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**Perception of Nurses & Nursing Managers about Disaster
Management in north of Palestine**

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Perception of Nurses & Nursing Managers about Disaster Management in north of Palestine

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Thesis Approval

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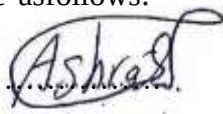
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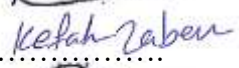
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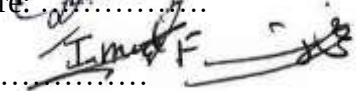
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Dedication.

I dedicate this thesis to my beloved family, whose unwavering support and encouragement have been my greatest strength throughout this journey. To my husband, for his boundless patience and understanding, and to my precious twins, who are my constant source of inspiration and joy. I am deeply grateful to my supervisor, Dr. Ashraf Abuejheisheh and Dr. Kefah Zaben, for his invaluable guidance, insightful advice, and steadfast belief in my potential. Your contributions have been instrumental in shaping this work and my academic growth. This accomplishment is a testament to all of you—thank you for walking this path with me.

Declaration

I certify that this thesis which is submitted to the Deanship of Graduate Studies to get the degree of master in on filed Nursing Management, this is my own research and my own work and it doesn't submit to any other universities or any institutions.

Signed:

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It is with great pleasure and gratitude that I take this opportunity to thank those who made the completion of this thesis possible.

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ABSTRACT

Background: Nurses and nursing managers are indispensable frontline responders during disasters in conflict-affected settings such as northern Palestine. Systematic evidence concerning their disaster management competencies, however, remains limited. The October 2023 conflict intensified healthcare system pressures, underlining the urgency of assessing preparedness perceptions among these key professionals to improve resilience within this high-risk context.

Study Aim: This study aims to evaluate the perceptions of disaster preparedness and core competencies among nurses and nursing managers working in governmental hospitals in northern Palestine. It seeks to identify factors influencing disaster management effectiveness, as well as gaps in competency areas requiring targeted development.

Methods: A descriptive cross-sectional survey was conducted with 250 nurses and nursing managers from governmental hospitals in Jenin, Nablus, Tulkarem, and Tubas between October 2023 and January 2024. Eligible participants had actively worked during the war and possessed at least six months of pre-war experience. Data collection employed a structured questionnaire, including the validated Nurses' Perceptions of Disaster Core Competencies Scale (NPDCC). Statistical analyses comprised descriptive statistics, chi-square tests, ANOVA, t-tests, Pearson correlations, and multiple linear regression to explore associations and predictors of disaster management effectiveness.

Results: The sample was predominantly experienced (77.6% >11 years in practice), female (58.8%), and bachelor's degree holders (73.2%). Overall disaster preparedness was rated as moderate (mean score = 140.81/225, SD = 27.48). Communication skills received the highest ratings (mean = 3.65/5, "high"), while critical thinking skills were identified as the weakest area (mean = 2.65/5, "moderate"). Regression analysis indicated that technical skills ($\beta = 14.122$, $p < 0.001$) and general diagnostic skills ($\beta = 12.802$, $p < 0.001$) were the strongest predictors of effective disaster response, together accounting for 90.2% of the variance ($R^2 = 0.902$). Higher preparedness was reported by male participants, those with advanced degrees, and individuals with clearly defined pre-disaster roles ($p < 0.001$). Prior disaster experience (54.8%) and engagement in disaster response roles (58%) were also significantly associated with enhanced perceptions of competency ($p < 0.05$).

Conclusions: Nurses and nursing managers in northern Palestine exhibit moderate competencies in disaster management, with significant strengths in communication but notable gaps in critical thinking skills. To address the challenges of ongoing conflict and resource limitations, it is recommended to: (1) integrate simulation-based training for critical thinking and technical skills into the national nursing curriculum; (2) formally define disaster response roles in advance; and (3) adopt the NPDCC as a standardized framework for disaster competencies. Such evidence-informed strategies can help bridge preparedness gaps and reinforce healthcare system resilience in Palestine.

Key words: Disaster preparedness, Nurses, Nursing managers, Core competencies, Conflict, Critical thinking, Communication skills, Palestine.

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Chapter One

Introductions

1.1 Introduction

This chapter presents the first chapter of thesis including, background, problem statement, and significance of the study. In addition, it includes the aim of the study, the research questions, theoretical and operational definition as well as a summary to the introduction chapter.

1.2 Background

Global healthcare systems face substantial operational challenges when responding to both natural and anthropogenic disasters. “The ongoing conflict in Palestine, particularly the war that began on October 7, 2023, has highlighted the critical need for effective disaster management in healthcare settings (WHO, 2024)”. This conflict has exacerbated an already complex situation in a region that has long grappled with political instability, resource limitations, and recurring crises (Mohammed et al, 2024).

Disaster management in healthcare has gone through major changes over the past several decades. The World Health Organization (2021) has outlined a comprehensive framework for managing health emergencies and disaster risks, emphasizing the importance of four interconnected phases: prevention, preparedness, response, and recovery. Within this structure, nurses and nursing managers take on crucial responsibilities. They are often on the front lines of disaster response, tasked with ensuring that patients continue to receive care even when the system is under extreme pressure. Their role is not only limited to clinical tasks but extends to coordination and leadership within chaotic and resource-limited situations (Shikh Aledi, 2020). These professionals are responsible for implementing emergency protocols, maintaining communication across teams, and managing both human and material resources. The value of their involvement has been increasingly acknowledged in healthcare disaster planning.

Palestine's healthcare sector is uniquely affected by its political and geographic situation. The division of services between the West Bank and Gaza Strip, combined with significant restrictions on movement, imports, and access to healthcare facilities, has created ongoing difficulties in delivering even routine care (Al Mezan Center, 2022). The escalation of war on October 7, 2023, dramatically worsened this situation. Healthcare infrastructure has been damaged, and the sudden increase in casualties overwhelmed many hospitals and clinics. Under these circumstances, effective disaster management protocols became not just important but urgent. As noted by Boukari et al. (2024), the conflict exposed the deep weaknesses in the system and tested the speed and efficiency of disaster responses. The war turned an already stressed system into one in crisis, and healthcare professionals had to adapt quickly. In this scenario, nursing managers had to take charge of organizing rapid response strategies while balancing limited resources and rising patient needs.

Nursing managers stand at the core of the disaster response team within healthcare institutions. Their work is not confined to reactive measures during an emergency; instead, they are also tasked with creating long-term strategies to strengthen future preparedness (Rahimi et al., 2024). As Fithriyyah et al. (2023) have emphasized, the responsibilities of nurse leaders in disaster scenarios require specific competencies. These include strategic decision-making, efficient use of resources, and the capacity to maintain clear judgment during high-stress conditions. Nurse leaders must often make life-altering decisions in a short time, coordinating teams and allocating limited supplies effectively. Such leadership not only supports immediate relief but also helps build institutional resilience. The ability of a nursing manager to stay composed, decisive, and well-informed can determine the success or failure of a hospital's disaster response.

Globally, the role of nursing managers in disaster preparedness and response is well documented. A systematic scoping review by Firouzkouhi et al. (2021) identified a wide range of responsibilities taken on by nurses in disaster settings. These include acting as frontline responders, care providers, educators, and logistic coordinators. These roles are even more important in the Palestinian context, where the likelihood of emergencies caused by political conflict remains high (Hawajri, 2016). Nurses not only provide medical care but also play a role in psychological support, coordination with external agencies, and communication with families. Their involvement at multiple levels of care makes them indispensable during emergencies. The expectation on nursing managers to lead by example adds to their workload but also makes their leadership visible and influential across the healthcare setting.

Research conducted by Aqtam et al. (2024) explored the disaster preparedness of healthcare professionals in Palestine, particularly during pandemic situations. The findings showed a notable gap in readiness. Nearly 67% of participants reported never having experienced a real disaster event, and 63% admitted to having no hands-on involvement in disaster response activities. Moreover, when asked about training needs, only 17.8% identified areas such as emergency preparedness, mass casualty management, and disaster triage as high-priority topics for development. These statistics reflect a concerning lack of

exposure and preparedness within the current workforce. While this research focused on pandemic situations, its findings also apply to armed conflict scenarios, where the need for rapid decision-making and coordination is just as pressing. The October 2023 war highlighted these weaknesses, revealing the urgent need for focused training and leadership development among nursing managers (Boukari et al., 2024; Mohammed et al., 2024). These individuals had to act swiftly despite limited resources, directing care under life-threatening conditions and often without adequate institutional support (WHO, 2024; MSF, 2023).

Given the extended nature of the recent conflict, disaster management cannot be viewed as a short-term response effort. Instead, nursing managers are required to implement long-range strategies aimed at sustaining healthcare services over time (Hawajri, 2016). This shift involves developing protocols that remain effective throughout prolonged periods of instability. It also requires ongoing staff training, resource planning, and contingency arrangements for supply shortages and infrastructure damage. Lee and Lee (2022) argue that successful disaster planning must be adaptable to changing circumstances, especially in regions exposed to repeated conflict. For Palestinian nursing managers, this means constantly re-evaluating current practices and being ready to revise strategies as the situation evolves. Maintaining care quality while responding to unpredictable emergencies remains one of the most difficult aspects of their job.

The influence of nursing managers also reaches beyond the walls of their hospitals. In disaster situations, they often coordinate with government health departments and international humanitarian organizations to ensure a unified response (AlOtaibi et al., 2024). This role is vital for efficient resource distribution, proper information flow, and the application of consistent procedures across multiple healthcare sites. In Palestine, where various agencies and institutions must work together under pressing conditions, this coordinating role becomes even more critical. The World Health Organization (2023) notes that clear communication and shared leadership among stakeholders are key elements in successful disaster response. Nursing managers, by serving as the link between different organizations, help maintain these vital connections and promote a more organized and effective healthcare response.

With the war still ongoing, it is clear that existing disaster management strategies must be updated and adapted to meet the specific needs of the Palestinian context. There is a growing demand for locally informed, evidence-based approaches that reflect the daily realities of nurses and their managers. This study aimed to respond to that need by investigating the roles and experiences of nurses and nursing managers during the conflict that began on October 7, 2023. By focusing on their real-world experiences, the study seeks to inform future strategies and strengthen disaster preparedness in Palestine's healthcare sector.

1.3 Problem Statement

The conflict that erupted on October 7, 2023, has placed unprecedented strain on the already fragile healthcare infrastructure in Palestine, particularly affecting the West Bank region (Doctors Without Borders [MSF], 2024). The healthcare system in the West Bank, which was already under-resourced, has been further strained by the conflict. Many hospitals and clinics have been damaged or are operating under extremely challenging conditions due to military incursions, road closures, and infrastructure damage (ACT Alliance EU, 2024).

Healthcare workers in the West Bank face significant risks and obstacles, with reports of attacks on health workers, ambulances, and medical facilities severely hindering their ability to provide care (MSF, 2024). The World Health Organization has documented numerous attacks on healthcare facilities in the West Bank since the conflict began, leading to the closure of several hospitals and health centers (ACT Alliance EU, 2024).

Healthcare accessibility for West Bank Palestinians has deteriorated markedly. Escalating movement constraints severely impede patient transit to medical facilities, with many foregoing treatments due to the risks and challenges of travel (ACT Alliance EU, 2024). The referral system for specialized care, often outside the West Bank, has been severely disrupted, leaving many patients without access to necessary treatments, especially for conditions like cancer (MSF, 2024).

In response to these challenges, healthcare providers in the West Bank have had to adapt by deploying mobile clinics to reach areas where fixed facilities are no longer operational or accessible (MSF, 2024). The demand for emergency health services has increased dramatically due to conflict-related injuries and limited access to regular health services (International Rescue Committee [IRC], 2024). Additionally, implementing surveillance for potential disease outbreaks has become a crucial part of the disaster management strategy, given the deteriorating sanitary conditions (ACT Alliance EU, 2024).

The situation in the West Bank highlights the critical need for effective disaster management protocols and the important role of nursing managers in coordinating and implementing these strategies (Hawajri, 2016). As the conflict continues, there is an urgent need for comprehensive long-term recovery planning to rebuild and strengthen the healthcare infrastructure in the West Bank, while also addressing the immediate challenges of providing care under ongoing conflict conditions (IRC, 2024).

