

# Measuring the Readiness of Primary Care Nurses to Provide Emergency Health Care in Primary Health Centers at Al-Qaseem, KSA

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## Abstract

**Background:** Primary health care is based on reasonable, rational scientific theory and technology, and the Ministry of Health (MOH) in KSA provides primary, secondary, and tertiary health services. The definition of a medical emergency is a serious, unanticipated, and frequently dangerous situation requiring immediate action. HCPs must be actively involved and prepared to address any health hazards. However, there is a deficit in HCP education and training at all levels.

**Aim:** This study aimed to measure the preparedness of primary care nurses to deliver emergency medical care in primary health clinics in Al-Qaseem, Saudi Arabia. **Research method:** a cross sectional study, which was conducted at Qassim city primary healthcare centres in Saudi Arabia.

**Results:** This study found that male primary care nurses in emergency departments had a bachelor's degree and worked in the procedures or dressing rooms of the primary care center. There may be areas for improvement in nursing functions and the nursing environment.

**Recommendation for Future Research:** Future research should conduct similar studies in other regions or countries, include a larger sample size, use a mixed-methods approach, investigate the impact of additional variables, explore interventions to enhance readiness, use objective measures, and evaluate the impact of increased readiness on patient outcomes and healthcare delivery.

**Keywords:** Readiness of Primary Care, Nurses, Emergency Health Care, Primary Health Centers, Al-Qaseem, KSA.

## 1. INTRODUCTION

The World Health Organization (WHO) defines primary health care (PHC) as fundamental healthcare that is based on reasonable, rational scientific theory and technology that is widely available to everyone in the community (Alsaad et al., 2017).

The Ministry of Health (MOH) in KSA provides primary, secondary, and tertiary health services. primary health care centers offer primary care services such as promotion, prevention, curative (including emergency services), and rehabilitative services. They only refer patients who need secondary and tertiary care to public hospitals (Asmri et al., 2020).

The definition of a medical emergency is a serious, unanticipated, and frequently dangerous situation requiring immediate action. It is widely acknowledged that the objective of an efficient emergency medical system (EMS) is to deliver

universal emergency care to those in need with rapid assessment, timely provision of appropriate interventions, and rapid transportation to the closest suitable medical institution by the best means possible to enhance survival, control morbidity, and prevent mortality (World Health Organization, 2019).

Any management plan must include health care providers (HCPs), such as nurses and doctors, who must be actively involved and prepared to address any health hazards. Health care providers are the first line of defense in an emergency, and their mission is to provide care of an acceptable standard while attempting to save as many lives as they can (Flaubert et al., 2021).

They must collaborate with those in charge of emergency planning and response, as well as with lawmakers and policymakers. However, information from recent attacks revealed that

there is a deficit in HCP education and training at all levels, at both the individual and system level (Al Harthi et al., 2020).

Up to our knowledge no studies were conducted in Saudi Arabia in aim to assessing primary care nurses' preparedness to deliver emergency medical care in primary health clinics. So, this study aimed to measure the preparedness of primary care nurses to deliver emergency medical care in primary health clinics Al-Qaseem, Saudi Arabia.

### **Problem Statement**

Evidence indicated wide gaps in nurses' knowledge of the dimensions of professional competence in emergency preparedness, in addition to the possibility of reporting emergencies, which leads to the impact on human life after the occurrence of a disaster (McNeill et al., 2020).

In terms of disaster response, emergency nurses are on the front lines. According to research, there are low to moderate levels of disaster preparedness, and it is suggested that education is an effective means of increasing preparedness (Amberson et al., 2020).

According to the studies and articles reviewed, we noticed that there is a need for nurses to be prepared for emergency and disaster preparedness. We noticed that no studies have been published in the Kingdom of Saudi Arabia with the aim of assessing the readiness of primary care nurses to provide emergency medical care in primary health clinics.

### **Background of study**

Medical emergencies are dangerous, unexpected cases that require immediate action. The goal of an effective medical system is to provide emergency care to those in need through rapid evaluation, in addition to providing appropriate interventions. Emergency services need good planning and support at all national levels, regional and community (Alsaad et al., 2017). As the increasing global frequency of disasters necessitates preparedness for disaster response in order to mitigate the negative effects (Labrague et al., 2018).

