimental effects on human physical (Goki F,2023).

A disaster is defined as an event that poses a threat to society and results in material, human, environmental, or financial losses. When disasters strike, the affected community may require outside help to cope because of the overwhelming demand for its capacities and resources. Deployed disaster healthcare responders encounter many difficulties in disaster situations. They work under tremendous pressure and must act quickly in situations that are frequently hazardous and difficult (Gustavsson,2022).

Hospitals receive patients and their families during a disaster within a very tight time frame. As a result, hospital administrators and decision-makers need to train nurses so they can react to emergencies quickly and efficiently. Nurses must be involved in the planning and execution of the plan, as well as receiving education in disaster management. This includes comprehensive training on all topics anticipated to come up prior to, during, and following the response, as well as drill simulations of various disaster scenarios (such as natural, eternal, external, biological, chemical, and radiological disasters) (Choi,2022). Furthermore, it is critical for hospital managers and administrators to comprehend the challenges healthcare providers face in disaster management. In disaster management, nurses collaborate with other healthcare professionals to recognize and anticipate risks, take part in education and training related to preparedness, respond quickly and effectively, and assist in the recovery process alongside other disaster management teams (Melnychuk,2022).

In order to enhance hospital preparedness to deliver community care in the event of a disaster, administrators must support and encourage nurses' education on disaster preparedness. All levels of healthcare personnel, including nurses, are crucial to disaster risk reduction. As such, they need to be equipped with fundamental skills and knowledge to handle emergencies (Soltani,2023). So that effective nurse education and training programs about disasters can be developed and provided in more efficient ways to prepare nurses for

disasters, it is imperative to identify the factors that influence disaster nursing core competencies. Consequently, disaster management requires the disaster nursing core competencies of emergency nurses (Almukhlifi,2021). The number of years of clinical experience, working in an emergency room medical ward, having graduate-level education or above, having received disaster-related education in the past, and the need for disaster response education were all factors that influenced one's level of personal readiness (Jang,2021).

Using the required knowledge and skills to effectively provide nursing care to victims of disasters is known as disaster risk management competency for nurses. The nature of their work and their function in treatment, rehabilitation, and control make nurses' competencies in disaster response crucial to minimizing the detrimental effects of disasters on the affected population's health. The ability of nurses to manage disaster risk makes them highly prepared to assist victims of disasters and lessen their reluctance or fear (Firouzkouhi,2021).

It is crucial to assess nurses' competencies in disaster risk management in various settings and levels of healthcare because these assessments make managers aware of nurses' competencies and help them address any shortcomings in this area. As a result, assessing and improving nurses' competencies can be a source of changes and preparations in the health system. Competent nurses can reduce mortality and complications after disasters, increase public trust in healthcare providers, and provide high-quality care and psychological support to affected clients (Susan, 2016).

Disaster nurses can acquire a foundational understanding of disaster context through the International Council of Nursing (ICN) framework. The competencies related to mitigation/prevention, preparedness, response, and recovery/rehabilitation make up its four domains of structure. In light of the critical role that nurses play in disaster response, empowerment programs have prioritized these phases of preparation (WHO, 2016).

Significance of the study

The frequency and intensity of disasters have increased, making them a serious problem that needs immediate attention. Disasters have an enormous impact on healthcare providers and facilities, as well as on people's lives and global economies (Lantada, 2020). A disaster's effects are frequently unevenly distributed, disproportionately harming the weakest members of society. These occurrences upset people's livelihoods and the economy, resulting in sharp socioeconomic downturns that impede both long-term development and short-term recovery. Because of this, fostering

resilience to withstand various shocks and strains is regarded as a crucial component of the global development agenda (Feizolahzadeh, 2019).

Early warning systems have a big impact on the workplace because they provide timely and accurate information about the risk of disasters. This information helps employers, employees, and national or local authorities prepare and respond quickly, which can save lives and property. Accordingly, the goal of early warning systems requires that nurses possess disaster risk management competencies in addition to awareness of disaster management factors and challenges (Al Thobaity, 2019).

World Association for Disaster and Emergency Medicine (WADEM) Nursing Section took into consideration the potential for endorsing a current set of competencies that could be used to prepare nurses globally to engage in disaster health activities in addition to their awareness of the factors and challenges associated with disaster management. The goal of this study was to investigate the relationship between disaster management factors, challenges, and nurse competencies for disaster risk management as reported by the nursing staff under investigation.

Aim of the Study

The current study aimed to explore the relationship between factors, challenges, and nurse competencies related to disaster risk management as reported by the nursing staff under investigation.

Research Questions

The following questions were formulated to guide the research study:

- What are disaster management factors and challenges at Emergency Hospital from the studied nursing staff's viewpoint?
- What are disaster risk management nurse competencies levels of Emergency Hospital as reported by studied nursing staff?
- Is there a relationship between disaster management factors, challenges, and disaster risk management nurse competencies?

Subjects and method

Research design

An exploratory descriptive design was utilized to achieve the aim of the current study.

