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Attitudes of Doctors and Nurses towards Patient Safety within Emergency Departments in Governmental and Private Hospitals in Northern West Bank – Palestine

By

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This thesis was submitted in partial fulfillment of the requirements for the Master's degree in Quality Management in Health Institutions

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Thesis Approval

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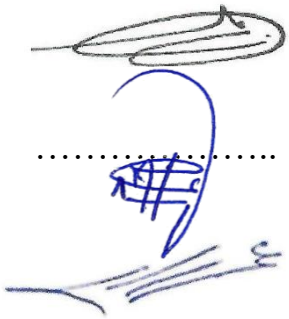
1. Dr. Yousef Mimi: Supervisor	
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Declaration

I, the undersigned, declare that I submitted the thesis entitled:

Attitudes of Doctors and Nurses towards Patient Safety within Emergency Departments in Governmental and Private Hospitals in Northern West Bank – Palestine

I declare that the work provided in this thesis, unless otherwise referenced, is the researcher's own work and has not been submitted elsewhere for any other degree or qualification.

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Dedication

I extend my profound gratitude to Dr. Yousef Mimi for his exceptional guidance and invaluable feedback throughout the course of my thesis. His expert advice played a pivotal role in shaping my research and bringing it to completion.

I also wish to express my appreciation to the esteemed professors, doctors, and committee members who actively participated in my research. Their insightful contributions and constructive feedback have significantly enriched the quality of my work.

I would like to acknowledge all individuals who have directly or indirectly contributed to the development of this thesis. Their dedicated support, encouragement, and assistance have been invaluable, and I sincerely appreciate their contributions. I want to convey my enduring friendship, appreciation, and respect to each of them.

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Abstract

Introduction: Several initiatives and organizations have established guidelines to give the patient safety a great priority in patient care, which became a mandatory requirement from each hospital in their accreditation process. Healthcare providers (HCPs) are also required to achieve a satisfactory level of safety attitudes towards patients, with several factors that were found to impact such attitude levels, including sociodemographic and work-related factors.

Aim: The current study aimed to investigate the attitude levels among Palestinian doctors and nurses who work at the emergency departments (EDs) in Northern West Bank hospitals, as well as the most common factors related to safety attitude.

Methods: A self-administered, valid version of the Safety Attitude Questionnaire (SAQ) was used to assess patient safety attitudes among a convenience sample of emergency doctors and nurses in private and governmental hospitals in Northern West Bank – Palestine, which included 31 items that assess domains of teamwork climate, safety climate, job satisfaction, stress recognition, perception of management and working conditions. Data were analyzed using SPSS, and were collected with commitment to ethical considerations of anonymity and confidentiality.

Results: The sample included 45 nurses and 29 doctors with a mean age of 30.31 ± 5.74 years old, 71.6% are males and 56.8% working in the governmental sector. The mean experience level in EDs was 5.07 ± 4.73 years, and 54.1% of them stated reporting no events in the last 12 months. The overall SAQ score was 66.70 ± 11.10, indicating an average safety attitude level, which was higher in domains of job satisfaction (72.59 ± 17.95) and teamwork climate (70.27 ± 14.01), with stress recognition having the lowest attitude level (51.89 ± 17.96). Significantly better safety attitude was found among HCPs

working in non-governmental hospitals (70.14 ± 9.19 vs 64.09 ± 11.81, p-value = 0.019), who work less hours per week (p-value = 0.047) and who reported less events in the last 12 months (p-value = 0.045), with significant prediction by the mentioned factors using regression analysis. There was a significant correlation between all domains of safety attitude and the overall score of SAQ, except for stress recognition.

Conclusion: The study highlighted an average attitude level towards patient safety among emergency doctors and nurses working in Northern West Bank – Palestine, which was found to be better in the non-governmental settings, working less hours per week and less event reporting. The study findings were similar to previous studies, with the recommendation of conducting future studies with longitudinal design and covering broader settings in West Bank – Palestine.

Keywords: Attitude(s), patient safety, nurse(s), physician(s), emergency.

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List of Abbreviations

Abbreviation	Meaning
PSFHI	Patient Safety Friendly Hospital Initiative
AAUP	Arab American University of Palestine
AIDS	Acquired Immunodeficiency Syndrome
ANOVA	Analysis of Variance
APSQ-III	Attitude to Patient Safety Questionnaire (3rd version)
CI	Confidence Interval
CINAHL	Cumulative Index to Nursing and Allied Health Literature
CMAQ	Cockpit Management Attitudes Questionnaire
ED	Emergency Department
EHR	Electronic Health Records
HCPs	Healthcare Providers
HIS	Health Information System
HSPSC	Hospital Survey on Patient Safety Culture
ICU	Intensive Care Unit
IHR	International Health Regulation
IOM	Institute of Medicine
IPSG	International Patient Safety Goals
IRB	Institutional Review Board
JCIA	Joint Commission International Accreditation
LLI	Lucian Leape Institute
MoH	Ministry of Health

NICU	Neonatal Intensive Care Unit
NPSF	The National Patients Safety Foundation
Ob/Gyn	Obstetrics and Gynecology
PCBS	Palestinian Central Bureau of Statistics
PSE	Patient Safety Event
RN	Registered Nurses
SAQ	Safety Attitude Questionnaire
SAQ-SF	Safety Attitude Questionnaire – Short Form
SD	Standard Deviation
SPSS	Statistical Package for Social Sciences
US	The United States
WHO	World Health Organization

Chapter One

Introduction

1.1 Introduction

The term patient safety culture is considered an essential component of the organizational and institutional environment that aims to focus on patient safety values and beliefs inside the healthcare system, with several strategies and initiatives that have been started and implemented to improve it, including the Patient Safety Friendly Hospital Initiative (PSFHI) (Siddiqi et al., 2012), and recent years witnessed an advancement in this area in Palestine, as manifested by the seeking of acquiring of the Joint Commission International Accreditation (JCIA) that highly focuses on multiple criteria of patient safety among the staff, which includes that six strategic International Patient Safety Goals (IPSG), as well as the joining of the Palestinian Ministry of Health (MoH) and other hospitals in the initiative of World Health Organization (WHO) of patient safety friendly hospital (Zabin et al., 2022).