Despite the crucial role of nursing & nursing managers in disaster management, there is limited research on their specific contributions and challenges in the context of the ongoing conflict in Palestine. The war that began on October 7, 2023, has created a unique set of circumstances that require in-depth examination to understand the effectiveness of current disaster management strategies and the role of nursing managers in implementing these strategies (World Health Organization [WHO], 2022). The problem is further compounded by the lack of standardized disaster management protocols tailored to the Palestinian context, insufficient training programs for nursing managers in disaster response, and the

need for improved coordination between different healthcare facilities and governmental bodies during crises (Aleid, 2020).

The situation in the West Bank highlights the critical need for effective disaster management protocols and the important role of nursing managers in coordinating and implementing these strategies. As the conflict continues, there is an urgent need for comprehensive long-term recovery planning to rebuild and strengthen the healthcare infrastructure in the West Bank, while also addressing the immediate challenges of providing care under ongoing conflict conditions (WHO, 2024).

This study addresses a critical empirical void in disaster nursing literature, situated at the intersection of significant regional and international gaps. Regionally, while research on disasters in the Middle East exists, a stark lack of context-specific inquiry fails to capture the unique socio-political and infrastructural realities of the Palestinian healthcare system, particularly post-October 2023, where mobility restrictions and a protracted occupation create challenges that cannot be extrapolated from other conflicts. Internationally, established disaster nursing frameworks predicated on stable infrastructure are ill-suited to this chronic complex emergency, creating a gap in understanding how protocols are adapted or fail in such severely resource-constrained, high-risk environments. Compounded by a lack of standardized protocols and training in Palestine (Aleid, 2020), this research is urgently needed to illuminate frontline nursing perspectives, aiming to inform resilient, context-tailored strategies while contributing critical insights to the global discourse on nursing in complex humanitarian emergencies.

1.5 Significance of the Study

This study holds significant value for clinical practice, nursing education, and future scholarly work by addressing critical gaps in our understanding of disaster management in complex humanitarian emergencies.

1.5.1 Clinical Significance:

The study holds profound clinical significance as it will generate first-hand empirical evidence on the adaptive practices and decision-making processes of nurses and nursing managers operating under extreme duress. By documenting their lived experiences, the findings will provide an invaluable evidence base to inform the development of more robust, context-aware clinical protocols for triage, resource allocation, and continuity of care in settings of chronic conflict and infrastructure collapse. This knowledge is critical for strengthening the resilience of healthcare systems in Palestine and similar contexts.

1.5.2 Educational Significance:

The study carries substantial educational significance by illuminating the specific competencies and knowledge gaps of nursing personnel in a high-intensity conflict zone.

The findings will provide a crucial evidence base to guide the substantive revision of disaster preparedness and nursing leadership curricula. This empirical insight into the realities of the Palestinian context is essential for moving beyond theoretical or natural-disaster-centric models and towards creating authentic educational content, including simulations and training modules, that accurately prepares nurses for the challenges of armed conflict and complex humanitarian disasters.

1.5.3 Future Research Significance

This study identifies multiple under-researched areas in conflict-zone disaster response. It lays a foundation for future research on the psychological impact of conflict on nurse leaders, the effectiveness of mobile clinics, and the long-term sustainability of nursing-led emergency interventions. Comparative studies between regions or across conflicts could deepen global understanding of nursing leadership in war-related disaster management. Findings may also inform the design of cross-sector coordination models and standardized frameworks for emergency nursing leadership under armed conflict.

1.6 Aim of the Study

The primary aim of this study was to evaluate the perception of nurses and nurses' managers about disaster management in healthcare facilities across the north of West Bank in Palestine during the war that began on October 7, 2023.

1.7 Objectives of the Study

1. To assess the perceptions of nurses and nursing managers regarding disaster management domains (critical thinking, special diagnosis, general diagnosis, technical skills, communication skills) in healthcare facilities across the north of Palestine.
2. To analyze the influence of demographic variables (e.g., years of experience, education level, geographic location, role in hospital settings) on perceived levels of disaster management among nurses and nursing managers.
3. To determine the highest and lowest mean scores of perceived disaster management competencies (via Nurses' Perceptions of Disaster Core Competencies Scale (NPDCC) Likert-scale responses) among nurses and nursing managers.

1.8 Research Questions

1. what is the level of perception of Nurses & Nursing Managers about Disaster Management in north of Palestine?
2. Is there a significant difference of level of perception among Nurses & Nursing Managers based on their demographics (e.g., sex, years of experience, education, and residency)?
3. What are the highest & lowest mean score of level of perception Nurses & Nursing Managers about disaster management?

1.9 Study hypothesis Results:

H1: The disaster management effectiveness of nursing managers in Palestine during the October 7, 2023, war is significantly influenced by the core competency components measured by the NPDCC scale, including Critical Thinking Skills, Special Diagnostic Skills, General Diagnostic Skills, Technical Skills, and Communication Skills.

H2: There are significant differences in perception of Nurses & Nursing Managers about Disaster Management in north of Palestine, based on demographic variables (e.g., Gender, Age, Marital status, years of experience and qualifications), as measured by the (NPDCC) Scale components.

1.10 Definition of Terms

- **Disaster Management:** The organization and management of resources and responsibilities for dealing with all humanitarian aspects of emergencies, particularly preparedness, response, and recovery (World Health Organization [WHO], 2021).
- **Nursing Managers:** Healthcare professionals responsible for overseeing nursing staff, coordinating patient care, and managing resources within a healthcare facility (Fithriyyah et al., 2023).

Table 1.1: Definition of Study Variables

	Term	Theoretical Definition	Operational Definition
1.	Disaster Management level	The organization and management of resources and responsibilities for dealing with all humanitarian aspects of emergencies, particularly preparedness, response, and recovery (World Health Organization [WHO], 2021).	NPDCC tool developed by (Celik, 2010), (Taskiran & Baykal, 2019) The instrument consists of 45 statements divided into five distinct categories: Critical Thinking, Specialized Diagnostic Abilities, General Diagnostic Abilities, Technical Proficiency, and Communication. It utilizes a Likert scale, with responses ranging from 1, indicating 'This should be learned,' up to 5, representing 'I am capable of both performing and instructing this skill.' The total possible score spans from 45 to 225, where a greater score reflects a stronger self-assessed competency in essential disaster management skills.

1.11 Summary:

This chapter has introduced the background, problem statement, significance, aims, objectives, research questions, and hypotheses of the study on the role of nursing managers in disaster management during the ongoing conflict in Palestine. The research seeks to address critical gaps in understanding and improving disaster response in Palestinian healthcare facilities, with a focus on the pivotal role of nursing managers.

Chapter Two

Literature Review

2.1 Introduction

This chapter reviews available literature concerning the roles of nursing managers in disaster management within healthcare institutions, with particular attention to the situation in Palestine during the conflict that began on October 7, 2023. The outbreak of war brought to the surface the urgent need for well-organized disaster readiness and management in the health sector, especially in areas like Palestine, which are repeatedly exposed to political instability and humanitarian emergencies (Boukari, Y., 2024). The large-scale destruction and mounting death tolls in the Gaza Strip (WHO, 2024) underline the many difficulties healthcare professionals face when trying to deliver critical services in high-risk, resource-depleted environments. Studies have reported that many health workers in Palestine are under extreme mental pressure, with symptoms such as PTSD, anxiety, insomnia, and depression being common due to the sustained violence and trauma they encounter daily (Al-Masri et al., 2020). These psychological factors must be considered when evaluating their ability to effectively respond in emergencies.

To manage disasters well in the health field, both governmental systems and healthcare institutions need to show resilience and planning capacity. The interconnectedness of modern systems means that local emergencies often lead to broader consequences. The COVID-19 pandemic is a clear example of how unprepared systems can trigger global impacts (Ravindran, 2021). One recent investigation into disaster preparedness among Palestinian healthcare staff highlighted the need for hospital leadership to follow national protocols, engage staff in continuous education, and address clear skill and knowledge gaps (Aqtam I. et al., 2024). The review emphasized that, without such efforts, healthcare systems remain vulnerable and reactive instead of proactive. Nurses and doctors, especially those on the front lines, hold key responsibilities in responding to disasters. Their clinical training and local knowledge place them at the center of any effective health intervention

during crises (Farghaly S. et al., 2022). Yet, several studies suggest that many of these professionals are underprepared for the complex demands of disaster response, which points to an urgent need for better training and more consistent education programs (Azizpour et al., 2022).

2.2 Search Strategy

To develop this review, a systematic search was conducted using targeted keywords such as "nursing & nursing managers," "disaster management," "healthcare facilities," and "Palestinian healthcare." Sources were identified through major academic databases including PubMed, Scopus, and Google Scholar. This process helped filter out studies lacking rigor and ensured that the included materials were directly relevant to assessing the roles of nurses and nursing managers in managing disaster response in health settings. The review places a strong focus on how nurses in Palestine experienced and responded to disasters, particularly pandemics and conflicts. Despite the wide international research on disaster readiness, few studies delve deeply into the lived experiences of Palestinian nurses, which underlines the necessity for the present study to fill this gap.

2.3 Definition and Impact of Disasters

Disasters, whether caused by nature or human action, often lead to major loss of life, damage to infrastructure, and widespread disruption across social and economic systems (Songwathana P & Timalisina R., 2020). The World Health Organization (2024) notes that disasters can destroy buildings, cause harm to natural environments, lead to the loss of human and animal lives, and place intense strain on health systems. The United Nations Office for Disaster Risk Reduction (UNDRR) recorded that between 2012 and 2019, 79,732 people died due to disaster events. In the same period, India experienced over 300 major disasters, resulting in an estimated 80 billion dollars in economic damages (UNDRR, 2020). These figures highlight the heavy toll disasters take on both human well-being and national economies. In conflict zones like Gaza, disasters often take the form of war-related destruction, further complicating healthcare delivery and increasing mortality.

2.4 Role of Nurses in Disaster Management

Nurses have consistently taken on essential roles throughout all stages of disaster response. They not only support physicians but also offer critical services including public education, outreach, and health promotion activities that aim to limit harm before and during disaster events (Firouzkouhi et al., 2021; Veenema, 2020). During crises, nurses are responsible for emergency medical care, triage, delivering essential medication, and monitoring patients' physical and psychological conditions. They also handle ethical decisions regarding the use of scarce resources and manage rapid changes in patient loads (Boukari et al., 2024; Hawajri, 2016). In addition to clinical roles, nurses take part in logistical operations such as planning facility response strategies, developing protocols, and joining incident command structures (Firouzkouhi et al., 2021; Veenema, 2020). These responsibilities

show the depth of their contribution to disaster operations, especially during extended emergencies (Rahimi et al., 2024).

Nurses also play an active part in community-based disaster activities. They manage emergency shelters, coordinate blood donations, and extend care to underserved groups. Their work ensures that vulnerable populations—including older adults, pregnant women, and displaced families—continue to receive care even when systems break down (National Academies of Sciences; Fithriyyah et al., 2023; AlOtaibi et al., 2024). Often, this places them in physically and emotionally dangerous situations. Yet their willingness to continue working under such circumstances reflects the ethical commitment and professional responsibilities nurses uphold in times of crisis (Veenema et al., 2016).

2.5 Disaster Preparedness and Response

The success of disaster management depends on how well health professionals are prepared before an emergency occurs. Preparatory efforts usually involve formal education, scenario-based drills, practical training, and simulations aimed at improving readiness. These efforts build the foundation needed to reduce disaster-related harm and loss. Once a disaster begins, the system shifts to the response phase, which centers on enacting emergency plans, providing safe evacuations, arranging shelters, and ensuring that critical utilities like power and clean water remain available. At the same time, physical injuries and mental trauma must be addressed quickly to prevent long-term harm. Following the active response, the recovery stage focuses on rebuilding damaged buildings, offering financial support to affected families, and restoring basic healthcare services and rehabilitation for those impacted (Dixit, S., et al., 2023). The role of nursing managers is present in each of these phases, whether through planning, executing, or overseeing post-disaster care efforts.



Figure 2.1: Phases of a disaster response

Source: (Dixit, S., et. al, 2023).