Study Setting

The study was executed in all in-patient medical, surgical, and intensive care units at Emergency Hospital, Menoufia Governorate, Egypt. The University Emergency Hospital is a part of the university hospitals at Menoufia University. It consists of a ground floor, which contains emergency reception and emergency intensive care. The first floor is special for multi-specialty intensive care, surgical operations, and plastic surgery departments, in

addition to the burn department. The second floor consists of the surgery department. The third floor consists of multi-specialty intensive care, physical therapy, and a pathology department. As for the fourth floor, there is the second part of the emergency reception area, where observations are located. It provides a wide range of care services to all patients such as emergency, surgical, and physiotherapy equipped with 400 beds. The number of inpatient units included in the study was 13 units divided into;1emergency department, 1burn unit, 5 surgical operating units, surgical department, 3 Physiotherapy units, and 13 intensive care units divided into; emergency ICU(5 units), stroke ICU (1 units), Coronary Care Unit (3 units), Chest ICU (1unit), anesthesia ICU (2 units), and Psychiatric ICU (1unit).

Subject

The study subjects were a simple random sample of staff nurses who met the inclusion criteria of "having at least one year of experience in the study setting, approved to participate, and available at the time of data collection," totaling 460. The sample size was calculated using the "Epi info program version 7" with a 5% variance, a 95% confidence level, and a power of 0.80. The study included a total of (154) staff nurses, distributed as follows: emergency department (n=43), surgical units (n=30), Physiotherapy (n=21), intensive care units (n=37), and burn unit (n=23).

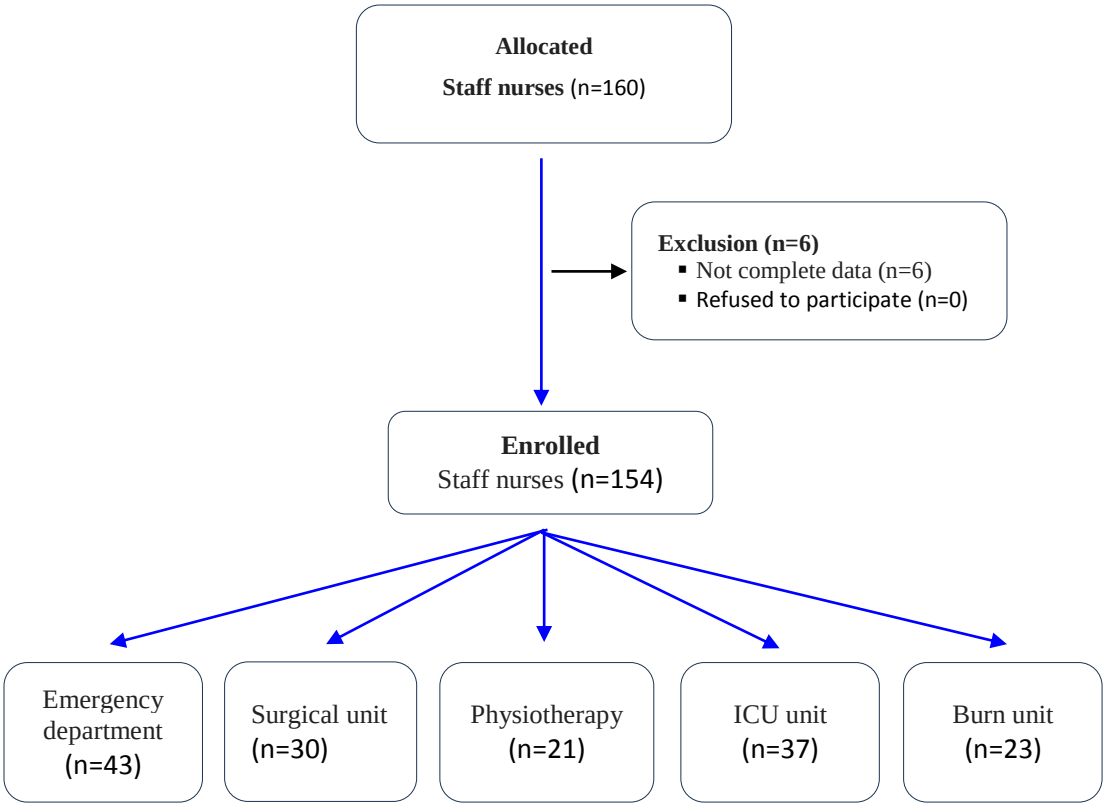

Figure 1. Flowchart of the studied staff nurses.

Tools of Data Collection

Three instruments were used to collect the data for this study:

Instrument1: Disaster Management Factors Questionnaire, consisted of two parts:

Part I: Personal information about nursing staff, such as age, gender, educational qualification levels, job position, and experience years.