1.2 Key Components of Patient Safety Culture

The patient safety culture in the healthcare settings is mainly focused on the areas of communication between healthcare providers (HCPs), working conditions, teamwork climate, medical risk management strategies, and, for example, the highest percentage of events that are reported in healthcare settings are related to communication errors (Lawati et al., 2018). Focusing on medical errors appeared in the focus of research after the Institute of Medicine (IOM) published surprising results where medical errors in hospitals in the United States (US) were estimated to result in as many as 98,000 deaths each year as of 1999. This number surpasses fatalities due to common causes such as motor vehicle

accidents, breast cancer, or AIDS. It accounts for more deaths annually than medication errors and workplace accidents combined, which has set an alarm for the medical field to focus on it in the research activity in the future of the patient safety field (Kohn et al., 2000).

Improving patient safety culture among staff is also related to teamwork and communication training interventions, which may lead to improved patient outcomes, primarily the reduction in the incidence of medical errors and adverse events (Alsabri et al., 2022). The Lucian Leape Institute (LLI), created by the National Patient Safety Foundation (NPSF), aimed in 2007 to identify new approaches to improve patient safety and its culture, and based on the frequent related reports between 2010 and 2015, the transformation in patient safety culture involves a complex approach, including educational reforms, integrated care, workforce well-being, patient and family engagement, and transparency, which all aimed at creating a safer and more effective healthcare environment (Gandhi et al., 2018).

1.3 Educational and Technological Interventions for Patient Safety

Several areas are found to be linked to improvement in the patient safety culture among HCPs, including the combined effect of proper continuous education and the implementation of standardized handoff tools in the EDs, which were also found to increase patient safety positivity and satisfaction among the staff, with a strong recommendation for hospital administration to apply such areas in the staff development programs (Alimenti et al., 2019). Also, technological interventions, such as electronic medical records and computerized physician order entry systems, show successful error-proofing methods by reducing the likelihood of mistakes in prescriptions and laboratory

orders. Adopting these systems demonstrates a commitment to a safety-oriented culture within healthcare environments, where the focus shifts from blaming individuals to improving processes to enhance overall patient safety (Graban, 2018).

Areas of improving patient safety culture that focuses on incident reporting should focus on the barriers related to the prevalence of punitive culture and inadequate reporting systems, as concluded by a Palestinian study. When speaking about developing countries, as improvement interventions include enhancing reporting and feedback systems, simplifying the procedures, avoiding blame and punitive culture, and providing clear guidelines about reporting events in terms of who and what to report (Rashed & Hamdan, 2019). In contrast, the areas that need the most strengthening and empowering were non-punitive responses to error, staffing, and handoff and transitions (Reis et al., 2018), which supports the concept that patient health safety culture is unified across the globe.

1.6 Challenges and Solutions for Patient Safety in Emergency Departments

Focusing on EDs, solutions to improve patient safety include establishing patient reporting assistance, refining communication and medication management through continuous education, and implementing structured guidelines for task prioritization (Amaniyan et al., 2020). Addressing overcrowding with protocols, encouraging interprofessional collaboration, equipment checks, and utilizing assistant devices are also key (Bochatay et al., 2017; Swinton et al., 2018). Furthermore, encouraging teamwork, clear role description, accountability, adverse event registries, and learning from errors are essential, in addition to educating on organizational principles within emergency settings (Ali et al., 2017; Jepson et al., 2014).

Patient safety culture and its risks are higher in the EDs, as shown in several studies, including a qualitative Swedish study that included nurses and physicians. The study found that the key risks that face HCPs in the ED were categorized into 4 main areas: high workload, which included patient load and task prioritizing. Lack of control, including multitasking, inexperience, and interruption, while the third category was about communication failure, followed by the category of organization failures, such as unclear responsibilities, lack of beds, insufficient staff level, and flaws in the electronic health records (EHR), which all reflect the complex system of healthcare in the emergency setting (Källberg et al., 2017). Taking care of critically ill patients with patient safety in a high concern is the main role of EDs. Yet, the extended length of stay and overcrowding are considered the most widespread challenges due to increased demand and decreased healthcare staff capacity, such as staffing, all of which emphasize the need to focus on issues of patient safety and its culture among the healthcare team of EDs (Forero et al., 2011).

The current study aims to investigate the attitude towards patient safety culture among the physicians and nurses who are working in the EDs in Northern West Bank - Palestine, using a validated tool that focuses on several domains of patient safety, as well as determining the most common sociodemographic and professional factors associated with the attitude levels, focusing on the differences according to job title, presence of patient safety protocols and type of hospitals. The study also aims to provide targeted recommendations based on its findings that would help policymakers improve the level of attitude toward patient safety culture among physicians and nurses working in the Palestinian EDs.

1.7 Problem Statement

Over the last decade, many healthcare interferences have been announced to decrease medical errors and enhance patient safety. However, a significant obstacle has been the organizational culture of healthcare environments, especially in the field of safety attitudes among healthcare providers (Leape & Berwick, 2005). An essential factor of safety culture is related to how doctors and nurses perceive medical errors, take responsibility for them, and communicate about them (Aron & Headrick, 2002; Walton & Elliott, 2006). Poor communication has been identified as a significant risk factor for medical errors, especially during handoffs between EDs and other hospital units (Alimenti et al., 2019).

However, there is a gap in understanding the underlying mechanisms of the relationships between work environment, staff workload, and better patient safety, especially within the context of the hospital system (Liu et al., 2018), as there remains a lack of understanding of how such factors interact within the EDs. As EDs are characterized by high-pressure environments, overcrowding, and rapid decision-making, the attitudes of doctors and nurses to patient safety imply a significant causal factor to hospital safety climates and medical error rates (Alzahrani et al., 2019).

However, while there is a global emphasis on improving patient safety culture, there is limited literature on patient safety attitudes in Palestinian hospitals in the EDs despite several studies that were conducted in all hospital settings, without a target of comparing patient safety culture between them or between ED and other departments. Also, the geopolitical, economic, and resource constraints in the Palestinian healthcare system call for the need to understand how ED staff perceive and engage with patient safety initiatives in order to develop targeted interventions.

1.8 Significance of the Study

According to one of the philosophies of ethical principles and human rights – 'first, not harm' – patient and health care provider safety is of crucial attention when providing health services. It is of the foremost importance for the health system to guarantee patient safety and prevent malpractice while providing health services (Durgun & Kaya, 2018). The World Health Organization (WHO) in a conference by the European Commission, stated that around ten millions of people are injured or die worldwide yearly because of avoidable medication errors which reflects the reality of patient safety in need of developing (WHO, 2022), especially in the emergency departments which are the fastest-paced, most severe and most thorny unit in a hospital, the determination of emergency departments is to save lives, evaluate patients' need for crucial interventions, and to provide management and prevention. The uncontainable capacity, erratic and outsized numbers of patients, and engrossment of many caregivers from different disciplines are all risk factors in the emergency departments.