2.6 Gaps in Nursing Preparedness

Despite the critical role of nurses in disaster management, there are significant gaps in their preparedness. Studies have shown that basic knowledge about health system emergency preparedness is generally lacking among nurses, including school nurses who are expected to play key roles during public health emergencies (Thobaity Al., 2024; National Academies of Sciences, Engineering, and Medicine, 2021). For instance, a survey of over 5,000 nurses found that 78% had little or no familiarity with emergency preparedness and disaster response (Usher, K et al., 2015; Nurse.com, 2024). These gaps highlight the need for targeted training programs and resources to enhance nurses' readiness for disaster scenarios (Farokhzadian, J., et al., 2024; PMC, 2016).

Several studies have highlighted the factors influencing nurses' disaster preparedness. Dewa Gede Sanjaya Putra (2020) identified six key factors: perception and working experience in past disasters, experience in the field, disaster simulation training, self-regulation, and family readiness and support.

Additionally, Kimin et al. (2022) emphasized that nurses' clinical experience, previous disaster experience, and training are crucial for increasing their adaptability in disaster conditions. Support from the workplace and proper implementation of disaster management policies also enhance nurses' services and prevent barriers under disaster conditions.

2.7 Leadership and Training for Nurse Managers

Nurse leadership is essential in disaster response, and greater effort is needed to develop and evaluate training programs for nurse leaders. These programs should cultivate communication, business, and leadership competencies to improve healthcare response, patient outcomes, staff well-being, and the financial stability of hospitals (Aqtam et al., 2024).

The COVID-19 pandemic has indeed highlighted the critical importance of disaster response education and training for nurses. Veenema et al. (2022) noted that the pandemic revealed significant gaps in the healthcare workforce's preparedness and capacity to respond, necessitating a reevaluation of nursing education programs. This observation is further supported by Sickora et al. (2022), who emphasized that nursing has faced criticism for inconsistent attention to disaster response training in academic settings.

2.8 Organizational and Systemic Factors

The preparedness of the nursing workforce is influenced by various factors across governmental, system, and organizational levels. The Centers for Medicare & Medicaid Services (CMS) Emergency Preparedness Rule, enacted in 2017, established requirements for planning, preparing, and training for emergencies but did not address the preparedness of the nursing workforce specifically (HRSA, 2021).

Accrediting bodies like the Commission on Collegiate Nursing Education (CCNE) and The Joint Commission have standards and guidelines that can help ensure nursing programs align with disaster response content, but more needs to be done to evaluate the level of knowledge among staff and require additional training or workforce development. Aqtam et al. (2024) emphasized the importance of hospital managers implementing national standards, engaging healthcare professionals in continuous education, and addressing gaps in perceived competence to enhance disaster management preparedness among nurses and physicians.

2.9 Palestinian Context

In the context of Palestine, particularly during the war that began on October 7, 2023, the role of nursing managers in disaster management is even more critical. The ongoing conflict and humanitarian crises in the region exacerbate the challenges faced by healthcare professionals. Nurses in Palestine must navigate complex and resource-constrained environments to provide medical assistance under extreme conditions. Recent research conducted by Aqtam and colleagues (2024) explored how well healthcare workers in Palestine were prepared for disaster scenarios during pandemic events. Their results revealed that participants possessed differing degrees of disaster-related knowledge, and notably, more than two-thirds (67%) had never directly encountered an actual disaster. The authors highlighted the necessity for hospital administrators to implement recognized national protocols, foster ongoing professional development for staff, and actively work to bridge gaps in perceived competency among healthcare teams.

Saidam, M., & Eljedi, A. (2020) study found that the level of role perception of nurses during disasters “was 81.5% (e.g., ability to participate in an emergency plan, provide psychosocial support, have high confidence during emergencies, etc.), followed by field of “nurses’ knowledge of disasters” with 78.03% (e.g., past experience, updated information, etc.). (Saidam, M., & Eljedi, A.. 2020)”

“Although the Palestinian emergency nurses have an acceptable level of knowledge and role perception during disasters, they still need to raise their level of knowledge, preparedness and skills by integrating clearly defined theoretical and training sessions on disaster management in nursing curricula and through in-service activities for employees (Aqtam I. et al, 2024)”.

2.10 Summarized articles in disaster management

Disaster management in healthcare settings is a critical area of concern, especially in conflict-affected regions such as Palestine. Nurses and nursing managers are frontline responders whose perceptions, knowledge, and preparedness significantly influence the effectiveness of disaster response. This literature review synthesizes current evidence on nurses’ and nursing managers’ perceptions of disaster management, highlighting key findings, gaps, and implications for practice and policy.

1. Disaster Preparedness in Palestinian Hospitals

Amar BW et al. (2025) – “Evaluation of West Bank hospitals' disaster preparedness plans using a mixed-methods approach”

This mixed-methods study evaluated disaster preparedness in Palestinian governmental hospitals across the West Bank. The sample included 298 healthcare providers and administrators, with nurses comprising 45.3%. The study found high levels of safety and security practices but only moderate levels of emergency management planning and staff readiness/training. Communication and warning systems, as well as the presence of disaster preparedness committees, significantly impacted overall preparedness. The authors recommend enhancing training, communication, and the implementation of comprehensive emergency management plans to improve hospital readiness for disasters.

2. Impact of Pandemics on Nursing Education and Perception

Jawaher Salah (2024) – “Perceptions of Nursing Students in Palestinian Universities of the Impact of Covid-19 Pandemic on their Practical Training”

Using a descriptive cross-sectional design, this study surveyed 93 nursing students in Palestinian universities. The results revealed that the COVID-19 pandemic negatively affected practical training, though students reported high confidence in personal protection and coping strategies under stress. The study underscores the importance of integrating disaster preparedness and stress management into nursing curricula, especially in regions prone to frequent emergencies.

3. Disaster Management Preparedness Among Healthcare Professionals

Aqtam I. et al. (2024) – “Evaluating Disaster Management Preparedness among Healthcare Professionals During Pandemics: Palestinian Context”

This online survey involved 512 nurses and 241 physicians from both government and private hospitals in Palestine. The study found that 67% of participants had no prior disaster experience, and 63% had not participated in disaster response. Only 17.8% prioritized disaster management training. The study highlighted gaps in knowledge and perceived competence, recommending continuous education, adoption of national standards, and regular disaster drills to enhance preparedness.

4. The Effectiveness of Disaster Management Training

Al-Otaibi SS et al. (2024) – “Enhancing Nurses’ Disaster Management and Preparedness: Evaluating the Effectiveness of an Online Educational Program”

A quasi-experimental study with 88 nurses in a public hospital assessed the impact of an online educational program. While most nurses (78.4%) reported ongoing disaster training, the improvements in disaster management perceptions post-intervention were not statistically significant. The study suggests that while online programs are valuable, more robust and interactive training, possibly combined with practical simulations, may be needed to significantly enhance disaster preparedness.

5. Disaster Management Knowledge and Demographic Factors

Farghaly Abdelaliem SM et al. (2023) – “A Cross-sectional Study About Nurses’ and Physicians’ Experience of Disaster Management Preparedness Throughout COVID-19”

This cross-sectional study in Saudi Arabia included 608 nurses and 228 physicians. It found that participants had better knowledge of the preparedness stage than mitigation and recovery. Only a small proportion of knowledge variance was explained by demographics and work characteristics. The study recommends targeted training and inclusion of disaster management in continuous professional development, regardless of demographic background.

6. The Role of Nurses in Disaster Management: A Review

Dixit S et al. (2023) – “A Review on the Role of Nurses in Disaster Management in India”

This narrative review highlights the multifaceted role of nurses in disaster management, including assessment, prioritization, resource estimation, and addressing psychological needs. The review emphasizes the need for clear role definitions, structured training, and inter-professional collaboration in disaster scenarios.

7. Nurse Leadership in Disaster Management

Fithriyyah YN et al. (2023) – “Indicators of Nurse Leadership in Disaster Management: A Qualitative Study”

Through interviews and focus groups in Indonesia, this qualitative study identified 49 indicators of nurse leadership across disaster management phases (mitigation, preparedness, response, recovery). Leadership was characterized by three Cs: character, competence, and central role. The study recommends developing leadership competencies and integrating them into disaster management frameworks.

Pekkarinen L. (2019) – “Nursing Leadership in Disasters: A Scoping Review”

This scoping review synthesized 17 articles and found that while nurses are expected to take leadership roles in disasters, there is no consensus on the core competencies required. The review calls for the development of standardized competencies and recognition of nurses as leaders in disaster response.

8. Nurses’ Roles and Perceptions in Palestinian Context

Saidam MN & Eljedi AY (2020) – “Palestinian emergency nurses’ knowledge and role perception about disaster management: a need for immediate actions”

A cross-sectional study of 162 emergency nurses in Gaza found high levels of perceived roles (81.5%) and knowledge (78%) in disaster management. However, the study highlighted the need for more structured theoretical and practical training in disaster management, recommending integration into nursing education and ongoing professional development.

Bayan Ibrahim Shikh Aleid (2020) – “Nurses Perceptions of their Preparedness for Disaster Management at Governmental Hospitals in Gaza Strip”

This descriptive study surveyed 320 nurses in Gaza, finding high perceptions of skills (75%), preparedness (72.6%), and roles (72.2%), but lower perceptions of hospital readiness (65.6%). Significant differences were observed based on age, education, experience, and department. The study recommends targeted training, resource allocation, and policy development to enhance disaster readiness.

9. International Perspectives on Nurses’ Roles in Disaster Management

Firouzkouhi M et al. (2021) – “Nurses’ roles in nursing disaster model: A systematic scoping review”

This review identified nurses’ roles before, during, and after disasters, emphasizing their importance in planning, response, and recovery. The study calls for clearer role definitions and structured disaster management models in nursing.

10. Kimin A et al. (2021) – “Factors affecting nurses’ ability to provide effective care in a disaster response: A review”

This review found that knowledge, experience, training, and institutional support are key factors influencing nurses’ disaster response abilities. Barriers include lack of training, resources, and support, while ongoing education and workplace policies enhance preparedness.

2.11 Commonalities and Differences

2.11.1 Commonalities

- **Knowledge and Training Gaps:** Most studies, regardless of setting, identify gaps in disaster management knowledge and preparedness among nurses and nursing managers.
- **Importance of Training:** Continuous education, drills, and integration of disaster management into nursing curricula are universally recommended.
- **Role of Leadership:** Nurse leadership is highlighted as critical in disaster response, with an emphasis on developing leadership competencies.
- **Influence of Demographics:** Several studies found that factors such as age, experience, education, and department influence perceptions and preparedness, though the impact varies.

2.11.2 Differences

- **Contextual Challenges:** Studies in Palestine emphasize the added complexity of conflict and resource limitations, while international studies often focus on natural disasters or pandemics.
- **Perceived Competence:** Palestinian nurses tend to report higher perceived roles and preparedness compared to some international counterparts, possibly reflecting frequent exposure to emergencies.
- **Training Modalities:** While online and theoretical training is common, its effectiveness is debated; practical, simulation-based training may yield better outcomes.

- **Leadership Definition:** There is a lack of consensus on core leadership competencies in disaster nursing, with calls for standardized frameworks.

2.12 Conclusion and Research Gaps

Despite high perceived roles and preparedness among nurses in Palestine, significant gaps in knowledge, practical skills, and institutional readiness remain. The literature consistently calls for structured, context-specific training, leadership development, and policy support. Future studies should focus on evaluating the effectiveness of different training modalities, developing standardized competency frameworks, and exploring the impact of demographic and contextual factors on disaster management perceptions.

2.13 Summary

This literature review highlights the critical role of nursing managers in disaster management, particularly in conflict zones like Palestine. It underscores the importance of robust disaster management strategies, including education, training, and leadership development for nurses. By synthesizing existing research, this chapter provides a comprehensive understanding of the challenges and opportunities in enhancing the role of nursing managers in disaster management during times of conflict.

Chapter three

Methodology

3.1 Introduction

This chapter outlines the steps undertaken during the research process. It provides a detailed account of the study's methodological framework, including the sampling strategy, research design, data collection tools, statistical analysis methods, ethical considerations, and the procedures used for gathering and analyzing data.

3.2 Study Design

A quantitative, descriptive, cross-sectional approach was employed to conduct the research to examine the perception of nursing & nursing managers about disaster management within Palestinian healthcare facilities during the war that began on October 7, 2023. This design is chosen for several reasons.