Part 2: It was developed by Abu Kwaik et al. (2023), and the researchers modified it to evaluate the level of disaster management factor management from the perspective of the nursing staff. It consisted of 53 items clustered into eight domains: upper management and board of directors (14 items), audit quality effectiveness (8 items), human resources efficiency and training (11 items), government rules and regulations (3 items), communication (7 items), organizational structure (3 items), trust (4 items), and 3 items for culture. Nursing staff responses were graded on a five-point Likert scale that ranged from strongly disagree to strongly agree (1–5). This was converted into three points for presentation. The total score for each domain was computed and converted to a percentage. The Disaster Management Factors Instrument total score was extended from (53 – 159), which considered the summation of all staff nurses' responses on the present scale. While scores from (53 – 95) degree reflected the "low Disaster management factors". Whereas scores ranged from (96- 119) denoting "moderate Disaster management factors", as well as scores extended from (120-159) representing "high Disaster management factors".

Instrument II: Disaster Management Challenges Questionnaire

It was created by UNISDR. (2014) to evaluate the degree of difficulties in disaster risk reduction from the perspective of nursing staff. There were 21 items total, divided into four categories: resilient leadership The following three subdomains comprise the "11" items: make disaster risk reduction a national and local priority with a solid institutional foundation for implementation Using information, creativity, and education to create a culture of safety and resilience at all levels, "4" items identify, evaluate, and monitor disaster risks and improve early warning systems; "3" items lower the underlying risk factors "6" items and improve readiness for disasters so that all levels of response are effective "4" items. The nursing staff under study were asked to rate their responses on a three-point Likert scale: always "3," occasionally "2," and never "1." Following thorough reading and comprehension, each

nurse staff member chose one response. The scores for each domain are then totaled and expressed as a percentage. The total score for each domain was computed and converted to a percentage. The Disaster Management Challenges Instrument total score was extended from (21 – 63), which considered the summation of all staff nurses' responses on the present scale. While scores from (21 – 38) degree reflected the "low Disaster management challenges". Whereas scores ranged from (39- 47) denoting "moderate Disaster management challenges", as well as scores extended from (48-63) representing "high Disaster management challenges".

Instrument III: Disaster Nurse

Competencies Questionnaire

It was modified by Faezeh et al. (2023) to evaluate nursing staff perspectives on the level of disaster risk management nurse competencies. 45 items total, divided into five dimensions: critical thinking skills (4 items total), special diagnostic skills (6 items total), general diagnostic skills (13 items total), technical skills (14 items total), and communication skills (8 items total). A five-point Likert scale, from "1" strongly disagrees to "5" strongly agree, was used to score the nursing staff's comments. The scale was converted into three points: agree (3), neutral (2), and disagree (1). The items in each dimension were added together and averaged to determine the scores. The Disaster nurse competencies instrument total score was extended from (45 – 135), which considered the summation of all staff nurses' responses on the present scale. While scores from (45 – 81) degrees reflected the "low Disaster nurse' competencies". Whereas scores ranged from (82- 100) denoting "moderate Disaster nurse' competencies", as well as scores extended from (101 -135) which represent "high Disaster nurse' competencies".

Data Collection Procedure

Administrative Approval

The Menoufia University Dean of the Faculty of Nursing officially granted the Director of the Menoufia University Hospital permission to collect data for the current study. Before the study started, researchers had a meeting with the nursing staff to go over its goals and nature. They also let them know that leaving the study at any time would not have any negative consequences and that participation is entirely voluntary. To guarantee the total confidentiality of the data collected, the questionnaire papers were additionally coded. The study won't affect employment or jeopardize patient care. The time for data collection was determined by considering their workload and opinions in order to gain their consent and participation.

The study's conclusions and suggestions were sent to the hospital's management for review.

Operational design

The operational design spans the planning stage, the pilot study, and the fieldwork from early May to late July 2023.

Preparatory phase

Using textbooks, periodicals, journals, magazines, the internet, and a theoretical understanding of the various aspects of the study's issue, the preparatory phase ran for two months, from the beginning of May to the end of June 2023. It also involved reviewing relevant national and international material. The content for the three tools was produced, translated into Arabic, and then subjected to reliability and content validity tests.

Instrument Reliability and Validity

By assessing the instruments' precision, comprehensiveness, relevance, ease of use, and clarity, their validity was established. Based on their recommendations, minor adjustments were made, and the researchers produced the instruments' final validated version. The internal consistency was evaluated using Cronbach's alpha coefficient. The instruments were internally consistent, as shown by Cronbach's alphas for the disaster risk management factors and challenges and the disaster management nurse competencies questionnaire, which were, respectively, (= 0.89, 0.87, and 0.96).

Pilot Study

Prior to data collection, the revised questions were piloted with 10% of the total subjects (nine nursing staff) to verify the questionnaires' clarity and gauge the viability and utility of the recommended instruments. Furthermore, to project how long it will take to finish the questionnaire sheets. The nursing staff who took part in the pilot trial were included in the main study, and no modifications were made.

Fieldwork

The actual data collection process lasted roughly two months, from the beginning of May to the end of June 2023. During those two days, the researchers collected data from nursing staff twice a week, from 9:00 a.m. to 2:00 p.m., before and after work hours, based on their availability. There were typically seven to ten completed sheets. The questionnaires took between twenty and twenty-five minutes to complete. The completed forms were timely collected and reviewed to ensure no information was missing. Lastly, the participants received gratitude from the researchers for their cooperation.