Emergency department patients are undiagnosed individuals from different age groups, and the nature of urgent care requires a multidisciplinary team and multifunctional process. These factors increase the risk of malpractice in the emergency departments, the related difficulties are severe problems, and the rate of preventability is significantly higher for the emergency departments than other departments (Cebeci, 2010; Robinson, 2002).

In the Palestinian context, our study is the first to investigate the attitude toward patient safety culture among the physicians and nurses working in the EDs in the Northern West Bank—Palestine.

Therefore, this study will be carried out to fill the knowledge gap and contribute to the existing literature by investigating the attitude toward patient safety culture among the physicians and nurses who are working in the EDs in Northern West Bank - Palestine, using a validated tool that focuses on several domains of patient safety, as well as determining the most common sociodemographic and professional factors associated with the attitude levels, focusing on the differences according to job title, presence of patient safety protocols and type of hospitals. .

The study also aims to provide targeted recommendations based on its findings that would help policymakers improve the level of attitude toward patient safety culture among physicians and nurses working in the Palestinian EDs.

1.9 Aim of the Study

The main aim of the current study is to evaluate and determine the most common factors associated with the level of attitude towards patient safety among nurses and doctors who are working in the EDs at the governmental and private hospitals of Northern West Bank – Palestine.

1.10 Objectives of the Study

1. Determine the level of attitude towards patient safety and its application among the doctors and nurses working in the EDs at the governmental and private hospitals of Northern West Bank, Palestine.
2. Investigate the most common demographic and professional factors associated with doctors' and nurses' attitudes towards patient safety.

3. Determine the correlation between domains of safety attitude, including teamwork climate, safety climate, job satisfaction, stress recognition, management perception, and working conditions, and the overall scores of SAQ.
4. Provide directed and targeted recommendations to policymakers and stakeholders involved in the quality of care about a set of proposed interventions to improve patient safety attitude levels among nurses and doctors working at the governmental and private hospitals in Northern West Bank – Palestine.

1.11 Questions of the Study

The current study will answer the following questions:

1. What is the level of attitude toward patient safety and its application among the doctors and nurses working in the EDs at the governmental and private hospitals of Northern West Bank, Palestine?
2. What are the most common demographic and professional factors associated with doctors' and nurses' attitudes toward patient safety?
3. How are domains of safety attitude, including teamwork climate, safety climate, job satisfaction, stress recognition, management perception, and working conditions, and the overall scores of SAQ correlated with each other?

1.12 Hypotheses of the Study

The study aims to test the following hypotheses:

H_0: There is no significant relationship between nurses and doctors' demographic and professional factors and their attitudes towards patient safety in the EDs at the governmental and private hospitals of Northern West Bank, Palestine at a significance levels of 0.05.

H_0: There are no significant inter-correlations between domains of safety attitude, including teamwork climate, safety climate, job satisfaction, stress recognition, management perception, and working conditions, and the overall scores of SAQ, at a significance level of 0.05.

1.13 Study Variables

Independent variables: The demographic factors of the physicians and nurses, including age, gender, type of hospital, accreditation of the hospital, educational level, job description, experience in profession and current department, number of hours worked per week and the number of reported events in the last 12 months.

Dependent variable: The safety attitude of nurses and doctors.