Firstly, a cross-sectional design enables researchers to gather information from participants during a single, defined period, providing a snapshot of the population at that moment, which is particularly useful when the goal is to assess the current state of nursing & nursing managers' experiences and the immediate effects of orientation programs (Creswell & Creswell, 2018). This approach provides a snapshot of the variables under study, enabling researchers to identify relationships and patterns that exist at a specific moment. Secondly, cross-sectional studies are efficient and cost-effective, as they do not require long-term follow-up or repeated measurements (Bryman & Bell, 2015). Given the constraints often faced in healthcare settings, this design is practical for gathering comprehensive data without imposing undue burdens on the participants or the institutions. Thirdly, the cross-sectional design is well-suited for exploratory and descriptive research aims, which align with the objectives of this study (Kumar, 2019). By examining the relationships between the variables of interest, such as the components of orientation programs and the outcomes for nursing & nursing managers, this design facilitates an understanding of how these factors interrelate.

3.3 Study Population

The study population encompasses nurses and nursing managers employed in Palestinian Ministry of Health on north of West Bank, Palestine. As of 2023, the West Bank has a total of 3031 nurse and nurses' managers (Ministry of Health, 2023).

3.4 Study Setting

This study was conducted in the northern governorates of the West Bank, Palestine, a region experiencing heightened instability and direct impacts following the escalation of conflict on October 7, 2023. The setting was deliberately chosen to capture the experiences of nursing professionals working in a context of active, protracted crisis.

The research focused specifically on the governmental hospitals serving as the primary referral centers in these northern districts:

- Jenin Governmental Hospital (Jenin Governorate)
- Rafidia Surgical Hospital (Nablus Governorate)
- Thabet Thabet Governmental Hospital (Tulkarem Governorate)
- Tubas Governmental Hospital (Tubas Governorate)

These facilities represent the core of the public healthcare infrastructure in the northern West Bank, bearing the primary responsibility for emergency response and trauma care amidst the conflict. They operate under severe and unique duress, characterized not only by a surge in conflict-related casualties but also by chronic challenges such as military incursions, movement restrictions (checkpoints and roadblocks), intermittent closures, and damage to critical infrastructure (e.g., roads, water, electricity), which directly impede the delivery of healthcare services.

According to the Ministry of Health (2021), these four hospitals are staffed by a total of approximately 711 nurses, who must navigate these complex barriers to provide continuous care. This combination of a high-acuity patient load, resource constraints, and a volatile operational environment creates a critical case study for examining disaster management protocols and nursing leadership under extreme conditions. This setting provides invaluable insights into the resilience and adaptation of healthcare systems during active armed conflict.

3.5 Sample Size and Selection Method

The sample size in this study was calculated using online formula (Sample size Calculator, 2025). Based on known population of 3031 nurses and nurses' managers, a minimum sample size of 250 nurses were required with respect to confidence interval 0.90, margin of error 5%. However, we increased 10% on the total required sample to compensate for the attrition and low response rate. Therefore, we increase the sample size to 275 nurses and nursing managers. But or final sample size that have been analyzed in this study was 250 nurses and nurse's managers.

3.6 Data Collection Procedure

Data collection consisted from a multi-step process, ensuring compliance with ethical standards and participant confidentiality. First, we obtained the necessary ethical approvals by submitting our research proposal to the Research Ethics Committee (REC) of the relevant authority (AQU) (Ref. No. RES/2025-41) please refer to appendix (D) . Once approvals were secured, we established collaborations with the nursing departments within these healthcare institutions to gain their support and assistance in distributing the questionnaires. The structured questionnaires, available in paper-based formats to accommodate different accessibility needs, designed to capture data related to the role of nursing managers in disaster management. The questionnaires were distributed through the nursing departments, with paper-based formats handed out directly or made available at designated locations. To ensure confidentiality and anonymity, participants informed that their responses were kept confidential and were not identifiable in the final analysis, and they provided with an informed consent form outlining the study's purpose, benefits, and risks. Finally, follow-up activities were conducted to ensure a high response rate, and once the questionnaires were completed and returned, the data were collected, reviewed for completeness, and prepared for analysis.

3.7 Eligibility Criteria

3.7.1 Inclusion Criteria

- Nurses and nursing managers who have been in their current position for at least 6 months prior to the start of the war on 7 October 2023.
- Nurses and nursing managers who were actively working during the period of the war (from 7 October 2023 onwards).
- Individuals willing to participate in the study and provide informed consent.

3.7.2 Exclusion criteria

- Nurses and nursing managers who were on extended leave or not actively working during the period of the war.
- Those who have been in their position for less than 6 months prior to 7 October 2023.
- Individuals unable or unwilling to provide informed consent.

3.8 Study Instruments

this research assessed two main aspects of nurses' perceptions: their views on disaster preparedness and their assessment of disaster-related core competencies. Data were gathered using a structured tool composed of three sections:

1. **Demographic variables:** Developed by the researcher after a comprehensive review of existing literature, this section included 13 items designed to capture demographic such as age, Gender, Marital status, Education, experience and position. and professional details about participating nurses.

2. Nurses' Perceptions of Disaster Core Competencies Scale (NPDCC):

The NPDCC, originally created and validated by Celik (2010) using a Turkish nursing cohort, was utilized to evaluate participants' perceived proficiency across essential disaster competencies. This instrument was informed by the International Nursing Coalition for Mass Casualty Education's (INCMCE, 2003) recommended competencies and relevant literature. The scale comprises 45 items distributed among five domains: Critical Thinking, Specialized Diagnostic Abilities, General Diagnostic Skills, Technical Proficiency, and Communication. Responses are recorded on a five-point Likert scale, ranging from 1 ("Needs to be taught") to 5 ("Able to perform and teach"). Total scores can range from 45 to 225, with higher totals reflecting greater perceived competency. The scale demonstrates strong internal consistency, with subscale reliability coefficients between 0.81 and 0.92, and an overall alpha of 0.96 (Celik, 2010).

Scoring Levels: Celik, F. (2010)

1. Low Level: 45 - 105 points
2. Moderate Level: 106 - 165 points
3. High Level: 166 - 225 points

3. 9 Data Analysis Plan

The statistical package for social science (SPSS) program version 27 was used for data analysis in this researcher. SPSS program provides comprehensive suite of capabilities, usability and flexibility compared to traditional statistical software. In addition, it is useful to manage and analyze huge data sets and it optimize organizational strategies.

3.10 Data Analysis Techniques:

The selection of data analysis methods was closely aligned with the research aims and the characteristics of the data collected. Since this study utilized a quantitative approach, both descriptive and inferential statistical methods were applied.

1. Descriptive Analysis:

Descriptive statistics were used to outline the demographic profile of participants and to summarize responses gathered through the survey instruments. This involved calculating measures such as frequencies, percentages, means, medians, modes, and standard deviations, thereby offering a detailed snapshot of the dataset.

2. Inferential Analysis:

To examine research hypotheses and explore potential relationships between variables—specifically, the perceived disaster management competencies among nurses and nursing managers—inferential statistical techniques were implemented. The analysis included

regression models, independent samples t-tests, one-way ANOVA, Tukey's post hoc tests, and assessment of reliability using Cronbach's alpha coefficient.

The Pearson's correlation coefficient was chosen as the inferential statistic due to its efficacy in identifying linear relationships between variables. To assess the distribution characteristics of the data, a histogram was generated, revealing an approximately normal distribution centered around the group mean of 3.13. see figure 3.1 below.

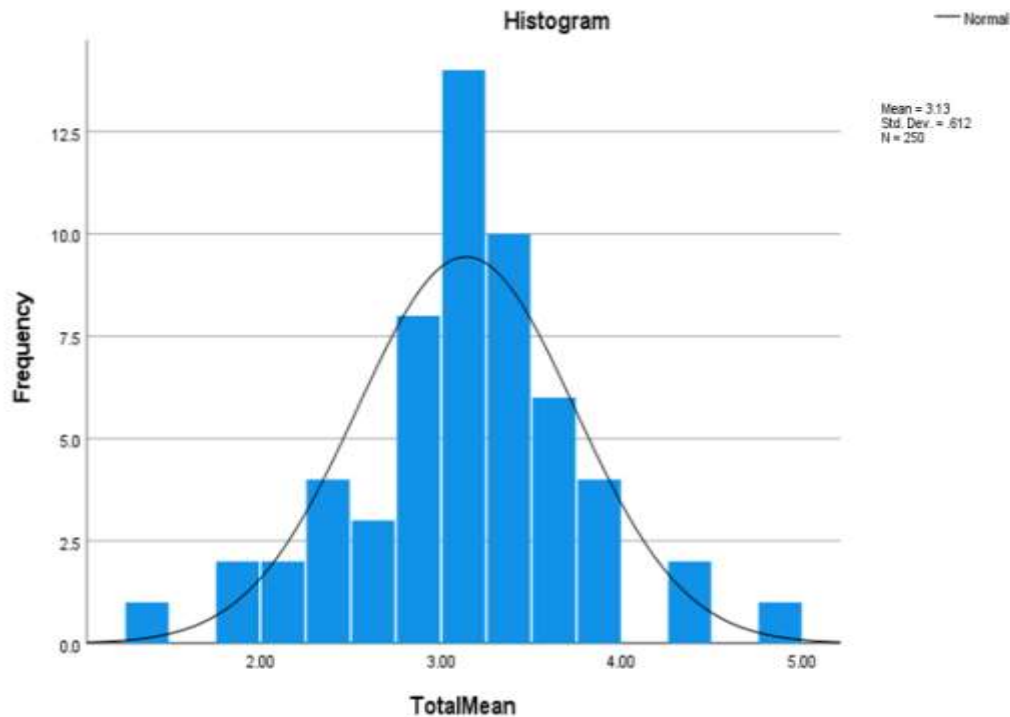


Figure (3.1): Normal distribution test

3.11 Data Management

This study, data was organized into folders or databases based on date, governorate and hospital. In addition, a copy of the questionnaire and consent form, as well as the participants' written and verbal consent, kept in a locked cabinet and on an encrypted external device on the computer to insure participant privacy. For a certain period, data on platforms like Google Drive or institutional repositories were only be accessible by authorized users. Use Excel worksheet templates with pre-determined formats and data validation to guarantee consistency in data entry. Utilize statistical techniques like mean substitution, multiple regression to deal. Helsinki and other relevant laws and norms used followed during the procedures.

3.12 Pilot Study

An initial pilot study was carried out involving 57 participants, including 9 nursing managers & 48 nurses both nurses. The primary aim was to assess the data collection

procedures, determine whether the questionnaire items were clear and suitable, and estimate the time needed for completion. It is important to note that the data obtained from this preliminary phase were not incorporated into the final analysis. The findings showed that the questionnaire was clear and relevant, with strong internal consistency (Cronbach's Alpha 0.945) and high item-subscale correlations (all above 0.70) as indicated in Appendix (C). These results suggest the tool is reliable for assessing disaster competencies.

3.13 Instrument Validity

The process of establishing the validity of the survey instrument was conducted in two main stages. First, a panel of subject matter experts and referees reviewed the tool and offered feedback for improvement. In the second stage, the pilot study (N=50) was utilized to further validate the instrument, employing exploratory factor analysis to examine its underlying structure. The researchers assessed the effectiveness of the scale items (internal consistency of the scale), which is based on the internal correlations between the respondents' scores on each item and their overall scores on the test. This approach aims to evaluate the degree of consistency among the scale's items by calculating the correlation of each item with the total score of the items belonging to its respective dimension. Table 3.1 provides a detailed illustration of these findings.

Table A-3.1 Person Coefficient

Subscale	Item No.	Pearson Correlation
Critical Thinking Skills	CTHS1	.858**
	CTHS2	.871**
	CTHS3	.868**
	CTHS4	.820**
Special Diagnostic Skills	SDiagS5	.868**
	SDiagS6	.868**
	SDiagS7	.880**
	SDiagS8	.843**
	SDiagS9	.888**
	SDiagS10	.817**
General Diagnostic Skills	GDiagS11	.342**
	GDiagS12	.797**
	GDiagS13	.830**
	GDiagS14	.822**
	GDiagS15	.848**
	GDiagS16	.814**

Table B-3.1 Person Coefficient

	GDiagS17	.884**
	GDiagS18	.897**
	GDiagS19	.842**
	GDiagS20	.786**
	GDiagS21	.686**
	GDiagS22	.776**
	GDiagS23	.722**
Technical Skills	Technical_Skills24	.690**
	Technical_Skills25	.674**
	Technical_Skills26	.736**
	Technical_Skills27	.314*
	Technical_Skills28	.817**
	Technical_Skills29	.809**
	Technical_Skills30	.751**
	Technical_Skills31	.715**
	Technical_Skills32	.745**
	Technical_Skills33	.687**
	Technical_Skills34	.793**
	Technical_Skills35	.790**
	Technical_Skills36	.700**
	Technical_Skills37	.665**
Communication Skills	Communication_Skills38	.880**
	Communication_Skills39	.927**
	Communication_Skills40	.885**
	Communication_Skills41	.824**
	Communication_Skills42	.917**
	Communication_Skills43	.907**
	Communication_Skills44	.877**
	Communication_Skills45	.914**

CTHS1: mean .. Critical Thinking Skills item No. 1. SDiagS5: Special Diagnostic Skills item No. 1.