Statistical analysis method:

The Statistical Package for Social Sciences was used to analyze and tabulate the data (SPSS version 26.0). Frequencies and percentages were used to describe the demographic features. The central tendency and dispersion measures for the variables under investigation were the arithmetic mean and standard deviation (SD), respectively. The nature of the relationship between the research variables was investigated using the Pearson correlation coefficients (r) analysis, and the mean score comparison was done using the one-way analysis of variance (ANOVA) (F) test. The analytical statistics were evaluated using the Tukey test and R linear regression.

Results

A total of 154 staff nurses enrolled in the current study, most of the staff nurses were 35-45 years old (56.5%), most of them were females (66.2%), regarding educational level, 74.4% had Bachelor, followed by 20.8% had Nursing Technical Institute and 4.5% only had master's degree. Most of the staff nurses worked in the emergency department (28% and ICU 24%), most of them had 10-15 years of experience (48.1%), followed by (38.3%) had 5-10 years of experience and 13.6% only had 15-20 years of experience, (Table 1).

Data in Table 2 and Figure 2, illustrate staff nurses' response to total levels of total of factors affecting disaster risk management, challenges of disaster risk management, and disaster risk management nurse competencies levels. All are at a high level (3.61±.84), (3.72±.78), and (3.86±.86) respectively and there are slight differences between the mean scores of all three variables (Table 2, Figure 2).

In our study, the staff nurses' response regarding disaster risk management nurse competencies levels. A statistically significant difference is found regarding staff nurses' response to all items of disaster risk management nurse competencies levels ($p<0.0001$). The highest percentage above seventy percent (81.82% and 77.27%) of staff nurses reports that they are competent in assessing airway patency and respiration, using ethical principles and nationally approved information to decide actions to be taken and prioritize them in case of a disaster as well as assessing dermatological conditions, especially like injury, burn and eruption respectively. Regarding factors affecting disaster risk management levels. A statistically significant difference is found regarding staff nurses' response to all items of factors affecting disaster risk management levels ($p<0.0001$). (Table 3, Figure 3).

Table 1. Socio-demographic data of studied staff nurses.

Socio-demographic data		N=154	%
Age	25 – 35	58	37.7%
	35 – 45	87	56.5%
	>45	9	5.8%
Gender	Male	52	33.8%
	Female	102	66.2%
Educational Level	Nursing Technical Institute	32	20.8%
	Bachelor	115	74.7%
	Master's degree	7	4.5%
Work department	Emergency	43	28%
	Surgical unit	30	19.4%
	Physiotherapy	21	13.6%
	ICU	37	24%
	Burn	23	15%
Years of experience	5 – 10	59	38.3%
	10 – 15	74	48.1%
	15 – 20	21	13.6%

Table 2. Nurses' response to total disaster risk management nurse competencies, factors affecting disaster risk management, and challenges of disaster risk management levels.

Study variables	Low		Moderate		High		Mean ± SD	Chi-square	P value
	No.	%	No.	%	No.	%			
Disaster risk management nurse competencies	10	6.49	31	20.13	113	73.38	3.86±0.86	108.16	<0.001*
Factors Affecting Disaster Risk Management	14	9.09	50	32.47	90	58.44	3.61±0.84	82.25	<0.001*
Challenges of disaster risk management	11	7.14	42	27.27	101	65.58	3.72±0.78	81.15	<0.001*