According to one of the studies conducted on preparedness in emergencies, where the results of the study concluded that nurses are not sufficiently prepared with regard to the areas of nursing competencies in disaster situations, as

the study recommended providing good educational packages regarding nursing in disaster situations, in addition to providing training guides, and support for attending disaster trainings, as it is essential to enhance disaster preparedness as well as retain skills for nurses in all sectors (Songwathana & Timalisina, 2021).

According to one of the studies conducted regarding nurses' emergency preparedness, where the results of the study concluded that there is a significant weakness with regard to the efficiency of nurses in emergency preparedness, as the study showed that there are positive results between the possibility of personal preparedness and the efficiency of emergency preparedness, as the results of the study reached Nurses in the United States lack sufficient competence with regard to emergency preparedness, as the study recommended the need to improve nurses' education (McNeill et al., 2020).

According to the studies that were conducted with regard to disaster preparedness by nurses, where the study provided evidence that could be used by outreach nurses in addition to nursing officials with regard to preparing nurses for disaster response (Labrague et al., 2018).

### **Purpose of Study**

This study aimed to measure the preparedness of primary care nurses to deliver emergency medical care in primary health centers in Al-Qaseem, Saudi Arabia.

To determine the socio demographic characteristics that notably associated with the preparedness of primary care nurses to deliver emergency medical care in primary health centers in Al-Qaseem, Saudi Arabia.

### **PICO/PICOT Statement**

- What is the preparedness of primary care nurses to deliver emergency medical care in primary health clinics in Saudi Arabia?
- What is the socio demographic characteristics that notably associated with the preparedness of primary care nurses to deliver emergency medical care in primary health centers in Al-Qaseem, Saudi Arabia?

### **Definition or Concepts of Terms**

- **Readiness among Nurses:** The plan includes management by health care providers such as nurses, who must

participate in activities and be prepared to face health risks (Flaubert et al., 2021).

### Significance to Nursing

Nurses are on the front lines in emergencies and disasters, as it is important for them to be fully prepared to prepare for disasters and emergencies, so it is important to improve the skills and knowledge of nurses in order to raise the efficiency of emergency preparedness.

### Summary

In this chapter, the study gap was clarified and an overview of the study was given regarding the preparedness of nurses in preparing for emergencies. In the next chapter, reference will be made to previous studies related to preparedness and preparation for emergencies and disasters by nurses.

## 2. LITERATURE REVIEW

### Introduction

In this part, reference will be made to represent previous studies related to the readiness of nurses to provide care in emergency cases and disaster situations.

### Conceptual Model, Theory, or Framework

Globally, disasters are increasing, as hospitals must be prepared in terms of responding well to disasters, as disaster-related risk management is an effective program that saves people's lives and reduces damage to hospital property, and leads to ensuring the continuity of hospital service. Figure 1 illustrates the conceptual framework for the Hospital Disaster Risk Management Evaluation Model (Abbasabadi Arab et al., 2019).

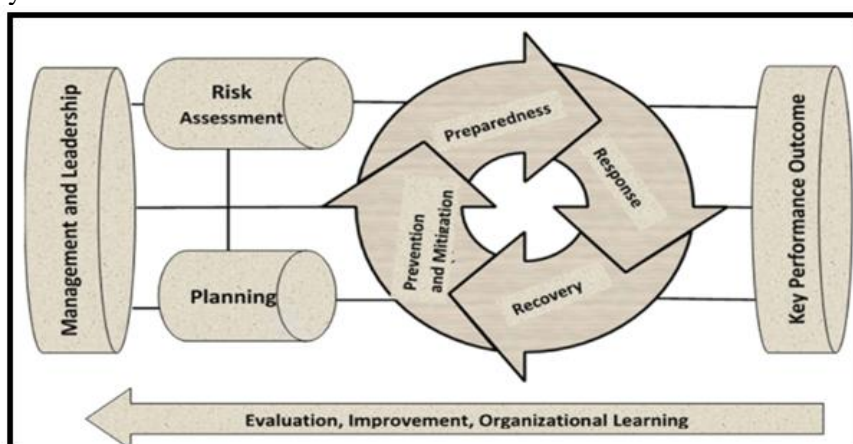


Figure 1. Conceptual framework for the Hospital Disaster Risk Management Evaluation Model.