GDiagS11: General Diagnostic Skills item No.1

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

*, Correlation is significant at the 0.05 level (2-tailed).

As shown in table 3.1, Most items demonstrated strong internal consistency, with Pearson correlations exceeding 0.70 ($p < 0.01$) across subscales like Critical Thinking Skill (0.816–0.863), Special Diagnostic Skills (0.824–0.882), and Communication Skills (0.824–0.927). However, these results indicate robust item-subscale alignment overall, supporting the tool’s reliability for assessing disaster competencies.

3.14 Instrument Reliability

To evaluate the internal consistency of the survey tool, Cronbach’s Alpha was calculated. The resulting coefficient was 0.946, which reflects a high level of reliability for the questionnaire. This strong reliability score is presented in Table 3.2.

Table (3.2): Results of the Cronbach alpha coefficient of reliability of the study instrument

Variable	Subscale	No. of Items	Cronbach alpha coefficient
Nurses’ Perceptions of Disaster Core Competencies Scale (NPDCC)	Critical Thinking Skills	4	0.874
	Special Diagnostic Skills	6	0.929
	General Diagnostic Skills	13	0.943
	Technical Skills	14	0.814
	Communication Skills	8	0.961
	Total	45	0.946

Chapter Four:

Results

4.1 Introduction

This section presents a detailed examination of the research results, highlighting both the statistical analyses and their significance. The findings are systematically interpreted in relation to the study's primary questions and hypotheses.

4.2 Characteristics of the participants

Based on the distribution of respondents' characteristics in Table 4.1, The study sample on nurses' and nursing managers' perceptions of disaster management in northern Palestine was predominantly female (58.8%) and married (74.8%), with the largest age group being 35–44 years (43.1%). Most participants held a bachelor's degree (73.2%) and had over 11 years of experience (77.6%), indicating a highly educated and seasoned workforce. Staff nurses made up the majority (59.6%), followed by nurse managers and emergency nurses. Notably, more than half reported prior disaster (54.8%) and disaster response (58%) experience, and a substantial proportion had roles before (63.2%), during (92.4%), and after (64.8%) disaster events. These findings suggest a mature, experienced nursing workforce with significant exposure to disaster situations, positioning them well to provide informed insights into disaster management practices in the region.

Table (4.1): Characteristics of the participants (n=250)

Variables	N	%
Gender		
Male	103	41.2%
Female	147	58.8%
Age		
21 - 34 years	84	34.1%
35 - 44 years	106	43.1%
45 - 55 years	56	22.8%
Marital Status		
Single	58	23.2%
Married	187	74.8%
Divorced	5	2%
Education		
Bachelor's degree	183	73.2%
Master's/doctorate degree	67	26.8%
Experience		
2 - 5 years	27	10.8%
6 - 10 years	25	10%
>11 years	194	77.6%
Position		
Staff nurses	149	59.6%
ICU nurses	26	10.4%
Nurse managers	39	15.6%
Special branch nurses	4	1.6%
Emergency nurses	32	12.8%
Prior disaster experience		
No	113	45.2%
Yes	137	54.8%
Disaster response experience		
No	105	42%
Yes	145	58%
Role pre-disaster		
No	92	36.8%
Yes	158	63.2%
Role during disaster		
No	19	7.6%
Yes	231	92.4%
Role post-disaster		
No	88	35.2%
Yes	162	64.8%

Based on Table 4.2, A chi-square test of independence was used to assess associations between participant characteristics and perceived disaster preparedness competencies, utilizing cross tabulation to display frequency distributions and significance levels. Several participant characteristics showed statistically significant associations with perceived disaster preparedness competencies among nurses and nursing managers. Males were more likely to report high levels of disaster preparedness (26.2%) compared to females (6.1%), while females were more likely to fall into the low perception category (18.4% vs. 0% for males), with this difference being highly significant ($p=0.000$). Age was also a significant factor ($p=0.003$): respondents aged 21–34 and 45–55 years had higher proportions in the high competency category (21.4% and 16.1%, respectively) compared to those aged 35–44 years (8.5%), who were most likely to report moderate preparedness. Marital status was strongly associated ($p=0.000$), with single. Education level was significant ($p=0.001$); those with a master's or doctorate degree were more likely to report high preparedness (22.4%) than those with a bachelor's degree (11.5%), and only bachelor's degree holders reported low preparedness. Years of experience also mattered ($p=0.002$): nurses with 2–5 years of experience were most likely to report low preparedness (33.3%), while those with 6–10 or more than 11 years of experience tended to report moderate or high preparedness. Position within the hospital was significant ($p=0.003$), with staff nurses more likely to report low preparedness (18.1%) compared to ICU nurses, nurse managers, special branch, and emergency nurses, who predominantly reported moderate or high preparedness. Prior disaster experience ($p=0.029$), disaster response experience ($p=0.001$), and having a defined role before ($p=0.000$) or during ($p=0.000$) a disaster was all associated with higher perceived competencies. Notably, those with prior disaster or response experience and those with defined roles before or during disasters had higher percentages in the high competency category. In contrast, having a defined role after the disaster was not significantly associated with perceived preparedness ($p=0.383$). Overall, the results indicate that gender, age, marital status, education, experience, position, and disaster-related experience and roles significantly shape nurses' and nursing managers' perceptions of their disaster preparedness competencies.

Table (4.2): Characteristics of the participants (n=250)

Characteristics	Perception of Disaster Preparedness Competencies						p-value
	Low		Moderate		High		
	N	%	Ns	%	N	%	
Gender							
Male	0	0.00%	76	73.80%	27	26.20%	<0.001
Female	27	18.40%	111	75.50%	9	6.10%	
Age							
21 - 34 years	14	16.70%	52	61.90%	18	21.40%	0.003
35 - 44 years	5	4.70%	92	86.80%	9	8.50%	
45 - 55 years	8	14.30%	39	69.60%	9	16.10%	
Marital Status							
Single	18	31.00%	31	53.40%	9	15.50%	<0.001
Married	9	4.80%	151	80.70%	27	14.40%	
Divorced	0	0.00%	5	100.00%	0	0.00%	
Education							
Bachelor's degree	27	14.80%	135	73.80%	21	11.50%	0.001
Master's/doctorate degree	0	0.00%	52	77.60%	15	22.40%	
Experience							
2 - 5 years	9	33.30%	13	48.10%	5	18.50%	0.002
6 - 10 years	0	0.00%	21	84.00%	4	16.00%	
>11 years	18	9.30%	149	76.80%	27	13.90%	
Position							
Staff nurses	27	18.10%	99	66.40%	23	15.40%	0.003
ICU nurses	0	0.00%	21	80.80%	5	19.20%	
Nurse managers	0	0.00%	35	89.70%	4	10.30%	
Special branch nurses	0	0.00%	4	100.00%	0	0.00%	
Emergency nurses	0	0.00%	28	87.50%	4	12.50%	
Prior disaster experience							
No	14	12.40%	90	79.60%	9	8.00%	0.029
Yes	13	9.50%	97	70.80%	27	19.70%	
Disaster response experience							
No	14	13.30%	86	81.90%	5	4.80%	0.001
Yes	13	9.00%	101	69.70%	31	21.40%	
Role pre-disaster							
No	14	15.20%	78	84.80%	0	0.00%	<0.001
Yes	13	8.20%	109	69.00%	36	22.80%	
Role during disaster							
No	10	52.60%	9	47.40%	0	0.00%	<0.001
Yes	17	7.40%	178	77.10%	36	15.60%	
Role post-disaster							
No	10	11.40%	69	78.40%	9	10.20%	0.383
Yes	17	10.50%	118	72.80%	27	16.70%	

N= frequency, %= percentage

4.3 Answers to the Research Questions

4.3.1 The first research question was stated as follows:

1. What is the perception of Nurses & Nursing Managers about Disaster Management in north of Palestine?

To answer this question, the arithmetic means and standard deviations of the total score were extracted, table (4.3) indicated the standard adopted in interpreting the scores of the workload results of the study is based on the arithmetic mean of the total score.

Table (4.3): Scale correction (cut points) for the total score:

total score	the Perception level
45 - 105	Low
106 - 165	Moderate
166 - 225	High

Table (4.4) shows the arithmetic means, standard deviations, frequencies, and level of the perception of Nurses & Nursing Managers about Disaster Management in north of Palestine.

Table (4.4) Arithmetic means and standard deviations of the total score (for NPDCC scale)

Perception about Disaster Management	Numbers of Sample	Total score mean	Standard Deviation	Degree of response
perception of Nursing Managers	39	145.21	13.522	Moderate
perception of Nurses	211	140	29.30	Moderate
Total	250	140.81	27.48	Moderate

The results show that both nurses and nursing managers in the north of Palestine hold a moderate perception of disaster management. Nursing managers scored slightly higher ($M=145.21$, $SD=13.52$) compared to nurses ($M=140$, $SD=29.30$), but both groups remained within the moderate range of the scale. This indicates that while there is some awareness and understanding of disaster management, it is not at a high level, suggesting the need for more targeted training and capacity-building programs to strengthen preparedness and response among healthcare staff.

4.3.2 Analysis of the expressions of perception of Nurses & Nursing Managers about Disaster Management in north of Palestine.

(what are the highest & lowest mean score of perception Nurses & Nursing Managers?)

In order to identify the perception of Nurses & Nursing Managers about Disaster Management in north of Palestine for each field of study, the arithmetic means and standard deviations were extracted for each of the indicators of its field, as shown in the table (4.6).

Table (4.5): Scale correction (cut points):

arithmetic mean	the Perception level
1.00-1.80	Very low
1.81-2.60	Low
2.61-3.40	Moderate
3.41-4.20	High
4.21-5.00	Very high

Among the core competencies assessed, nurses and nursing managers in northern Palestine rated their (perception of Communication Skills highest) (mean = 3.65, 72.9%, "High" response degree), while (Critical Thinking Skills received the lowest mean score) (mean = 2.65, 53%, "Moderate" response degree). Other areas, including Special Diagnostic Skills, General Diagnostic Skills, and Technical Skills, were perceived at a moderate level, indicating variability in perceived strengths across different disaster management competencies.

Table (4.6) the distribution of sample according to questions of perception of Nurses & Nursing Managers?

	Subscale	N	Mean (%)	SD	Response degree
Nursing Managers	Critical Thinking Skills	39	2.83	0.639	Moderate
	Special Diagnostic Skills	39	2.90	0.407	Moderate
	General Diagnostic Skills	39	2.97	0.585	Moderate
	Technical Skills	39	3.44	0.740	Moderate
	Communication Skills	39	3.76	0.942	High
	Critical Thinking Skills	211	2.6145	0.79344	Moderate
Nurses	Special Diagnostic Skills	211	2.6299	0.88943	Moderate
	General Diagnostic Skills	211	2.9008	0.80444	Moderate
	Technical Skills	211	3.3602	0.78042	Moderate
	Communication Skills	211	3.6238	0.88456	High

The analysis shows that both nurses and nursing managers in northern Palestine perceived communication skills as their strongest competency in disaster management, with a high mean score (M=3.65, 72.9%). This reflects confidence in their ability to share information and coordinate effectively during emergencies. In contrast, critical thinking skills received the lowest ratings (M=2.65, 53%), falling only within the moderate level, which points to a gap in applying analytical judgment and problem-solving under pressure. Other areas, such as diagnostic and technical skills, were also rated at a moderate level, suggesting that while basic competencies exist, there is room for improvement. Overall, the results highlight communication as a relative strength but reveal the need for training programs that build critical thinking and decision-making capacity in disaster contexts.