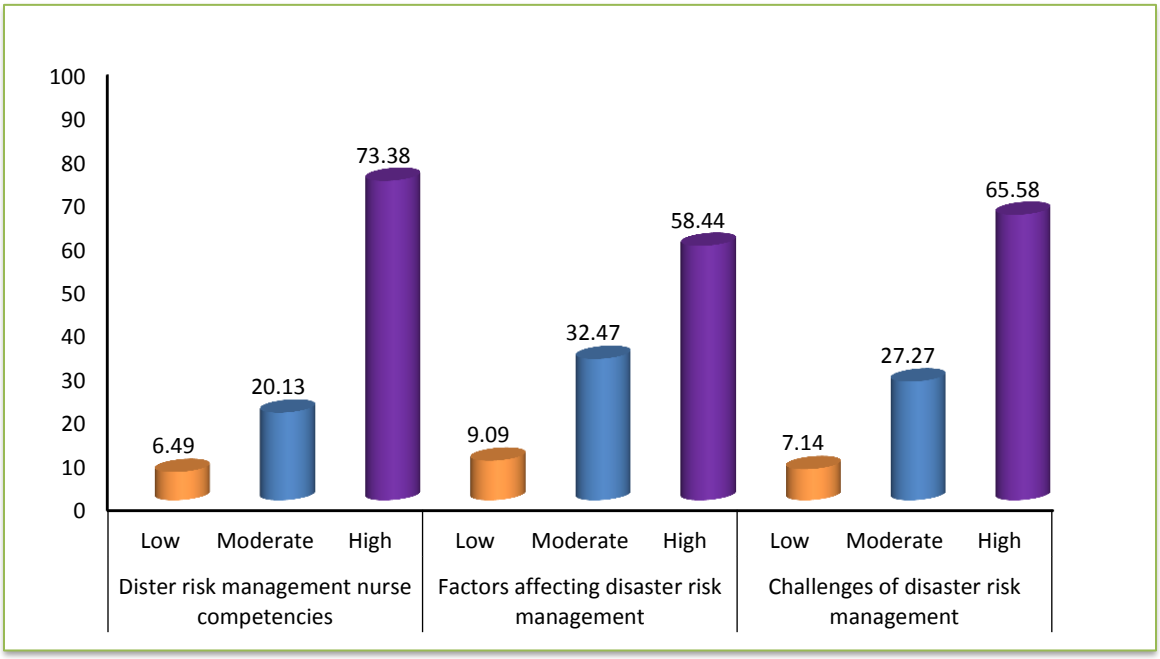

Figure 2. Nurses' response distribution of total disaster risks management (nurse competencies, factors affecting, and challenges).

The highest percent (72.08% and 69.48%) of staff nurses report that the board of directors is informed about risks via separate risk reporting, there are clear statements of objectives to be met, and awareness sessions are conducted regularly in the organization respectively. Regarding Challenges of disaster risk management levels. A statistically significant difference is found regarding staff nurses' response to all items of factors affecting disaster risk management levels ($p<0.0001$). The highest percent (68.83%, 64.29%, and 62.34%) of staff nurses report that social development policies and plans are being implemented to reduce the vulnerability of populations most at risk and Procedures are in place to assess the disaster risk impacts of major development projects, especially infrastructure, as well as National and local risk assessments based on hazard data and vulnerability information are available and include risk assessments for key sectors respectively (Table 3, Figure 2).

Table 3. Nurses' response regarding dimensions of disaster risk management nurse competencies, factors affecting disaster risk management, and challenges of disaster risk management levels.

	Low		Moderate		High		Mean ± SD	Chi-square	P value
	No.	%	No.	%	No.	%			
Disaster risk management nurse competencies									
Critical thinking skills	16	10.39	16	10.39	122	79.22	3.92±1.03	118.85	<0.001*
Special diagnostic skills	4	2.60	32	20.78	118	76.62	3.92±0.70	103.76	0.001*
General diagnostic skills	8	5.19	43	27.92	103	66.88	3.82±0.81	53.22	0.001*
Technical skills	12	7.79	27	17.53	115	74.68	3.96±0.93	99.44	0.001*
Communication skills	12	7.79	35	22.73	107	69.48	3.69±0.82	165.54	0.001*
Factors affecting disaster risk management									
Upper management and board of director	16	10.39	39	25.32	99	64.29	3.61±0.87	132.55	0.001*
Audit quality effectiveness	24	15.58	39	25.32	91	59.09	3.46±0.96	113.07	0.001*
Human Resources Efficiency and Training	12	7.79	51	33.12	91	59.09	3.64±0.85	121.26	0.001*
Government Rules and Regulations	20	12.99	53	34.42	81	52.60	3.58±0.93	22.67	0.001*
Communication	4	2.60	52	33.77	98	63.64	3.74±0.71	85.06	0.001*
Organizational structure	8	5.19	63	40.91	83	53.90	3.59±0.75	74.00	0.001*
Trust	16	10.39	64	41.56	74	48.05	3.48±0.82	53.06	0.001*
Culture	8	5.19	47	30.52	99	64.29	3.77±0.80	56.33	0.001*
Challenges of disaster risk management									
Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation	12	7.79	40	25.97	102	66.23	3.77±0.84	53.89	0.001*
Identify, assess, and monitor disaster risks and enhance early warning	8	5.19	55	35.71	91	59.09	3.72±0.82	49.68	<0.001*
Use knowledge, innovation, and education to build a culture of safety and resilience at all levels	24	15.58	31	20.13	99	64.29	3.54±0.82	102.67	<0.001*
Reduce the underlying risk factors	4	2.60	32	20.78	118	76.62	3.86±0.65	136.96	0.001*
Strengthen disaster preparedness for effective response at all levels	8	5.19	52	33.77	94	61.04	3.71±0.78	62.57	<0.001*