### Evaluation of Evidence

A cross-sectional study conducted in Indonesia on the preparedness of nurses in disaster situations, where the results of the study indicated that there is a moderate level of preparedness for disasters, as there was a positive correlation with regard to the experience of disasters, training or education with disaster preparedness, and the results of the study also concluded that there was no correlation with regard to disaster preparedness with nursing experience, as the study concluded that it is possible to use the results in order to develop educational programs aimed at improving disaster preparedness among nurses in Indonesia (Rizqillah & Suna, 2018).

According to one of the studies that was conducted, where the results of the study concluded that nurses have to face many challenges in all stages related to disaster

management, as the study concluded that the obstacles included, disaster nursing, insufficiency with regard to the level of preparedness, poor formal education, in addition to lack of The research, issues related to ethics and law, in addition to issues related to the role of nurses in disasters, as the study concluded the need for researchers and stakeholders to make efforts to address issues and improve nursing in disasters (Al Harthi et al., 2020).

According to one of the studies conducted on nurses' readiness and understanding of the roles of dealing with disasters, where the results of the study concluded that there is a decrease in the readiness of nurses and their understanding of the roles of dealing with disasters in Indonesia, as the ability to prepare in addition to response, recovery and assessment of disasters needs to be improved by During continuing education, the study concluded that great efforts are required because of potential disasters (Martono et al., 2019).

According to one of the studies conducted in the Kingdom of Saudi Arabia, where the study aimed to assess the readiness of emergency nurses in disaster situations, where the results of the study concluded that the nurses reported good knowledge regarding emergency management, where according to the results of the study, weaknesses related to dimensions were detected. The competent process in emergency management and the difficulties related to the evaluation of special efforts, as there is a significant correlation between rehabilitation and the dimensions of preparedness related to emergencies, and the difficulties related to the evaluation of special efforts, as the results of the study indicated that there is a need to enhance practical contribution, in addition to strengthening theoretical knowledge (Sultan et al., 2020).

A study conducted in Saudi Arabia on nursing preparedness for disaster preparedness, where the results of the study concluded that the level of knowledge among nurses is satisfactory with regard to disaster preparedness, in addition to that participation, readiness and commitment with regard to disaster preparedness prevail at a neutral level, as the results of the study concluded that there is a need. It is urgent with regard to the hospital administration in order to arrange awareness programs and disaster preparedness for nurses, in order for them to have qualifications in terms of overcoming the risks associated with events (Baker et al., 2019).

### **Summary**

The second chapter dealt with previous studies and literature related to the readiness of nurses to provide care in emergency cases and disaster situations. In the third chapter, the method of conducting the study and the administration used for the study will be discussed in detail.

## **3. METHODOLOGY**

### **Introduction**

This chapter discusses the study design, data gathering procedure, and sample selection including inclusion and exclusion criteria, study instrument and statistical treatment of data.

### **Identification of design**

The study used cross sectional study design was conducted at Primary Health Care Centers at AL-Qaseem, KSA. Cross sectional study has the advantage of enabling researchers to compare a wide range of factors.

### **Target group or aggregate**

Random sampling technique was used, where nurses was selected in health centers, Al-Qaseem, Kingdom of Saudi Arabia who have experience of more than one year in health centers and who wish to participate in the study, and nurses who do not wish to participate in the study and those who have experience less than year. The number of primary health care nurses in Al-Qaseem is 600 nurses, according to Open Epi Program the sample size was 237 at confidence level 95%.

### **Inclusion Criteria:**

- Nurses who are working in the primary health care centers at Al-Qaseem.
- Nurses who have experience of more than one year in health centers.
- Those who have a desire to participate in the study voluntarily.

### **Exclusion Criteria**

- Nurses who are not working the primary health care centers at Al-Qaseem.
- Those who are not willing to participate.

### **Setting**

The study was conducted at the primary health care centers at Al-Qaseem.