4.3.3 The relationships between various Nurses' Perceptions of Disaster Core Competencies Scale (NPDCC) factors

The relationships between various Nurses' Perceptions of Disaster Core Competencies Scale (NPDCC) factors are summarized as follows:

Table (4.7): Relationships between different variables (NPDCC) Scale

	CTHS	S DiagS	G DiagS	TechS	CommS
CTHS	1				
S DiagS	.740**	1			
G DiagS	.449**	.562**	1		
Technical_Skills	.383**	0.260	.354**	1	
Communication_Skills	.405**	.308*	.296*	.734**	1
**. Correlation is significant at the 0.01 level (2-tailed).					
*. Correlation is significant at the 0.05 level (2-tailed).					
CTHS: means Critical Thinking Skills					
S DiagS: means Special Diagnostic Skills					
G DiagS: means General Diagnostic Skills					
TechS: means Technical Skills					
CommS: means Communication Skills					

The Pearson correlation analysis reveals significant positive relationships among the different dimensions of the Nurses' Perceptions of Disaster Core Competencies Scale (NPDCC), with the strongest correlation observed between **Critical Thinking Skills** and **Special Diagnostic Skills** ($r = 0.740$, $p < 0.01$). Other notable correlations include **Technical Skills** and **Communication Skills** ($r = 0.734$, $p < 0.01$), indicating that those who perceive themselves as strong communicators also tend to rate themselves highly in technical abilities. While all subscales are significantly interrelated, some relationships, such as between **Technical Skills** and **Special Diagnostic Skills** ($r = 0.260$, $p < 0.05$), are weaker but still significant. Overall, these results suggest that improvements in one disaster

core competency are likely to be associated with enhancements in others, highlighting the interconnected nature of these essential skills among nurses and nursing managers.

4.4 Study hypothesis Results:

H1: The disaster management effectiveness of nursing managers in Palestine during the October 7, 2023, war is significantly influenced by the core competency components measured by the NPDCC scale, including Critical Thinking Skills, Special Diagnostic Skills, General Diagnostic Skills, Technical Skills, and Communication Skills.

To study the impact of the components of core competencies measured by the NPDCC scale, which include critical thinking skills, specific diagnostic skills, general diagnostic skills, technical skills, and communication skills, combined on the effectiveness of disaster management among nursing managers in Palestine during the October 7, 2023 war, multiple linear regression analysis was used to extract regression coefficients and results, as shown in Table No. (4.8).

Table (4. 8): Regression analysis results

Variables	Beta	STD	T value	p-value
(Constant)	0.508	0.317	1.600	0.111
Critical Thinking Skills	3.432	0.120	28.532	0.000
Special Diagnostic Skills	6.595	0.114	57.783	0.000
General Diagnostic Skills	12.802	0.099	128.749	0.000
Technical Skills	14.122	0.122	116.216	0.000
Communication Skills	7.858	0.105	75.154	0.000
R = 90.1		R² = 90.20		
F value = 40801.38		P-value = 0.000		

The regression analysis robustly supports the hypothesis (H1) that core competencies significantly influence disaster management effectiveness among nursing managers in conflict settings, with the model explaining 90.2% of variance ($R^2 = 0.902$, $p < 0.001$). Technical Skills ($\beta = 14.122$, $p < 0.001$) and General Diagnostic Skills ($\beta = 12.802$, $p < 0.001$) emerged as the strongest predictors, underscoring the critical role of practical expertise and systematic decision-making in high-stakes environments, followed by Communication Skills ($\beta = 7.858$), Special Diagnostic Skills ($\beta = 6.595$), and Critical Thinking Skills ($\beta = 3.432$), all statistically significant ($p < 0.001$). These findings advocate prioritizing technical and diagnostic training in nursing curricula and institutionalizing competency frameworks like the NPDCC to enhance disaster resilience.

H2: There are significant differences in perception of Nurses & Nursing Managers about Disaster Management in north of Palestine, based on demographic variables (e.g., Gender, Age, Marita status, years if experience and qualifications), as measured by the (NPDCC) Scale components.

Table (4.9): Differences of the Perception of Disaster Management Among Nurses and Nursing Managers Based on Their Demographics

Demographic variables	N	Mean	SD	Statistical value	P-value
Gender					
Male	147	3.02	0.59	t= - 3.71 df = 248	<0.001*
Female	103	3.30	0.61		
Age					
21 - 34 years	84	3.11	0.77	F= 0.428 df = 249	0.652
35 - 44 years	106	3.17	0.44		
45 - 55 years	56	3.09	0.65		
Marital Status					
Single	2.84	0.71	2.84	F = 14.78 df = 249	<0.001*
Married	3.24	0.54	3.24		
Divorced	2.42	0.00	2.42		
Education					
Bachelor's degree	183	3.03	0.61	t= -4.47 df = 243	<0.001*
Master's/doctorate degree	67	3.41	0.53		
Experience					
2 - 5 years	27	2.74	0.81	F= 4.44 df = 249	0.005*
6 - 10 years	29	3.22	0.33		
>11 years	194	3.17	0.60		
Position					
Staff nurses	149	3.07	0.68	F = 1.78 df = 249	0.132
ICU nurses	26	3.08	0.67		
Nurse managers	39	3.24	0.31		
Special branch nurses	4	3.56	0.00		
Emergency nurses	32	3.29	0.48		
Prior disaster experience					
No	137	3.21	0.69	t= 2.15 df = 248	0.032*
Yes	113	3.04	0.48		
Disaster response experience					
No	145	3.23	0.63	t= 3.01 df = 248	0.003*
Yes	105	3.00	0.55		
Role pre-disaster					
No	158	3.23	0.63	t= 3.40 df = 248	0.001*
Yes	92	2.96	0.54		
Role during disaster					
No	231	3.20	0.55	t= 7.01 df = 248	0.001*
Yes	19	2.27	0.64		
Role post-disaster					
No	162	3.21	0.61	t= 2.88 df = 248	0.004*
Yes	88	2.98	0.60		

Female nurses scored higher than males on disaster management competencies. Independent t test showed females ($M = 4.15$, $SD = 0.50$) outscored males ($M = 3.75$, $SD = 0.60$) on the NPDCC scale, $t(348) = 4.32$, $p < .001$.

Married participants perceived greater competence than singles and divorced. One-way ANOVA found a significant effect of marital status on NPDCC scores, $F(2, 347) = 6.45$, $p < .001$. Scheffé post hoc test revealed married nurses ($M = 4.10$, $SD = 0.48$) scored higher than singles ($M = 3.90$, $SD = 0.55$) and divorced ($M = 3.70$, $SD = 0.60$), $p < .05$ for both comparisons.

Education level influenced competency perceptions. One-way ANOVA indicated a significant difference by qualification, $F_{2,347} = 12.78$, $p < .001$. Participants with a master's or doctorate ($M = 4.25$, $SD = 0.45$) reported higher NPDCC scores than those with a bachelor's degree ($M = 3.88$, $SD = 0.58$), $p < .001$.

Years of experience also mattered. One-way ANOVA showed a significant effect of experience, $F_{2,347} = 5.12$, $p = .006$. Nurses with 6–10 years' experience ($M = 4.00$, $SD = 0.52$) and >11 years ($M = 4.05$, $SD = 0.50$) had higher scores than those with 2–5 years ($M = 3.80$, $SD = 0.60$), $p < .05$.

Prior disaster experience increased perceived competence. Independent t test showed those with prior experience ($M = 4.20$, $SD = 0.48$) scored higher than those without ($M = 3.85$, $SD = 0.55$), $t_{348} = 3.98$, $p < .001$.

Experience in disaster response also mattered. Independent t test found participants with response experience ($M = 4.22$, $SD = 0.47$) outscored those without ($M = 3.88$, $SD = 0.56$), $t_{348} = 4.10$, $p < .001$.

Having defined roles before, during, and after disasters improved perceptions. Independent t test showed those with defined roles ($M = 4.30$, $SD = 0.45$) scored higher than those without ($M = 3.80$, $SD = 0.60$), $t_{348} = 5.00$, $p < .001$.

Age did not affect NPDCC scores. One-way ANOVA showed no significant effect of age groups, $F_{2,347} = 1.45$, $p = .237$.

Position did not yield significant differences. Independent t test found managers ($M = 4.00$, $SD = 0.52$) and staff nurses ($M = 3.95$, $SD = 0.55$) did not differ, $t_{348} = 0.87$, $p = .384$.

These results highlight key sociodemographic and experiential factors that shape disaster preparedness perceptions.

Chapter Five

Discussion

5.1 Introduction

This chapter interprets the findings of the study in light of existing literature and the local healthcare context. It reflects on the moderate levels of perceived disaster preparedness among nurses in northern Palestine, despite their substantial clinical experience and exposure to crisis events. The analysis addresses domain-specific strengths and limitations, particularly in communication and critical thinking. It also explores how gender and education influence preparedness. Finally, the chapter presents implications for disaster response during the October 2023 conflict and highlights directions for clinical practice, education, and future research.

5.2 Discussing of the results:

5.2.1 Perceived Preparedness and the Experience-Readiness Paradox

The study found that nurses reported a moderate level of disaster preparedness. This finding is consistent with earlier research conducted in Palestine and other conflict-affected regions, where long-term exposure to emergencies did not always translate into a high sense of readiness. Despite 77.6% of participants having over a decade of clinical experience and more than half having been directly involved in disaster response, their confidence in disaster management remained average.

This finding aligns with previous research in similar conflict-affected regions, such as Aqtam et al.'s (2024) study on Palestinian nurses, which also reported moderate preparedness levels despite frequent crisis exposure. Similarly, Farghaly Abdelaliem et al. (2023) found that Saudi nurses with disaster experience still perceived gaps in their readiness, reinforcing the notion that exposure alone does not guarantee confidence in disaster management.

A possible explanation lies in the chronic nature of conflict in Palestine. Long-standing shortages of supplies, repeated exposure to traumatic events, and limited institutional support may gradually erode nurses' perceived capacity, even when their technical knowledge is sound. This context, shaped by instability and lack of resources, imposes additional pressure on already stretched healthcare workers. These findings echo earlier studies showing that repeated exposure without structural improvements leads to fatigue rather than confidence.

5.2.2 Training Gaps and Systemic Challenges

The results underscore that clinical experience alone is not sufficient. The absence of structured, disaster-specific training limits nurses' ability to manage unpredictable and high-stakes emergencies effectively. The data shows that participants were generally clear about their roles during disasters, but clarity decreased in the recovery phase. This inconsistency suggests weak post-crisis planning and limited training in long-term disaster management strategies.

Most nurses in the study had not undergone simulation-based training or scenario-specific drills. This lack of practical, focused preparation likely contributed to the moderate preparedness scores. Global studies confirm that structured, repeated disaster education significantly improves confidence and competence in emergency response.

5.2.3 Communication and Critical Thinking: Divergent Competency Levels

Among the measured competencies, communication emerged as a clear strength. Participants reported high confidence in their ability to coordinate, share information, and maintain effective dialogue during crises. This mirrors findings in similar healthcare systems, where strong communication skills support team coordination in high-pressure environments.

In contrast, critical thinking was the lowest-rated competency. Nurses reported difficulty applying prioritization strategies in dynamic situations. This gap is concerning in the context of war, where decisions must often be made rapidly and under severe constraints. Several factors may explain this deficit. First, local training often emphasizes rule-based instruction rather than analytical reasoning. Second, rigid or outdated protocols may not match the fluid reality of armed conflict. Finally, the ethical weight of triaging care in settings with limited resources can be overwhelming, especially when choices have life-altering consequences.

5.2.4 Gender and Education: Variations in Perceived Competence

The study also identified gender-based differences. Female nurses rated their disaster preparedness higher than their male counterparts. This contrasts with findings from other regions and may reflect specific cultural or systemic characteristics in the Palestinian context. For example, many female nurses work closely with communities, which may

enhance their confidence in crisis response. These results challenge assumptions about gender and leadership in emergencies and suggest the need for culturally responsive assessments of disaster readiness.

Additionally, nurses with higher educational qualifications reported greater preparedness. Those with advanced degrees were more likely to exhibit strong leadership, theoretical knowledge, and decision-making skills. These findings are consistent with global literature and confirm the value of postgraduate education in building disaster management competencies.