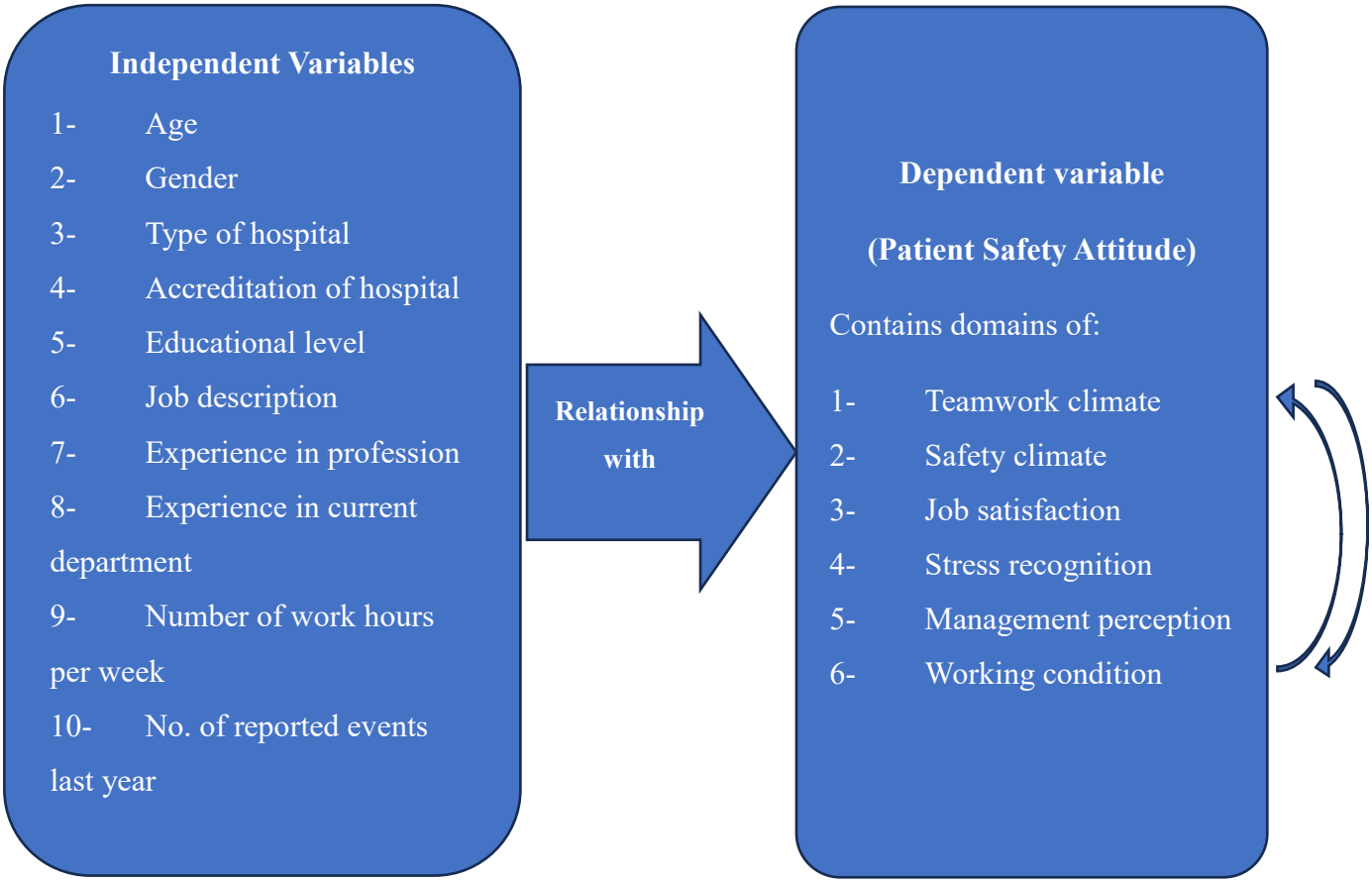


Figure 2.1: Conceptual framework of the current study, highlighting the relationship between nurses' and doctors' demographic factors and safety attitude, and the intercorrelation between domains of safety attitude questionnaire (SAQ).

1.14 Thesis Outline

This thesis contains the following chapters:

CHAPTER 1: INTRODUCTION:

This chapter introduces the thesis topics, background, problem statement, significance of the study, the purpose of the study, and the specific objectives.

CHAPTER 2: LITERATURE REVIEW:

This chapter includes a general introduction of the literature review approach, then a review of selected peer-reviewed articles that are specific in the field of safety attitude, focusing on their methodological approaches and main results of each article.

CHAPTER 3: METHODOLOGY

This chapter presents the research methodology. It states the study design, setting, population and sampling, eligibility criteria, data collection tool and process, review process, statistical analysis, and ethical considerations.

CHAPTER 4: RESULTS:

This chapter presents the study findings, and an illustration of the output mentioned there. It includes both descriptive and analytical results applied in accordance with data analysis plan and to achieve the study objectives.

CHAPTER 5: DISCUSSION & CONCLUSION:

This chapter presents the main study findings and their comparison with previous literature, the study's conclusion, recommendations, and future work.

Chapter Two

Literature Review

The following chapter is dedicated to reviewing the latest and most related studies about the attitudes of nurses and doctors toward patient safety culture and comparing them between different hospital departments, focusing on the emergency department (ED), as well as the most common sociodemographic and professional factors that affect the attitude levels. The search strategy for the studies that were included in the review was based on an extensive search in three medical and health sciences databases: PubMed, ScienceDirect, and CINAHL, using the following keywords: attitude(s), patient safety, nurse(s), doctor(s), physician(s), hospital, emergency department, emergency room. Studies that have been published in trusted journals within the last 5-7 years and are fully available in the English language were included in the review.

2.1 Attitudes Toward Patient Safety in Hospital Departments

Patient safety is crucial in all hospital departments; therefore, it is important to have an overview of the overall attitude levels among nurses and doctors in different hospital settings to compare them with EDs. In a systematic review of the patient safety culture in Arab countries, Elmontsri et al. (2017) stated that the culture of blame is the main issue that HCPs face and that the non-punitive response to errors is the critical area that needs to be improved. Also, they found that teamwork within units was better than teamwork across units, with the commonly lowest score in the domain of communication openness, highlighting it as the most important area of improvement, as well as finding that the mean scores of all domains of patient safety culture were found to be insignificantly different across the Arab countries that were reviewed, including Egypt,

Jordan, Lebanon, Palestine, Saudi Arabia, Oman, and Kuwait. In the Palestinian healthcare system context, the geopolitical barriers and ongoing conflict present significant challenges to health service delivery. The construction of the West Bank barrier has fragmented access to healthcare, with severe economic and social repercussions. The healthcare system, including various HCPs, lacks a unified approach, worsened by political instability and economic constraints, with several disparities in healthcare outcomes, like infants from the wealthiest West Bank families have a much higher survival rate compared to those in disadvantaged Gaza families. Efforts to improve healthcare infrastructure face economic limitations and require lifting restrictions on medical personnel and supplies (Mahmoud, 2013).

In Palestine, a cross-sectional study was also applied using a different tool to examine the patient safety attitude among a sample of 424 nurses and 150 doctors working in 4 major hospitals in the Gaza Strip, and aimed to identify the areas to be targeted for future improvement and training. The sample contained significantly older doctors (mean = 36.6 years) than nurses (mean = 33.1 years). At the same time, the percentage of those who have received training in patient safety was lower among doctors (37.3% vs. 41.9%, respectively) while they were similar in work experience (mean = 9.5 vs 9.4 years). The tool used was APSQ-III, which contained nine domains to assess patient safety culture (Bottcher et al., 2019). Results showed that nurses significantly have higher mean scores than doctors in the domains of error reporting confidence (3.6 vs. 3.3, p-value < 0.001) and error inevitability (3.9 vs. 3.7, p-value = 0.033), while they had significantly lower mean scores than doctors in domains of professional incompetence as a cause of the error (3.1 vs. 3.3, p-value < 0.001) and working hours as a cause of errors (3.9 vs. 4.2, p-value < 0.001). In contrast, other domains showed no significant

differences between nurses and doctors, including team functioning, patient involvement in reducing errors, and the curriculum's importance in patient safety (p-value < 0.05).

The study did not compare nurses' or doctors' mean patient safety scores according to their sociodemographic or professional factors. On the other hand, the study concluded a moderate attitude toward patient safety among nurses and doctors and recommended improvement space in this field (Bottcher et al., 2019).

In a study assessing safety culture in neonatal intensive care units (NICUs) across the West Bank – Palestine, 305 nurses and physicians were surveyed using a cross-sectional design and the Arabic Safety Attitudes Questionnaire (SAQ) (Hamdan, 2013). The participants were primarily female (63%) and nurses (80.4%), with the majority being 30 years or younger (62.6%), holding at least a bachelor's degree (66.7%), and having over five years of experience (60.3%). The questionnaire's domain scores ranged from 71.22% for job satisfaction to 63% for stress recognition, with significant variations stated across different NICUs (p-value > 0.05). Notably, 85% of respondents rated safety as excellent or very good, yet 71.0% reported no events in the preceding year. Lastly, there was no significant relationship between the number of reported events and the mean scores of all domains of SAQ (p-value < 0.05). At the same time, the perceived safety grade significantly affected the mean scores of almost all domains (except for stress recognition), with significantly higher mean scores among those who graded safety as excellent/very good versus those who graded it as acceptable/weak. The study highlights substantial differences in safety culture within and among NICUs, emphasizing the necessity for strategies to enhance healthcare delivery in this sensitive clinical environment (Hamdan, 2013).