### **Plan and implementation process**

Random Probability sampling technique was used to choose the appropriate sample of nurses. Nurses was selected according to inclusion and exclusion criteria. After obtaining the approvals from the study participants, the questionnaire will be distributing to the participants in order to fill it out, as it was distributing on paper as it took about four months to collect data and then data was collected and analysed.

### **Study Instrument**

A questionnaire regarding Preparedness primary health care centers to deal with emergency cases will be used, and it was distributed. The questionnaire consists of demographic characteristics such as age, gender, years of experience, in addition to the second part, as it includes a checklist related to monitoring in order to assess the availability and adequacy of human and non-human resources (manpower, infrastructure). With regard to emergencies, equipment, medicines, and supporting facilities, interviews will also be held with nurses from

emergency rooms in the centers from which samples will be taken (Alsaad et al., 2019).

**Data Analysis**

The data was analyzed through the statistical analysis software, version No. 21, where descriptive analyzes will be performed such as (frequency, and percentage), and t-test analyzes will be conducted in order to assess readiness by nurses in emergencies and disasters, in addition to that correlation analysis was used in order to determine demographic characteristics that affect readiness by nurses in emergency situations in health centers health care .The P-value less than 0.05 was considered statistically significant.

**Ethical Consideration**

The study was explained to the participants, and it was stressed that the information is

confidential and that participation in the study is voluntary.

**Summary**

In the third chapter, the method of conducting the study, the tool used in the study, in addition to the study criteria and data extraction, data management, plan and implementation process, and everything related to the method, were discussed, and this was summarized in detail, as this explains everything that has been done.

**4. PROJECT OUTCOMES**

**Introduction**

The fourth chapter would include a description of the results of the study and answering the study questions. The results would be presented in tables and comments on the results.

**5. RESULTS**

**Table1. Socio Demographic Characteristics**

	N	%
Age		
20-29	70	29.5
30-40	131	55.3
More than 40	36	15.2
Gender		
Male	128	54.0
Female	109	46.0
Total	237	100.0
Material Status		
Single	103	43.5
Married	119	50.2
Widow	11	4.6
Divorced	4	1.7
Qualification		
Diploma	70	29.5
Bachelor	131	55.3
Master	33	13.9
PHD	3	1.3
Experience		
1-2	67	28.3
3-4	125	52.7
Equal 5 or more than 5	45	19.0
Working Position		
Nurse	83	35.0
Staff Nurse	114	48.1
Other	40	16.9
Working department in the primary health care center		
Vaccine	62	26.2
Procedures Room or Dressing Rooms	114	48.1
Vital Signs and Triage	27	11.4
Observation and Treatment Room	34	14.3
Previous working experience in emergency department		
Yes	145	61.2
No	92	38.8

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Any special courses, workshops or training activity on emergency management		
Yes	118	49.8
No	119	50.2
Total	<b>237</b>	<b>100.0</b>

Table1. Shows the Sociodemographic characteristics, there were (237) participants participated in our study, Regarding to the Age, most of our participants from the age (30-40 years) (55.3%). Moreover, most of our participants were male (54.0%). According to the material status, there were (43.5 %, 50.2%, 4.6%, 1.7%) single, married, widow and divorced respectively. Regarding to the qualification, most of them were bachelor (55.3%) and had (3-4) years (52.7%). There

were (35.0%, 48.1%, 16.9%) nurse , staff nurse and others respectively. Moreover, according to the work department in the primary health care center were (26.2%) in vaccine unit, (48.1%) in procedures room or dressing rooms, (11.4%) in vital signs and triage and (14.3%) in observation and treatment room. There were (61.2) had previously working experience in emergency department and (49.8%) had special courses, workshops or training activity on emergency management.

**Table2.** One-Sample Statistics for Nursing functions related issues and nursing environment related issues

Domains	N	Mean	Std. Deviation	Std. Error Mean	
Nursing functions related issues	237	6.01	2.972	0.193	
Nursing environment related issues	237	4.14	2.903	0.189	
One-Sample Test					
	t	df	P-value	Mean Difference	95% Confidence Interval of the Difference
					Lower
Nursing functions related issues	31.128	236	0.000	6.008	5.63
Nursing environment related issues	21.972	236	0.000	4.143	3.77

Table 2, shows the one-Sample Statistics for nursing functions related issues and nursing environment related issues, the mean for nursing functions related issues (6.01) and the mean for nursing environment related issues (4.14). There

was a significant statistical relationship for nursing functions related issues, nursing environment related issues at P-value = 0.000, P-value=0.00 respectively.