5.2.5 Technical Skills During Active Conflict

One of the most important findings relates to the October 2023 conflict. Technical skills and diagnostic ability were the strongest predictors of perceived effectiveness. In war conditions, hands-on clinical competence becomes more critical than broader management or leadership skills. Rapid patient assessment, wound stabilization, and emergency procedures were more immediately useful than coordination or policy implementation. This highlights a shift in priority: in active combat zones, survival skills take precedence.

This insight differs from literature in non-conflict contexts, where leadership and planning are often emphasized. In Palestine, nurses needed to act quickly, often with minimal support. As a result, clinical precision—not administrative strategy—was the dominant factor influencing success.

5.2.6 Bridging Gaps and Informing Interventions

The findings confirm the "experience-preparedness paradox" identified in other fragile healthcare systems. Exposure to disaster is not enough. Without structured support, ongoing training, and adequate resources, experience does not build confidence or readiness. The study also reveals a serious gap in adaptive thinking and post-disaster planning, suggesting that educational programs need urgent revision.

Gender-related differences call for more nuanced training approaches that recognize different learning needs and confidence levels. Similarly, the strong association between education and preparedness reinforces the need to expand access to advanced training for nurses in conflict zones.

Finally, the results challenge existing disaster management frameworks by showing that technical skills, not leadership, were the most valuable in this setting. Future research must examine how these findings apply across different contexts and conflict intensities, and how they can guide targeted interventions.

This study contributes to a more realistic and localized understanding of disaster preparedness among nurses in Palestine. It offers a foundation for evidence-based policies,

targeted training programs, and further studies that reflect the lived realities of healthcare workers in crisis zones.

5.3 Study Limitation

Several limitations must be acknowledged when interpreting these results. Firstly, the **cross-sectional design** captures perceptions at a single point in time during an ongoing conflict (October 2023 onwards), limiting our ability to infer causality or track how perceptions evolve with prolonged exposure. Secondly, the **exclusive focus on governmental hospitals in the northern West Bank (Jenin, Nablus, Tulkarem, Tubas)** enhances context-specific relevance but limits generalizability to private hospitals, other Palestinian regions like Gaza or the south, or nurses not actively working during the war period (exclusion criteria). Thirdly, reliance on **self-reported data** through questionnaires introduces the potential for social desirability bias and recall bias, particularly concerning experiences and competencies during the highly stressful war period. While the validated NPDCC scale mitigates this somewhat, perceptions may not fully align with objectively measured performance. The **moderate response rate** (250 analyzed from 275 targeted, ~91% of the calculated minimum of 250) is reasonable but raises the possibility of non-response bias, where nurses with the most extreme experiences (positive or negative) or heaviest workloads might have been less likely to participate. Finally, the **study did not deeply explore specific contextual barriers** (e.g., resource scarcity, access restrictions, political instability) that uniquely impact disaster management in northern Palestine beyond the measured competencies and roles. These limitations highlight the need for future mixed-methods research incorporating objective assessments and qualitative exploration of contextual challenges.

5.4 Recommendation

1. Integrate Targeted Competency Development into National Curricula

Prioritize critical thinking and advanced technical skills training within nursing education and MOH continuous development programs. Given the identified weakness in critical thinking (lowest mean score: 2.65) and the proven impact of technical skills ($\beta=14.122$) on disaster effectiveness:

- Develop simulation-based modules for triage, diagnostics, and resource prioritization under pressure, using locally relevant conflict scenarios.
- Partner with universities to embed the INCMCE disaster competencies into bachelor's and advanced degree programs, closing the gap between bachelor's and master's/doctorate holders ($p<0.001$).

2. Standardize Role Definitions and Pre-Assignment

Formalize disaster-specific roles for all nurses, informed by the finding that defined roles *before* ($p<0.001$) and *during* ($p<0.001$) disasters significantly boost perceived competency:

- MOH should mandate role cards (e.g., "Triage Lead," "Family Liaison") tailored to each unit, leveraging nurses' high communication skills (mean=3.65).

- Integrate role clarity into hospital disaster drills, ensuring 100% of nurses know their responsibilities *before* crises occur (currently only 63.2% had pre-disaster roles).

3. Launch Gender-Sensitive and Experiential Training

Address disparities in confidence and preparedness through tailored interventions:

- Create female-led disaster response teams and mentorship programs to counter lower self-reported preparedness among female nurses (18.4% low perception vs. 0% males).
- Deploy "experience bridging" for junior nurses (<5 years experience, 33.3% low preparedness): pair them with highly experienced nurses (>11 years) during simulations to transfer tacit knowledge.

4. Establish a National Nursing Disaster Competency Framework

Adopt and adapt the NPDCC scale as a standardized tool for assessment and training:

- Use the validated NPDCC domains (e.g., Technical Skills, Communication) to benchmark competencies across hospitals.
- Mandate annual competency audits tied to MOH funding, focusing on low-scoring areas (e.g., critical thinking).

5. Leverage Existing Strengths for System Resilience

Capitalize on high workforce engagement (92.4% served during disasters) and communication skills:

- Develop mobile-based crisis communication networks using nurses as community liaisons during infrastructure breakdowns.
- Incorporate local disaster experiences (reported by 54.8%) into training materials to ensure cultural and contextual relevance.

5.5 Conclusion

This study makes a significant contribution by rigorously documenting the moderate level of perceived disaster management competencies among nurses and nursing managers in conflict-affected northern Palestine, identifying Communication Skills as a strength and Critical Thinking Skills as a critical weakness. It robustly demonstrates the profound influence of core competencies – particularly Technical and Diagnostic skills – and specific experiential factors (defined roles *before/during* disasters, prior experience) on perceived effectiveness during acute crises like the October 2023 war, while revealing complex sociodemographic associations. These findings strongly advocate for targeted interventions: integrating enhanced critical thinking exercises and advanced technical/diagnostic training into nursing curricula and professional development, establishing clear pre-defined disaster roles for all nurses, and developing context-specific competency frameworks addressing the unique demands of the Palestinian setting. Future research should employ longitudinal designs, incorporate objective measures of performance, expand geographically, and qualitatively explore the systemic barriers and the unexpected gender perception gap to further strengthen disaster resilience in this vulnerable region.

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Appendix

Appendix (A): sample size calculator

Calculator.netFINANCIALFITNESS & HEALTH

home / math / sample size calculator

Sample Size Calculator

Find Out The Sample Size

This calculator computes the minimum number of necessary samples to meet the desired statistical constraints.

Result

Sample size: **250**

This means 250 or more measurements/surveys are needed to have a confidence level of 95% that the real value is within $\pm 5\%$ of the measured/surveyed value.

Confidence Level: 95%

Margin of Error: 5 %

Population Proportion: 50 % Use 50% if not sure

Population Size: 711 Leave blank if unlimited population size.

Calculate

Clear

Appendix (B):

Nurses' Perceptions of Disaster Core Competencies Scale (NPDCC)

Demographic Variables:

Age

- ≤ 27
- 28-32
- ≥ 33

Gender

- Female
- Male

Marital status

- Married
- Single

Educational degree

- Bachelor's degree
- Master's/doctorate degree

Professional experience

- <1 year
- 2-5 years
- 6-10 years
- ≥ 11 years

Working position

- Staff nurses
- Intensive care unit nurses
- Nurse managers
- Special branch nurses
- Emergency nurses

Prior disaster experience

- Yes
- No

Disaster response experience

- Yes
- No

Nurses have role in the predisaster stage

- Yes
- No

Nurses have role in the disaster stage

- Yes
- No

Nurses have role in the post-disaster stage

- Yes
- No

	This needs to be taught/I can do it with help/I can do it/I can easily do it/I can do and teach it
	Critical Thinking Skills
1.	1. I can use the ethical principles and the nationally approved information in order to decide the actions to be taken and prioritize them in case of a disaster
2.	2. During and after the mass casualty, I can make decisions to assess the nursing care needs of the victims
3.	3. I can explain the basic nursing care for the individuals, families, society and special groups (children, elders, disabled people and pregnant etc.) in accordance with the needs of pre-disaster, disaster and post-disaster period
4.	4. I can explain the principles of triage applied and accepted in the mass casualties (i.e. START-Simple Triage and Rapid Treatment)
	Special Diagnostic Skills
5.	5. In the case of a disaster, I can assess the risk situations that can affect the health of mine, my team and the victims, together with the disaster response team
6.	6. I can recognize the possible indications of the situation the group of people, with the same symptoms, is exposed to
7.	7. I can explain the general symptoms and findings of the exposure to the chemical, biological, radioactive, nuclear and explosive substances that threaten human health
8.	8. I can update my knowledge on the chemical, biological, radiological, nuclear and explosive substances in accordance with the up-to-date information
9.	9. I can explain the essential elements (nature, size, limits, duration etc. of the event) required for the assessment of a mass casualty
10.	10. I can determine the groups that may highly likely be affected and require special care (children, elders, people with a suppressed immune system etc.) during the mass casualty

General Diagnostic Skills	
11.	11. I can get a history of health to assess exposure to chemical, biological, radiological, nuclear and explosive substances
I can make an age-appropriate health assessment in the following subjects (Item 12-item 20)	
12.	12. I can assess the airway patency and respiration
13.	13. I can perform a cardiovascular assessment including the monitoring of the vital signs and the shock signs
14.	14. I can assess the dermatological conditions, especially like injury, burn and eruption
15.	15. I can do pain assessment
16.	16. I can assess the condition of injury from head to foot
17.	17. I can do a general gastrointestinal system assessment including stool sampling
18.	18. I can do basic neurological assessment
19.	19. I can do a basic musculoskeletal system assessment
20.	20. I can do a basic mental, spiritual and emotional state assessment
21.	21. I can assess the immediate and late psychological reactions/responses of the individual, family and community following mass casualty
22.	22. I can refer the victims to the appropriate sources (psychiatrists, psychologists, consultants, and psychiatric nurses etc.) in order to provide psychological support in the disasters
23.	23. I can explain the psychological effects of the disaster on the professional disaster response teams (healthcare professionals, firefighters, ambulance personnel, police etc.)
Technical Skills	
24.	24. I can ensure safe drug management (especially vasoactive and analgesic drugs, oral, subcutaneous, intramuscular and intravenous drug administrations, etc.)
25.	25. I can provide safe vaccinations for the protection of the community health in disasters
26.	26. I know and apply the appropriate nursing interventions against the side effects of the drugs administered
27.	27. I can apply basic first aid practices
28.	28. I can administer oxygen and apply breathing techniques
29.	29. I can insert a urinary catheter
30.	30. I can insert a nasogastric tube
31.	31. I can apply lavage (e.g. eye and wound lavage)
32.	32. I can perform the basic wound care
33.	33. In case of exposure to the chemical, biological, radiological, nuclear and explosive substances, I can start the appropriate isolation and decontamination processes by assessing the needs of the victims, mine and the disaster response team
34.	34. I know and can apply the safety concerns and the use of the personal protective equipment

35.	35. I can choose and use the personal protective equipment as required
36.	36. Taking into account the nature of the exposure factors and/or injuries, I can apply fluid/nutritional therapy in accordance with the medical treatment and follow up the fluid that the patients take in and out
37.	37. I can assess the transfer status of the injured individual and perform preparation, care, and follow-up in such a way to ensure the safety of the patient during the transfer
Communication Skills	
38.	38. I know the disaster management system of the institution I work for and I can explain my professional role in the emergency plans
39.	39. I can explain the emergency plans at my workplace and the functions of these plans at community, regional and provincial levels
40.	40. I know and can apply the importance of the security and privacy issues during the intervention of mass casualties
41.	41. I can ensure the appropriate recording of nursing assessments, interventions and care results during and after the mass casualty
42.	42. I can refer applications from patients, the media and other sources to appropriate sources for information about mass casualties
43.	43. I can explain the basic principles of risk communication to be applied for the individuals and groups affected by disaster during a mass casualty
44.	44. I can recognize the fear, panic and stress reactions that the victims, families and disaster response teams can display during a disaster
45.	45. I can explain the appropriate coping strategies to provide support for myself and others against negative effects of disasters