Focusing on nurses only, a descriptive cross-sectional study involving 210 nurses from four public general hospitals in the Gaza Strip used the Arabic SAQ was conducted to explore the impact of position, age, experience, and working hours on nurses' perception of patient safety culture in surgical, medical, ICUs and Ob/GYN departments (Elsous et al., 2017). Results indicated job satisfaction (mean = 79.5%) as the most influential factor in patient safety, with the perception of unit management (mean = 76.4%) also playing a pivotal role. Positive safety attitudes were more prevalent among nurse managers (76.2%) compared to frontline staff (72.5%, p-value = 0.016) and increased with age and experience (p-value < 0.05 in most domains). Collaborative attitudes with other nurses, physicians, and pharmacists also correlated with positive safety perceptions (p-value < 0.05 in most domains among all HCPs). However, the study's findings are not generalizable due to excluding private and specialized hospitals. The study concludes that assessing safety culture is crucial for improving patient care and suggests that policies ensuring job satisfaction, reinforcing teamwork and management perceptions, and recognizing stress can enhance safety culture. It also supports a mix of experienced and less experienced nurses to encourage a learning environment and continuous education within hospitals (Elsous et al., 2017).

In 2018, a Palestinian study was implemented focusing on the importance of applying patient safety programs and initiatives, and the situation between pre- and post-implementation periods was compared (Hamdan & Saleem, 2018). The comparative analysis of the patient safety culture in Palestinian public hospitals, conducted using a cross-sectional quantitative method, showed significant developments following the implementation of patient safety measures between 2011 and 2016. Through the Hospital Survey on Patient Safety Culture (HSPSC) tool, responses from 1,229 employees (50%

are nurses/midwives, 15.8% are physicians, and other non-HCPs) highlighted improvements in 83.3% of composite categories and 86.0% of individual items of the used tool. There was a significant improvement in positive responses by 9.1% to 3.8% in areas such as 'Frequency of events reported' and 'Teamwork across hospital units', respectively, with a significant p-value < 0.001. On the other hand, 'Staffing' showed a downturn in positive responses by 11.4% (p-value < 0.05). No significant change was found in 'Organizational learning—continuous improvement.' A majority of the participants (70.5%) stated patient safety as 'Excellent/Very good' in their work setting, which is a 6.3% increase from the baseline (p-value < 0.001), despite the no significant change in reported events over the 12 months. The application of a comparative approach in addition to a validated tool like the HSPSC is essential in highlighting the impact of safety initiatives and the need for ongoing assessment to inform policy and practice in patient safety (Hamdan & Saleem, 2018).

The previous Palestinian study was included in the comparison of their results with the results of the Saudi study of Alswat et al. (2017), which is done by comparing the achievements in patient safety culture improvements between the Palestinian and the Saudi studies, taking into consideration that the Saudi study also compared their achievements with other studies. The Saudi study included 2501 staff members and used the same HSPSC tool. The sample consisted of 84.1% females, 46.4% are between 30 and 45 years old, 64.4% are married, 56.2% with a bachelor degree of education, 51.9% and 30.6% are working in the medical and surgical fields, respectively, 78.3% are nurses, 32.3% have an experience of 6 – 10 years, 48.1% grading the patient safety as very good, and 55.8% stating no event reports with 28.0% reporting 1 -2 events in the last 12 months. The overall patient safety perception score was 59.5%, with the highest scores related to

organizational learning and continuous improvement (86.3%) and teamwork within units (84.8%) domains, while the lowest were in the domains of staffing (33.8%) and communication openness (45.0%). According to the comparison between the two periods of the study (2012 and 2015), all the domains witnessed significant improvements in the means scores, with an overall score increasing from a mean of 3.43 to 3.60 (p-value < 0.001), and the frequency of reported events increasing from a score of 3.64 to 4.04 (p-value < 0.001). In comparison with the achievements of the Palestinian study, the Saudi study found better benchmarking in all of the domains of patient safety attitude, ranging from 8.6% to 103.5%, except for the domain of staffing, in which the Palestinian study had a better improvement by 11.1%. The researchers concluded the importance of continuous assessment and evaluation of patient safety culture composites, and such acts are linked to better understanding and visualization of performance, as well as identifying additional areas of improvement.

Using the same tool (HSPSC), another Palestinian study was conducted in a university hospital to evaluate the perception of patient safety among 107 nurses, focus on the most common areas of improvement, and investigate the most common related factors. The study included nurses who are 61.7% males, with a mean age of 26.2 years old, with an experience of 6 – 10 years in the profession (41.1%), and 1 – 5 years in their current department (50.5%). The nurses mostly worked 40 – 69 hours per week (75.8%) and are registered nurses (95.3%). Results showed that the two areas with the most positive patient safety culture were organizational learning and continuous improvement (87%) and teamwork within units (86%), while the lowest scores were in domains of nonpunitive response to errors (22%), communication openness, and staffing (52% each). The domain of communication openness was found to be a significant predictor of the

overall perception of safety (p-value = 0.019). In contrast, the domain of feedback and communication about the error significantly predicted the frequency of reported errors (p-value = 0.005). Regarding demographic factors, only age was shown to be a significant predictor of the overall score of patient safety culture (p-value = 0.046). The study concluded that it is important to focus on the culture of incidence reporting to improve the situation among the nurses (Zabin et al., 2022).

2.2 Attitudes Toward Patient Safety in Emergency Departments

Focusing on physicians' and nurses' attitudes towards patient safety in EDs is crucial, as these settings are often high-pressure and fast-paced, increasing the risk of errors. Compared to other hospital departments, EDs require rapid decision-making and interventions, making a culture of safety and attention essential. Positive attitudes towards safety can significantly reduce the probability of adverse events, enhancing patient care quality and outcomes in these critical environments. A systematic review of 11 papers which were included in a thematic synthesis by Fekonja et al. (2023), found that several factors related to the ED's environment are related to patient safety, including high workload, staffing, repeated interruptions, and patient assessment, while other factors were related to the nurses themselves, including their traits, knowledge, experience, work schedule and triage fatigue, and therefore, the safety culture among HCPs in the EDs are influenced by their capabilities, attitudes and experience.