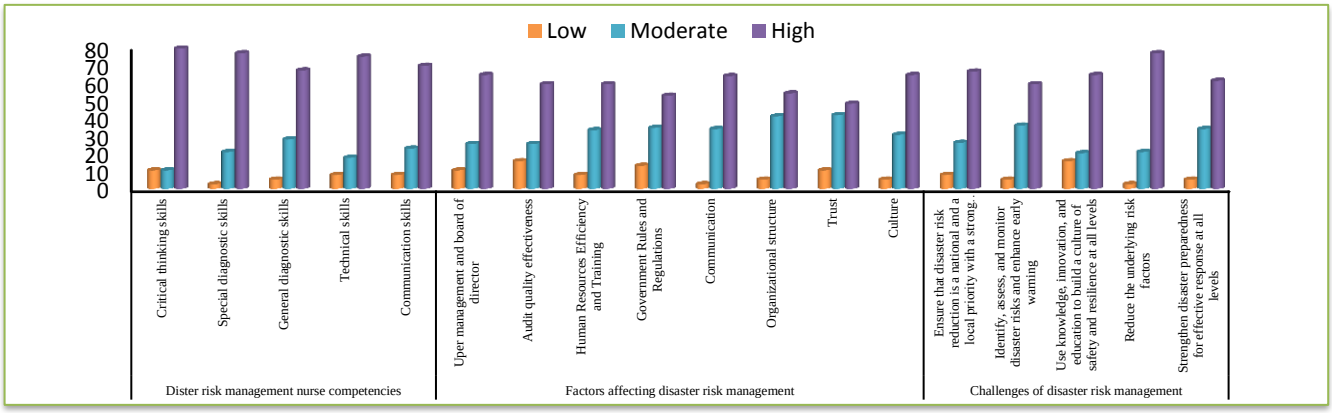

Figure 3. Nurses' response distribution regarding dimensions of disaster risk management (nurse competencies, factors affecting disaster, and challenges levels).

In our study, the correlation between disaster risk management factors and challenges affecting disaster risk management nurse competencies among nurses. It indicates a highly significant positive correlation between factors affecting disaster risk management, challenges of disaster risk management, and disaster risk management nurse competencies among staff nurses (P< 0.05), (Table 4, Figure 4).

Table 4. The correlation between study variables among the studied nurses.

Correlation				
Study variables of studied nurses		**1**	**2**	**3**
1. Disaster risk management nurse competencies	Pearson Correlation	1	.714**	.719**
	Sig. (2-tailed)		.000	.000
2. Factors affecting disaster risk management	Pearson Correlation	.714**	1	.877**
	Sig. (2-tailed)	.000		.000
3. Challenges of disaster risk management	Pearson Correlation	.719**	.877**	1
	Sig. (2-tailed)	.000	.000	

** Correlation is significant at the 0.01 level (2-tailed).

Discussion

By responding to emergencies and providing care for a large number of survivors, hospitals and other healthcare facilities play a crucial role in disaster management. As a result, careful planning of instruction and training for all kinds of risks and situations is necessary for an efficient response. During crises and natural disasters, the working conditions for healthcare professionals including nurses' change. For nurses, the situation is different due to inconsistencies, a lack of facilities and resources, caring for a variety of chronically ill patients, multiple intra- and extra-organizational communications, an increased workload, and physical and psychological pressures.

It is critical to evaluate nurses' competencies in disaster risk management in various settings and healthcare levels. Competent nurses can decrease mortality and complications following disasters, improve public trust in healthcare providers, and give affected patients high-quality care and psychological support. Therefore, the purpose of this study was to investigate the relationship between disaster management factors, challenges, and nurse competencies related to disaster risk management as reported by the nursing staff at Menoufia Emergency Hospital.

Factors affecting risk management nurse competencies:

The study's findings showed how staff nurses responded to questions about the variables influencing the degree of disaster risk management. The greatest percentage of staff nurses (72.08% and 69.48%) state that regular awareness sessions are held in the organization, clear objectives are stated for each task, and the board of directors is informed about risks through separate risk reporting which improves

risk management competencies through technical expertise, risk ownership, and leadership skills.

The study's findings are consistent with those of Okello (2012), who investigated the factors influencing Safaricom Limited's development of risk management strategies and discovered that upper management's commitment is a crucial component in risk management and has an impact on the accomplishment of the organizational system. Risk management is one of the organizational initiatives that receives significant support from upper management. According to Anton et al. (2020), who conducted research on enterprise risk management, upper management specifies the general mission and goals of the organization as well as the procedures and goals of all risk management activities. Gericke. (2018), who investigated risk management and the board, emphasized the importance and difficulties of the board of directors and upper management's role in establishing a risk management program to successfully secure the organization’s resources.

The findings of the study on internal audit were corroborated by Abu Kwaik et al. (2020), who examined how internal audit contributes to risk management, and stated that internal auditors play a crucial role in providing confirmation and counseling services related to risk management in their organizations. The Institute of Internal Auditors described risk-based internal auditing as a methodology that connects the internal audit framework within the general risk management framework of the organization. This allows internal auditing to confirm to the directorate that the risk management program is managing risks adequately within worthy risk limits set by the Foundation.

According to Okello (2012), training is also essential for equipping staff members with the knowledge and abilities needed to manage risks. Since the caliber and competence of an organization's workforce determines its success, it is critical that managerial roles be filled with a sufficient number of individuals possessing the necessary skills. According to Cardy et al. (2006), there is currently a lot of interest in the efficiency of human resources and how it relates to the implementation of risk management because effective job performance is improved by efficient human resources, and improved job performance increases organizational competitiveness.