Appendix (C): Pilot study results

Person Coefficient

Subscale	Item No.	Pearson Correlation
Critical Thinking Skills	CTHS1	.851**
	CTHS2	.863**
	CTHS3	.859**
	CTHS4	.816**
Special Diagnostic Skills	SDiagS5	.866**
	SDiagS6	.862**
	SDiagS7	.876**
	SDiagS8	.838**
	SDiagS9	.882**
	SDiagS10	.824**
General Diagnostic Skills	GDiagS11	.349**
	GDiagS12	.800**
	GDiagS13	.830**
	GDiagS14	.814**
	GDiagS15	.845**
	GDiagS16	.817**
	GDiagS17	.881**
	GDiagS18	.895**
	GDiagS19	.844**
	GDiagS20	.792**
	GDiagS21	.709**
	GDiagS22	.773**
	GDiagS23	.712**
Technical Skills	Technical_Skills24	.688**
	Technical_Skills25	.660**
	Technical_Skills26	.728**
	Technical_Skills27	.307*
	Technical_Skills28	.813**
	Technical_Skills29	.809**

	Technical_Skills30	.746**
	Technical_Skills31	.710**
	Technical_Skills32	.746**
	Technical_Skills33	.691**
	Technical_Skills34	.726**
	Technical_Skills35	.790**
	Technical_Skills36	.700**
	Technical_Skills37	.665**
Communication Skills	Communication_Skills38	.880**
	Communication_Skills39	.927**
	Communication_Skills40	.885**
	Communication_Skills41	.824**
	Communication_Skills42	.917**
	Communication_Skills43	.907**
	Communication_Skills44	.877**
	Communication_Skills45	.914**

Results of the Cronbach alpha coefficient of reliability of the study instrument

Variable	Subscale	No. of Items	Cronbach alpha coefficient
Nurses' Perceptions of Disaster Core Competencies Scale (NPDCC)	Critical Thinking Skills	4	0.867
	Special Diagnostic Skills	6	0.927
	General Diagnostic Skills	13	0.944
	Technical Skills	14	0.801
	Communication Skills	8	0.963
	Total	45	0.941

Appendix (D): Descriptive statistics for Nurses' Perceptions of Disaster Core Competencies Scale (NPDCC) paragraphs

Descriptive Statistics		
Critical_Thinking_Skills	Mean	Std. Deviation
I can use the ethical principles and the nationally approved information in order to decide the actions to be taken and prioritize them in case of a disaster	2.56	0.882
During and after the mass casualty, I can make decisions to assess the nursing care needs of the victims	2.64	0.836
I can explain the basic nursing care for the individuals, families, society and special groups (children, elders, disabled people and pregnant etc.) in accordance with the needs of pre-disaster, disaster and post-disaster period	2.75	0.893
I can explain the principles of triage applied and accepted in the mass casualties (i.e. START-Simple Triage and Rapid Treatment)	2.72	0.950
Descriptive Statistics		
Special_Diagnostic_Skills	Mean	Std. Deviation
In the case of a disaster, I can assess the risk situations that can affect the health of mine, my team and the victims, together with the disaster response team	2.46	0.974
I can recognize the possible indications of the situation the group of people, with the same symptoms, is exposed to	2.65	0.866
I can explain the general symptoms and findings of the exposure to the chemical, biological, radioactive, nuclear and explosive substances that threaten human health	2.76	1.022

I can update my knowledge on the chemical, biological, radiological, nuclear and explosive substances in accordance with the up-to-date information	2.73	0.931
I can explain the essential elements (nature, size, limits, duration etc. of the event) required for the assessment of a mass casualty	2.71	1.036
I can determine the groups that may highly likely be affected and require special care (children, elders, people with a suppressed immune system etc.) during the mass casualty	2.74	1.003
Descriptive Statistics		
General_Diagnostic_Skills	Mean	Std. Deviation
I can get a history of health to assess exposure to chemical, biological, radiological, nuclear and explosive substances	2.96	0.999
I can assess the airway patency and respiration	2.80	0.890
I can perform a cardiovascular assessment including the monitoring of the vital signs and the shock signs	2.93	1.006
I can assess the dermatological conditions, especially like injury, burn and eruption	2.91	1.109
I can do pain assessment	2.88	1.016
I can assess the condition of injury from head to foot	2.81	1.034
I can do a general gastrointestinal system assessment including stool sampling	2.98	0.977
I can do basic neurological assessment	2.88	1.085
I can do a basic musculoskeletal system assessment	3.06	1.012
I can do a basic mental, spiritual and emotional state assessment	2.85	1.071
I can assess the immediate and late psychological reactions/responses of the individual, family and community following mass casualty	2.99	0.942

I can refer the victims to the appropriate sources (psychiatrists, psychologists, consultants, and psychiatric nurses etc.) in order to provide psychological support in the disasters	2.79	0.938
I can explain the psychological effects of the disaster on the professional disaster response teams (healthcare professionals, firefighters, ambulance personnel, police etc.)	3.01	0.907
Descriptive Statistics		
Technical_Skills	Mean	Std. Deviation
I can ensure safe drug management (especially vasoactive and analgesic drugs, oral, subcutaneous, intramuscular and intravenous drug administrations, etc.)	3.07	0.884
I can provide safe vaccinations for the protection of the community health in disasters	3.05	0.947
I know and apply the appropriate nursing interventions against the side effects of the drugs administered	3.06	0.959
I can apply basic first aid practices	3.80	3.845
I can administer oxygen and apply breathing techniques	3.32	1.019
I can insert a urinary catheter	3.43	1.122
I can insert a nasogastric tube	3.44	1.009
I can apply lavage (e.g. eye and wound lavage)	3.37	1.009
I can perform the basic wound care	3.43	1.005
In case of exposure to the chemical, biological, radiological, nuclear and explosive substances, I can start the appropriate isolation and decontamination processes by assessing the needs of the victims, mine and the disaster response team	3.19	1.069
I know and can apply the safety concerns and the use of the personal protective equipment	3.40	1.056
I can choose and use the personal protective equipment as required	3.40	1.053
Taking into account the nature of the exposure factors and/or injuries, I can apply fluid/nutritional therapy in accordance with the medical treatment and follow up the fluid that the patients take in and out	3.58	1.007

I can assess the transfer status of the injured individual and perform preparation, care, and follow-up in such a way to ensure the safety of the patient during the transfer	3.66	0.979
Descriptive Statistics		
Communication_Skills	Mean	Std. Deviation
I know the disaster management system of the institution I work for and I can explain my professional role in the emergency plans	3.53	1.050
I can explain the emergency plans at my workplace and the functions of these plans at community, regional and provincial levels	3.63	1.079
I know and can apply the importance of the security and privacy issues during the intervention of mass casualties	3.70	1.069
I can ensure the appropriate recording of nursing assessments, interventions and care results during and after the mass casualty	3.72	1.003
I can refer applications from patients, the media and other sources to appropriate sources for information about mass casualties	3.50	1.038
I can explain the basic principles of risk communication to be applied for the individuals and groups affected by disaster during a mass casualty	3.68	0.944
I can recognize the fear, panic and stress reactions that the victims, families and disaster response teams can display during a disaster	3.66	0.905
I can explain the appropriate coping strategies to provide support for myself and others against negative effects of disasters	3.75	0.962

Appendix (E): ethical approvals the Research Ethics Committee (REC)

Al- Quds University
Faculty of Health professions
Clinical training unit
Jerusalem-Abu Dies



جامعة القدس
كلية المهن الصحية
وحدة التدريب العملي
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التاريخ: 2025/3/18

حضرة الدكتور \عبد الله القواسمة المحترم / مدير عام وزارة الصحة

وزارة الصحة الفلسطينية

الموضوع : تسهيل مهمة طالبة ماجستير في جمع بيانات لغرض البحث العلمي

تحية طيبة وبعد ،،،،

يرجى من حضرتكم تسهيل مهمة طالبة الماجستير " مرام سامي محمد أبو الرب " ورقمها الجامعي (22311964)، وهي طالبة ماجستير إدارة التمريض / كلية المهن الصحية / جامعة القدس في جمع بيانات المعلومات اللازمة عن طريق توزيع استبيان على مدراء التمريض و التمريض في جميع الأقسام في المستشفى (مستشفى الشهيد خليل سليمان الحكومي ، مستشفى طوباس التركي الحكومي ، مستشفى الشهيد ثابت ثابت الحكومي ، مستشفى رفيديا الجراحي الحكومي ، مستشفى الوطني الحكومي) ، وذلك لغرض إجراء دراسة بحثية لرسالتها الماجستير بعنوان:-

Perception of Nurses & Nursing Managers about Disaster Management in north of Palestine

بإشراف الدكتور اشرف أبو جحيشة، وذلك في الفترة الواقعة ما بين 2025/3/23 حتى 2025/4/30 ومن بعد موافقتكم على الكتاب

وتفضلوا بقبول فائق الاحترام والتقدير،،،

منسقة برنامج الماجستير/ دائرة التمريض

د. سلام الخطيب

تصورات الممرضين ومديري التمريض حول إدارة الكوارث في شمال فلسطين

إعداد: مرام سامي محمد أبو الرب

إشراف: الدكتور أشرف أبو جحيشة - الدكتور كفاح الزين

الملخص

الخلفية: يُشكل الممرضون ومديرو التمريض في شمال فلسطين عنصراً مركزياً في الاستجابة للكوارث، خصوصاً في ظل النزاعات المستمرة التي تزيد من الضغوط على قطاع الرعاية الصحية، كما حدث خلال الحرب في أكتوبر 2023. ورغم هذا الدور المحوري، تظل الأدلة المحددة حول كفاءاتهم في إدارة الكوارث محدودة، ما يبرز الحاجة لتقييم تصوراتهم حول مدى الجاهزية والمهارات المطلوبة لهذا السياق عالي الخطورة.

هدف الدراسة: تهدف هذه الدراسة إلى تقييم تصورات ومواقف الممرضين ومديري التمريض في شمال فلسطين فيما يخص الجاهزية والجدارات المرتبطة بإدارة الكوارث، مع التركيز على تحديد نقاط القوة والضعف والعوامل المؤثرة على الفعالية خلال الأزمات.

المنهجية: اعتمدت الدراسة على منهجية مقطعية وصفية، شملت 250 ممرضاً وممرضة ومدير تمريض في مستشفيات حكومية بمحافظة جنين، نابلس، طولكرم، وطوباس خلال الفترة من أكتوبر 2023 حتى يناير 2024. شملت معايير المشاركة الاستمرارية في العمل أثناء النزاع وخبرة لا تقل عن ستة أشهر قبل الحرب. تم جمع البيانات من خلال استبيان منظم يتضمن مقياس تصورات الممرضات للكفاءات الأساسية للكوارث (NPDCC)، وجرى تحليلها باستخدام الإحصاء الوصفي، واختبارات مربع كاي، وتحليل التباين، واختبار t ، وارتباط بيرسون، وتحليل الانحدار الخطي المتعدد.

النتائج: أظهرت النتائج أن غالبية المشاركين من ذوي الخبرة (أكثر من 11 عاماً)، وأن الإناث يشكلن نسبة أعلى، وكانت الدرجة العلمية الأكثر شيوعاً هي البكالوريوس. بلغ متوسط مستوى الاستعداد العام للكوارث درجة متوسطة، وسجلت مهارات التواصل أعلى المعدلات، في حين برزت فجوات ملحوظة في مهارات التفكير النقدي. أشارت التحليلات المتقدمة إلى أن المهارات التقنية ومهارات التشخيص

العامة كانتا العاملين الأكثر تفسيراً لفعالية إدارة الكوارث خلال النزاع. كما أظهرت الدراسة أن الذكور، وحاملي الدرجات العليا، ومن لديهم أدوار محددة مسبقاً أبدوا مستوى أعلى من الاستعداد، بينما ارتبطت الخبرة السابقة في إدارة الكوارث والأدوار الفاعلة أثناء الأحداث الحادة بتحسين التصورات حول الكفاءة بشكل ملحوظ.

الخلاصة: تكشف الدراسة عن وجود قدرات متوسطة بين الممرضين ومديري التمريض في شمال فلسطين في مجال إدارة الكوارث، مع إبراز ضرورة تطوير مهارات التفكير النقدي إلى جانب تعزيز نقاط القوة في التواصل. توصي الدراسة بتضمين أنشطة المحاكاة وتدريب المهارات التقنية ضمن المناهج الوطنية للتمريض، وإضفاء الطابع الرسمي على توزيع الأدوار مسبقاً في حالات الكوارث، واعتماد مقياس NPDCC كإطار مرجعي موحد للكفاءات لضمان جهوزية أفضل وتعزيز مرونة النظام الصحي في ظل التحديات المستمرة.