Using the short form of SAQ, a Brazilian team of researchers conducted a cross-sectional study on a sample of 177 nurses working in EDs of public hospitals. It aimed to investigate the factors related to their patient safety culture and attitude. The nurses were mostly females (85.9%) with a median age of 40 years old, while 53.7% reported working

in more than one place, compared to 45.2% working at night shifts only. Results showed that the mean score of the SAQ was 67.6 ± 14.2, with the highest scores in the domains of work satisfaction (mean = 78.8 ± 21.8) and stress perception (mean = 71.8 ± 26.3), while the lowest scores were in the domains of perception of unit and hospital management (mean = 58.9 ± 19.4) and safety climate (mean = 60.3 ± 18.4). In the regression analysis of the factors related to the general safety climate among the nurses, the scores were significantly predicted to be lower by working in the night shifts (B = -5.60, p-value = 0.005), as well as having moderate/high intention to leave nursing compared to none/low levels of intention (B = - 8.27, p-value = 0.018). The researchers concluded that it is essential to determine the most common and predicting factors that are relevant to the patient safety culture, attitudes, and climate among HCPs who are working in EDs, which helps managers to diagnose, plan, and implement activities and targeted procedures to improve them (Castilho et al., 2020).

In the ED of a university hospital in Switzerland, a survey study was conducted with a quantitative approach in order to investigate the patient safety culture among 140 nurses and physicians who are working in the mentioned ED. It included nurses who are mostly 30 – 39 years old (36.7%) with a perceived workload of 80 – 100 % by 78.3% of them and mostly between 1 and 3 years of experience (30.0%), while physicians mainly were between 20 and 29 years old (39.0%), lower percentage of the perceived workload of 80 – 100% (63.4%) and mainly had experience of less than one year (53.7%). Results showed that nurses significantly have a lower perceived patient safety grade that is “very good” (57.6%) than physicians (76.2%) and a higher percentage of “acceptable” grading (33.9% vs 19.1%, respectively). Despite not clearly showing the scores of the used tool, the HSPSC tool, the researchers stated that positive attitudes were found in areas of

nonpunitive response to errors, teamwork within units, and staffing. In contrast, the lowest scores were in reported events frequency, teamwork across units, and handoffs and transitions. The researchers concluded that several areas in patient safety and its culture can be improved among the Swiss team of nurses and physicians (Ricklin et al., 2019).

Qualitative studies have also been conducted to determine the patient safety culture among HCPs working in the EDs, which allows for purposeful enhancement in the safety event reporting system. A Canadian study utilized the qualitative approach on a sample of 50 HCPs. The study explores patient safety events (PSEs) in EDs, which are high-risk zones due to the stressful cognitive workload and constant disruptions. Despite an intrinsic commitment among HCPs in EDs to report PSEs, the current reporting systems are lacking. The research engaged the participants through emails, interviews, focus groups, and workshops to explore their perceptions and beliefs about the PSE reporting system. This process, informed by the constant comparative method and thematic analysis, revealed that formal reporting channels are considered challenging and less effective than informal ones, which remain fairly underused. The study identifies three critical elements for an enhanced PSE reporting system: clear definitions, transparency, and simplicity. The article suggests combining these features could strengthen PSE reporting, enhancing the information available for quality improvement initiatives and improving patient safety in EDs (Skutezky et al., 2022).

In another qualitative study conducted in Sweden, the researchers recruited 14 registered nurses (RNs) in five EDs with work experience of 1 – 18 years. They aimed to investigate the perception of patient safety culture in times of overcrowding and prolonged length of stay in the EDs. Results of the latent approach thematic analysis revealed that patient safety in such situations in EDs is characterized by two main themes:

the first is related to the fact that patient safety is met with several obstacles and challenges in the clinical environment and includes deficiencies in the experience of RNs regarding patient safety, as well as the impact of working procedures and routine, while the second theme is related to the idea that such challenges are the professional and nursing responsibilities, as characterized by essential nursing care and actual workload balancing, and the loss of control that may lead to emotional reactions. This study highlights the impact of overcrowding in EDs, and health organizations should review specific patients' procedures in such situations (Eriksson et al., 2018).

It is essential to continuously evaluate the patient safety attitudes among HCPs in the emergency departments, which helps provide hospital managers with suitable information about the areas that need improvement. The continuous measurements in such areas are witnessed in accredited hospitals, which were the locations in a Jordanian study that was conducted by Malak et al. (2022) in two accredited hospitals (a governmental and a private) and included a sample of 424 nurses in EDs, using the SAQ. The overall mean score of patient safety culture among the sampled nurses was 70.6%, which indicated a need for improvement, with the highest scores in domains of teamwork within units (mean = 77.4%), followed by feedback and communication about the error (mean = 76.6%) and organizational learning-continuous improvement (mean = 75.4%), while the lowest scores were in the domains of handoffs and transitions (mean = 64.4%) and frequency of reported events (63.6%). The researchers highlighted the need for more focus on the patient safety culture in the Arabic literature, which is related to the lack of studies in this area, especially in emergency settings.

In a Saudi study investigating the attitude toward patient safety among HCPs in the EDs of two large hospitals, the researchers used the validated version of SAQ. In their

sample of 503 HCPs, a majority of 79.1% are women, and 72.2% are nurses. Most participants have 5–10 years of experience in their specialty (24.7%). Regarding errors, 55.9% reported no errors in their practice. Results showed that all dimensions of SAQ had mean scores of less than 75%, indicating less than positive attitude in all of the subscales, with the highest scores in the dimensions of job satisfaction (72.52%) and teamwork climate (66.13%), while the least scores were in the dimensions of perception of hospital management (56.93%) and stress recognition (58.08%). Between doctors and nurses, there were significantly different mean scores in the subscales of teamwork climate (69.84% vs. 64.69%, p-value = 0.01) and work conditions (59.09% vs. 64.72%, p-value = 0.01), respectively. Lastly, the number of reported errors was significantly correlated with decreased scores of safety attitude in the subscales of teamwork climate (r = - 0.13, p-value < 0.01), job satisfaction (r = - 0.10, p-value = 0.03), and work conditions (r = - 0.11, p-value = 0.02). The researchers concluded that the differences between their findings and those of others and that cross-cultural differences play a role in this, considering the multinationalism of the HCPs working in Saudi hospitals (Alzahrani et al., 2018).