**Table3.** Independent Sample Statistics for Nursing functions related issues and Nursing environment related issues according to Gender

Nursing functions related issues	Male	128	6.35	2.838	0.251
	Female	109	5.61	3.085	0.296
Nursing environment related issues	Male	128	4.35	2.847	0.252
	Female	109	3.90	2.963	0.284
		F		P-value	t
Nursing functions related issues	Equal variances assumed		1.941	0.165	1.938
	Equal variances not assumed				1.925
Nursing environment related issues	Equal variances assumed		0.826	0.364	1.197
	Equal variances not assumed				1.193

Table 3, shows the independent sample statistics for nursing functions related issues and nursing environment related issues according to gender, There was no significant statistical relationship

between nursing functions related issues , nursing environment related issues with gender at P-value = 00.165, 0.364 respectively.

**Table4.** Correlations between Nursing Functions Related Issues and Nursing Environment Related Issues

Nursing functions related issues		Nursing environment related issues	
Nursing functions related issues	Pearson Correlation	1	0.717**
	P-value		0.000
	N	237	237
Nursing environment related issues	Pearson Correlation	.717**	1
	P-value	0.000	
	N	237	237

Table 4 shows that, there was a significant correlation statistical relationship between nursing functions related issues and nursing environment related issues at P-value = 0.000.

**Table5.** Correlations between Readiness of Primary Care Nurses assessment and Socio demographic characteristics

		Readiness	Age	Gender	Material Status	Qualification	Experience
Readiness of primary care nurses assessment	Pearson Correlation	1	-.026	-0.110	-0.203**	-0.062	0.087
	P-value		0.691	0.091	<b>0.002</b>	0.345	0.182
	N	237	237	237	237	237	237

Table 5 shows that, there was a significant correlation statistical relationship between readiness of primary care nurses assessment and material status , P-value=0.002).

The independent sample statistics showed that there was no significant statistical relationship between nursing functions related issues, nursing environment related issues, and gender. This finding suggests that gender does not play a significant role in shaping nurses' perceptions of nursing functions and environment-related issues. Moreover, the study revealed a significant correlation between the readiness of primary care nurses and their material status. This finding implies that nurses' material status may impact their readiness to perform their nursing functions adequately.

## 6. DISCUSSION

### Introduction

The results of our study regarding the preparedness of primary care nurses to deliver emergency medical care in primary health centers in Al-Qaseem, Saudi Arabia reached the following results:

### Discussion

In terms of sociodemographic characteristics, most of the participants were male and in the age group of 30-40 years. Furthermore, most of the participants were married and held a bachelor's degree with 3-4 years of experience. The study also revealed that many of the nurses worked in the procedures room or dressing rooms, had prior experience working in the emergency department, and had special courses, workshops, or training on emergency management.

The one-sample statistics showed that the mean score for nursing functions related issues was higher than the mean score for nursing environment related issues, indicating that the participants perceived nursing functions to be more significant than the environment. Additionally, there was a significant statistical relationship between nursing functions related issues and nursing environment related issues, suggesting that the participants' perceptions of nursing functions and environment are interrelated.

In consistent to these finding, few studies were found such as a study by Bagnasco et al. found that a positive work environment was associated with better job satisfaction and quality of care among nurses (Bagnasco et al., 2019). In addition to another study conducted by Li et al. found that nurses who reported higher levels of job satisfaction were more likely to provide high-quality patient care (Li et al., 2020) and a study by Wong et al. found that nurses who had positive attitudes towards their work environment were more likely to report job satisfaction and provide quality care (Wong et al., 2013). And few studies were found inconstant to our results such as a study by Aiken et al. which found that nurses who reported higher levels of burnout were more likely to provide lower quality patient care (Aiken et al., 2014), in addition to a study by Blegen et al. found that work environment factors, such as staffing levels and resource availability, were not significantly associated with quality of care provided by nurses (Blegen et al., 2013). And a study by Poghosyan et al.

found that job satisfaction among nurses was not significantly associated with patient safety outcomes (Poghosyan et al., 2014).