Researching the COVID-19 risk assessment tool: dual application of risk communication and risk governance, Chatterjee et al. (2020) discovered that communication involves information flowing from upper management (top) to employees (bottom) or

vice versa, and it may also involve external parties. In order for a message to be clear, attention-grabbing, easily interpretable, and to have an impact on decision-making, the source must also be dependable, knowledgeable, honest, and unbiased. Communication helps to clearly define expectations, goals, and objectives as well as ensures that all company members support each other and the business strategy.

Information can be communicated from upper management to employees at the bottom or vice versa, and it can also involve external parties. According to Abu Kwaik, N. et al. (2023), earlier research has indicated that the organizational structure is equally significant since it gives workers comprehension, guidance, and support. The structure also enables researchers to ascertain how workers operate and offers concepts, guidelines, and assistance to workers. Furthermore, successful corporate structures have both strengths and weaknesses; there is no such thing as an ideal corporate structure.

According to Abu Kwaik, N. (2023), the researchers discovered that a complete understanding of the contextual factors that influence the relationships between trust and the implementation of risk management still awaits further studies. Trust is the key to cooperation and teamwork in an organization, and this is precisely what risk management needs.

Staff nurses' response regarding Challenges of disaster risk management levels

The study's findings show how staff nurses responded to the difficulties in disaster risk reduction. There is a statistically significant difference in how staff nurses react to each challenge item under the various disaster risk management levels. The greatest percentage of staff nurses (68.83%, 64.29%, and62.34%) state that plans and policies for social development are being put into practice to lessen the vulnerability of the most vulnerable populations and major development projects, particularly those involving infrastructure, are subject to procedures that evaluate the risks of disasters. Hazard data and vulnerability information are used to inform both national and local risk assessments, which include evaluations of important sectors. Because so much development occurs in the unorganized sector and there is a lack of public awareness and government capacity.

This result is consistent with the findings of UNISDR (2014), which examined the advancements and difficulties in disaster risk reduction and contributed to the creation of policy indicators for the framework of disaster risk reduction that will take place. Other challenges include a lack of technical resources, such as space-based technology, inadequate staffing, and financial bottlenecks.

The lack of institutional and community sensitization to treat disaster risk reduction (DRR) as a crucial component of sustainable development is another significant barrier. According to Al Harthi et al. (2020), one of the most difficult things about disaster response is getting nurses to a point where they can work efficiently. A pre-hospital system that is not fully developed or integrated with other healthcare facilities, like hospitals, is one of the associated factors.

The findings of our study are consistent with those of Al Harthi et al. (2020), who investigated the difficulties faced by nurses in disaster management. A scoping review indicated that one of the challenges faced by nurses is the degree of preparedness regarding pre-hospital care, hospitals, and individuals, including nurses. Pre-hospital care systems are a major challenge for nurses, according to one study. Several studies also reported on hospital preparedness, noting that hospitals have inadequate staffing, staffing levels, and planning and leadership, in addition to having limited capacities and resources. Restoring the regular pre-disaster routine involves nurses. Nonetheless, the literature on nursing indicates that nurses are unclear about their responsibilities during emergencies, which poses a serious problem for disaster management.

Furthermore, formal disaster nursing education is one of the major obstacles facing disaster nursing, according to Al Harthi et al. (2020). To establish formal disaster nursing education, researchers and educators worked to develop and implement a variety of strategies, including developing and implementing teaching methods, creating and implementing curriculum content, assessing the efficacy of education initiatives, assessing students' knowledge, skills, and confidence, assessing disaster drill simulations, and creating undergraduate education and training courses. These efforts were documented in an integrated literature review.

There is growing consensus and agreement regarding the significance of providing all nurses with a knowledge base, a minimum set of skills, and a shift in attitude toward positivity in order to enable them to meet the challenges they face in dealing with the complexities of disasters (Mirzaei, S, et al., 2020). This is in reference to the study conducted on the impact of nurses' disaster management training programs on their knowledge and attitude. Overall attitudes toward disaster management and the total knowledge of nurses were found to be strongly positively correlated.

Nurses’ perceptions of core competencies required for disaster risk management:

According to the study's findings, the overall mean score of nurses' disaster risk management competencies was high. The technical skills and general diagnostic skills subscales had the highest and lowest mean scores, respectively, according to the results. It showed that nurses with work experience in past incidents and disasters, like earthquakes or traffic accidents, had higher disaster core competencies. Additionally, nurses who took part in continuing education programs and training courses related to disaster risk management.

This result is consistent with Goki's (2023) study on Iranian nurses' perceptions of the core competencies needed for disaster risk management, which found that nurses' overall mean score for these competencies was high. Critical thinking skills, special diagnostic skills, general diagnostic skills, technical skills, and communication skills had the highest mean scores among the subscales.

Furthermore, the study's findings are consistent with those of Aliakbari et al. (2023), who investigated emergency nurses' assessment competencies for responding in disaster situations using an objective structured clinical examination (Persian) that evaluated emergency nurses' competency in life-threatening circumstances. The average competence score of the participants in the managerial competence area was estimated to be 88.8%, according to their results, indicating the desirable evaluation of nurses based on their competence in this area.