2.3 Definition of Terms

This section highlights the conceptual and operational definitions of the main terms of the study variables.

Attitude

Conceptual Definition: In the psychological context, attitude is a complex mental and emotional entity that can be composed of three components: cognitive (thoughts and beliefs), affective (feelings and emotions), and behavioral (actions or intended actions),

which are formed through experience and learning, and they impact the way individuals perceive and respond to their environment and social stimuli (Eagly & Chaiken, 1993).

Operational Definition: Operationally, attitudes are often quantified through questionnaires and scales that assess an individual's thoughts, feelings, and behavioral intentions toward specific subjects. In research, attitudes are assessed using Likert scales (ranging from strongly agree to disagree strongly) or other similar rating systems, and such instruments are designed to assess the strength and direction of an individual's attitude towards a specific object or concept (Gawronski, 2007; Greenwald, 2014).

Patient safety

Conceptual Definition: The World Health Organization (WHO) defines patient safety as "the absence of preventable harm to a patient during the process of health care and reduction of risk of unnecessary harm associated with health care to an acceptable minimum." This definition focuses on minimizing risks and preventing errors in healthcare settings to protect patients from harm (World Health Organization, 2021).

Operational Definition: In the current study, the patient safety attitude was measured using a valid tool of Safety Attitude Questionnaire (SAQ), a 6-imension tool that contains items rated on a 5-point Likert scale (from strongly agree to strongly disagree), focusing on teamwork climate, safety climate, job satisfaction, perception of management, working conditions and stress recognition.

2.4 Conclusion

In conclusion, patient safety culture among healthcare professionals (HCPs) in general hospital departments is complex and variable, with a special focus on those in emergency departments (EDs). While various tools are employed to measure safety

culture, the Safety Attitudes Questionnaire (SAQ) was relatively less used than other instruments. This underutilization may impact the depth of safety culture assessments, specifically in high-risk areas like EDs. The studies reveal similarities and differences in safety attitudes across different geographical locations and that they are affected by demographics, work experience, and department environments. There are unique challenges due to their high-pressure, fast-paced environments, requiring an individual approach to developing a safety culture. Positive safety attitudes in EDs are necessary for minimizing errors and enhancing patient care quality, yet are often challenged by factors like workload, staffing issues, and the demanding nature of emergency care. This review highlights the need to continuously evaluate patient safety attitudes using various assessment tools, including the SAQ.

Chapter Three

Methodology

In this chapter, the researcher reviews the methodological approaches adopted to conduct the current study, including the study's design, setting, sampling details, eligibility criteria, data collection tool, process and analysis, and ethical considerations.

3.1 Study Design

The study was conducted using a cross-sectional, quantitative, analytical design, in which the researcher collected the data from the nurses and physicians in a single time point without any further follow-up. Also, the researcher used a self-administered questionnaire. Therefore, the quantitative data that were used helped the researcher represent the results numerically, with the ability to compare results between several groups, according to the demographic characteristics and professional factors (Wang & Cheng, 2020). This approach is also cost-effective and time-efficient, especially suitable for medical team populations, as they are large with others. It provides a broad overview of the current state of patient safety culture, which is crucial for identifying areas needing improvement in emergency healthcare settings (Kesmodel, 2018).

3.2 Site and Setting

The study was conducted in the emergency departments (EDs) of selected governmental and private hospitals in Northern West Bank – Palestine, consisting of hospitals in Jenin, Tulkarem, Qalqilyah, and Nablus cities. According to the Palestinian Central Bureau of Statistics (PCBS), the total number of hospitals in Palestine as of 2022 is 93 hospitals, of which 29 are governmental and 64 non-governmental hospitals, with a

total capacity of 6,900 beds, resulting in a ratio of 1.3 beds per 1,000 citizens. In the West Bank, there are 58 hospitals, 18 governmental and 40 non-governmental hospitals, with a total of 4,286 beds, resulting in the same ratio of 1.3 beds per 1,000 citizens (Ministry of Health, 2023). The total number of physicians and nurses in Palestine is 15,224 and 25,211, respectively, of which 8,136 and 13,016, respectively, are working in the West Bank (Palestinian Central Bureau of Statistics, 2023). According to the Palestinian Ministry of Health (MoH), the total number of recorded emergency visits in Palestine in 2022 was 2,653,913, of which are 1,035,032 in West Bank emergency settings (Ministry of Health, 2023). Unfortunately, up to the researcher's search, there were no official reports of the number or types of EDs in the Palestinian hospitals or the numbers of HCPs working there.

In the northern West Bank, several governmental and private hospitals are serving the community. In Jenin, the governmental hospital is named Martyr Dr. Khalil Suliman Hospital, established in 1960, with a current capacity of approximately 250 beds, in addition to several private hospitals, including Ibn Sina Specialized Hospital (a part of Al-Arabi Hospitals Group), Al-Amal Hospital, Al-Shifaa' Hospital, and Al-Razi Hospital. In Tulkarem, the main governmental hospital is called Martyr Dr. Thabet Thabet Hospital, established in 2004, with a capacity of 158 beds, and continues to serve as a vital healthcare institution for residents of Tulkarem and surrounding regions in spite of the current challenges. The other governmental hospital in Tulkarem is Attil Governmental Hospital, located in the village of Attil in Northern Tulkarem, which was established in December 2021, with five emergency beds, serving a critical area between the cities of Jenin and Tulkarem. Private hospitals in Tulkarem include Palestine Red Crescent Society

(PRCS) Hospital and Al-Israa Specialized hospital, formerly known as Al-Zakat Hospital, which was established in 1990.

In Qalqilyah city, the governmental hospital is named Darwish Nazzal Hospital, serving as the main hospital that provides emergency and inpatient services for the whole city, in addition to the United Nations for Relief and Work Agency for Palestine Refugees (UNRWA) hospital, which was established in 1950, and has a capacity of 63 beds. Nablus City has a variety of governmental and private hospitals, which serve as central healthcare institutions and referral hospitals for the Northern West Bank. The governmental hospitals include Al Watani Governmental Hospital, one of the oldest institutions in Nablus city, established in the early 19th century during the Ottoman Empire, and currently having an approximate capacity of more than 100 beds, serving the medical side of healthcare in Nablus city. In addition, Rafidia Hospital is another governmental hospital established in 1976 and is considered the surgical government-operated facility under the Palestinian ministry of health, with an approximate capacity exceeding 200 beds. Moreover, Nablus city contains the leading educational hospital of West Bank, named An-Najah National University Hospital, that was established in 2013, in partnership with the university's Faculty of Medicine and Health Sciences, and having more than 130 beds, with a plan of expansion to reach 500 beds. Additionally, Nablus city contains Arab Specialized Hospital (a part of Al-Arabi Hospitals Group), established in 1998, and equipped with 110 beds, as well as Nablus Specialized Hospital, which was established in 2001, and having a capacity of 54 beds.