Overall, this study provides valuable insights into the perceptions of primary care nurses regarding nursing functions and environment-related issues. However, it is important to note that the study's sample size was limited, which may limit the generalizability of the results. Future studies with larger sample sizes may provide a more comprehensive understanding of the topic. Additionally, qualitative studies could be conducted to gain a deeper understanding of primary care nurses' perceptions of nursing functions and environment-related issues.

### **Strengths and Limitations of the Study**

#### **Strengths**

- The study provides insight into the nursing functions related issues and nursing environment related issues in primary care centers in Saudi Arabia.
- A significant number of participants were included in the study, providing a representative sample.
- The use of statistical analysis allowed for the identification of significant relationships between variables.
- The study provides useful information for nursing managers and policymakers to address the issues identified.

#### **Limitations**

- The study was conducted in a specific region of Saudi Arabia, and the results may not be generalizable to other regions or countries.
- The study relied on self-reported data, which may be subject to biases and inaccuracies.
- The study did not investigate the impact of cultural factors on nursing functions related issues and nursing environment related issues.
- The study did not investigate the impact of the COVID-19 pandemic on nursing functions related issues and nursing environment related issues, which may have had a significant impact on the results.

### **7. CONCLUSION**

In conclusion, this study provided important information about the sociodemographic

characteristics and work-related factors of primary care nurses in emergency departments. The majority of participants were male, had a bachelor's degree, and worked in the procedures or dressing rooms of the primary care center. Additionally, a significant correlation was found between nursing functions related issues, nursing environment related issues, and the readiness of primary care nurses assessment. However, no significant relationship was found between these factors and gender. These findings suggest that there may be areas for improvement in nursing functions and the nursing environment, which could positively impact the readiness of primary care nurses in emergency departments. Further research is needed to explore these relationships and identify specific areas for improvement in nursing practice.

### **8. IMPLICATIONS FOR NURSING**

Nurses, particularly those working in primary healthcare centers, should be aware of the importance of nursing functions and the nursing environment in providing effective and high-quality care. This study highlights the need for nurses to be equipped with knowledge and skills related to nursing functions and the nursing environment in order to provide optimal care.

Additionally, this study suggests that nurses should be trained and educated to provide appropriate care in emergency situations. The findings of this study indicate that having previous experience in emergency departments and attending special courses, workshops, or training activities related to emergency management can enhance the readiness of primary care nurses to provide effective care in emergency situations.

The study also suggests that nurses should be aware of the potential impact of sociodemographic characteristics, such as material status, on their readiness to provide care. Nurses should be prepared to provide care that is sensitive to the needs and circumstances of patients with different material statuses.

In conclusion, this study highlights the importance of nursing functions and the nursing environment in providing effective care, particularly in emergency situations. Nurses should be equipped with the necessary knowledge and skills, and be aware of the potential impact of sociodemographic characteristics on their readiness to provide care.



### Recommendations for Further Future

Based on the results and limitations of this study, the following recommendations for future research can be made:

- Conduct similar studies in other regions or countries to determine if the findings are consistent with the results of this study.
- Include a larger sample size to increase the statistical power of the study.
- Use a mixed-methods approach to gain a more comprehensive understanding of the factors that affect primary care nurses' readiness to manage emergencies.
- Investigate the impact of additional variables such as years of experience, level of education, and training on primary care nurses' readiness to manage emergencies.
- Explore interventions to enhance primary care nurses' readiness to manage emergencies, such as additional training and education programs.
- Use objective measures, such as simulated scenarios, to evaluate the readiness of primary care nurses to manage emergencies, rather than self-reported measures.
- Finally, evaluate the impact of increased readiness of primary care nurses on patient outcomes and healthcare delivery in emergency situations.

By addressing these recommendations, future research can improve our understanding of primary care nurses' readiness to manage emergencies and help develop effective interventions to enhance their performance in these critical situations.

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