According to Goki (2023), a descriptive analysis of the nurses' perceptions of disaster core competencies revealed that technical skills were rated highest through the scale's subscales. Also, revealed that nurses' disaster risk management competencies were above average. However, this finding contradicts that of Labrague et al. (2020), who found that although different scales have been used to measure nurses' preparedness for disasters, there is a common finding that nurses are not well-prepared for disaster response.

According to every study, nurses' levels of readiness ranged from low to moderate. Furthermore, the results of the study are at odds with those of Martono et al. (2019), who reported that most Indonesian nurses have not performed their duties in these extreme conditions, so they validate and reaffirm that they are not fully prepared to handle real disaster situations. Additionally, Latif et al. (2019) stated that the average level of professional competence displayed by nurses in times of crisis was not desirable.

According to Goki (2023), nurses lacked adequate disaster management skills. According to Chegini et al. (2022), communication skills received the lowest rating. Regarding this

matter, Chegini et al. (2022) revealed that eighty percent of Filipino nurses expressed uncertainty about their readiness to handle emergencies.

This study examines the dimensions of disaster risk management nurse competencies, factors influencing, and challenges. It finds that Technical Skills scored highest across the scale's subscales, while Critical Thinking Skills scored lowest. This is because nurses work in unique situations due to a lack of facilities and resources, providing care for a diverse range of chronically ill patients, numerous internal and external communications, increased workloads, and physical and psychological pressures.

This outcome is consistent with the findings of Goki (2023), who showed that the technical skills and special diagnostic skills subscales had the highest and lowest mean scores, respectively, and mentioned that similar findings were found in studies conducted in Turkey; updating one's knowledge about particular disasters, such as mass casualties and biological, nuclear, and radioactive events, was one of the special diagnostic skills. Additionally, Taskiran et al. (2019) found that technical skills scored highest across the scale's subscales while "critical thinking skills" scored lowest.

The study's findings provide an illustration of how staff nurses responded to all factors affecting disaster risk management, as well as the difficulties and levels of nursing competencies associated with it. The mean scores of all three variables are slightly different, but they are all at a high level. It suggests that because the health system is responsible for meeting people's medical needs during emergencies and disasters, it is the system that matters most. Since they make up the majority of those involved in disaster risk management, nurses need to advance their disaster risk management competencies.

Abu Kwaik, et al. (2023), found a statistically significant difference in staff nurses' responses to all items of disaster risk management nurse competencies levels, corroborating this result. In case of a disaster, the highest percentage of staff nurses report that they are competent in assessing dermatological conditions, particularly those like injury, burn, and eruption, as well as in assessing airway patency and respiration. They also report that they can make decisions about what actions to take and prioritize based on ethical principles and information approved by the national government.

The means of all the factors, with the exception of the highest mean for the factor of culture and the lowest mean for the factor of trust, significantly differ when it comes to nurses' responses regarding the dimensions of disaster risk management nurse competencies

and factors affecting disaster risk management. It refers to giving nursing care to victims of disasters with the requisite knowledge and abilities, but there is a dearth of assessment of nurses' competencies in disaster risk management to identify the gaps in curriculum development and ongoing education to make nurses ready.

This is in contrast to Abu Kwaik, et al. (2023), who claimed that all factors affecting risk management had a relatively high mean for the respondents; the factor with the highest mean for the respondents was government rules and regulations, indicating that the majority of respondents concur that these regulations have a significant impact on risk management. Regarding risk management, the lowest mean of the responses is associated with the information technology factor.

CONCLUSION

The results of the current study led to the conclusion that among staff nurses, factors affecting disaster risk management, challenges associated with disaster risk management, and disaster risk management nurse competencies were found to be positively correlated in a highly significant way. A statistically significant difference is found regarding staff nurses' responses to all items of factors affecting disaster risk management levels and challenges. The overall mean score of nurses' competencies in disaster risk management was high.

Recommendations

Based on the results of the present study, the following recommendations can be made:

1. Policymakers and managers must be aware of issues considering the increasing frequency of disasters and their detrimental effects on healthcare systems, particularly hospitals by identifying tactics and solutions to put them into practice.
2. For hospital administration to successfully apply disaster management technologies and practices, the organizational culture should be supported and adopted.
3. Conduct educational and training programs for nurses about the difficulties and aspects of disaster management in day-to-day work.
4. Ongoing technical training is crucial to creating a skilled labor force equipped to handle emergencies.
5. Future uncertainty, threats and stresses, livelihood, and governance are key components of developing a distinctive framework for nurses' disaster management competencies.
6. To maintain competent organizations, administrations need to create specialized teams, and host workshops and lectures on the issues surrounding disaster management, as well as the skills that

nurses need to be able to perform in a fast-moving, flexible, responsive, and adaptable manner.

7. More work needs to go into creating a framework and standardized language for disaster health professionals so that their competency sets can be articulated and adopted globally.
8. Future studies that examine and characterize nurses' core competencies in each domain should include nurses.
9. Programs that offer disaster training either virtually or through all-inclusive models of disaster preparedness may also be crucial in enhancing nurses' comprehension and proficiency in disaster management.

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Conflict of Interest

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