3.3 Sample Size and Sampling

The study population consists of all the nurses and physicians currently working as full-time HCPs in the targeted adult EDs, regardless of their age, gender, experience and other factors. In the current thesis exploring patient safety culture among emergency department physicians and nurses, a convenience sampling technique was employed, which involved selecting participants who were readily available and willing to participate, focusing specifically on nurses and physicians working in emergency departments. This method was chosen for its practicality and ease of access to potential respondents in a busy medical environment (Sedgwick, 2013).

The sample size was calculated using the Raosoft Sample Size Calculator, which is based on the population number (204 nurses and 96 physicians). Based on a margin of error of 10%, and a confidence interval of 95%, the calculated sample size was 73 participants, while the researcher recruited a total of 74 participants (45 nurses and 29 physicians). This size was sufficient to detect statistically significant differences or trends in the data, ensuring the strength and reliability of the study's findings. The chosen sample size and sampling technique support well with the study's objectives, providing a practical and effective strategy to examine the patient safety culture in a high-pressure healthcare setting. The following table distributes the number of total and sampled nurses and physicians who are working in the emergency departments of the targeted hospitals in Northern West Bank.

Table 3.1: Distribution of emergency departments workforce population and sample in the targeted hospitals

Hospital name	**No. of nurses**	**Sampled nurses**	**No. of physicians**	**Sampled physicians**
Jenin city				
Martyr Dr. Khalil Suliman	26	5	11	3
Al-Razi Hospital	10	2	12	2
Al-Amal Hospital	5	2	7	1
Ibn Sina Specialized Hospital	11	2	3	2
Al-Shifaa' Hospital	8	2	4	1
Tulkarem city				
Dr. Thabet Thabet Hospital	21	4	8	2
Attil Governmental Hospital	11	2	4	1
Al-Israa Hospital	5	2	4	1
Qalqilyah city				
Darwish Nazzal Hospital	11	3	6	2
Nablus city				
Al-Watani Hospital	25	5	9	4
Rafidia Surigcal Hospital	32	6	11	3
An-Najah National University Hospital	10	3	5	2
Nablus Specialized Hospital	9	2	5	2
Arab Specialized Hospital	15	3	4	2
Arab Women's Union Society	5	2	3	1
Total number	**204**	**45**	**96**	**29**

3.4 Eligibility Criteria

Inclusion criteria: The study asked all physicians and nurses working as full-time HCPs in the targeted adult EDs to participate, regardless of age, gender, educational level, experience in their profession or current department, or number of hours worked.

Exclusion criteria: Physicians and nurses who refuse to participate or work in pediatric or gynecological EDs were excluded, and those working in pediatric, gynecological, or other types of EDs were excluded from participation.

3.5 Data Collection Tool

In the current study, a self-administered questionnaire (Appendix 1 and 2) was used to collect data from all nurses and physicians who participated in the study, and consisted of two main parts. The first part is concerned with the demographic data of the participants and includes close-ended questions about age, gender, type of hospital (governmental vs private), whether the hospital is Joint Commission Accreditation (JCI) accredited or not, highest educational level, job description, experience in the profession and current department, number of hours worked per week and the number of reported events in the last 12 months.

The second part of the questionnaire consisted of the valid tool Safety Attitude Questionnaire (SAQ), which is an established tool widely used in healthcare research to assess safety culture and attitudes among HCPs, and is specifically designed to measure the perception of safety in healthcare settings, such as hospitals and clinics. It covers multiple domains related to patient safety and the healthcare work environment, which typically include:

1. **Teamwork Climate**: Assesses perceptions of the quality of collaboration and communication among team members.
2. **Safety Climate**: Evaluates the perceived commitment to safety in the organization.
3. **Job Satisfaction**: Measures the level of satisfaction among staff regarding their job roles and responsibilities.
4. **Stress Recognition**: Evaluates staff awareness of the impact of stress and fatigue on performance.
5. **Perceptions of Management**: Gauges staff views on management and administration's actions in supporting and promoting safety.
6. **Working Conditions**: Assesses the adequacy and impact of the work environment and resources on staff performance.

The SAQ usually uses a Likert scale for responses, ranging from strongly disagree to strongly agree, allowing respondents to express their agreement with various statements related to the abovementioned domains. The scoring of the SAQ is calculated based on the responses to these Likert scale items, with higher scores indicating a more positive perception of safety culture, and are often analyzed both at the individual level and combined to provide an overview of the safety culture within a department or the entire organization (Sexton et al., 2006).

3.6 Validity and Reliability

The SAQ was developed initially by Sexton et al. (2006), and was influenced by earlier work in aviation safety, mainly the Cockpit Management Attitudes Questionnaire (CMAQ), which was adapted for the healthcare environment to assess safety attitudes among HCPs, and was key in recognizing the importance of teamwork, communication,

and safety culture in the medical field, similar to their significance in aviation (Sexton et al., 2000).

Regarding its psychometric properties and benchmarking data, the developers of the original tool of SAQ have validated it in their original study (Sexton et al., 2006), followed by several studies that validated a variety of versions according to the language and country. For example, Malinowska-Lipień et al. (2021) have validated the short form (SAQ-SF) in Poland and found that the reliability scores of its subscales ranged from 0.66 to 0.95, indicating an acceptable to high level of reliability and therefore meeting the psychometric and functional validation criteria in the targeted population. Another study has validated the full version of SAQ in the Indonesian language. At the same time, they stated that further work is needed and found an overall unidimensional in all domains. In contrast, they stated that further work is needed on some individual items that led to some deviation from the scores (Ningrum et al., 2019).

A Palestinian team of researchers has validated the Arabic version of SAQ-SF (Elsous et al., 2017) and found that Cronbach's alpha of the scale was 77.7%, ranging from 74.7% to 82.2%, indicating a good level of validity and reliability of this version. Unfortunately, no valid version of the full version of SAQ (31-item) was found in the Arabic language. Therefore, content validity method was used to validate a translated version of the 31-item questionnaire, where the researcher asked a panel of 5 experts in the field of emergency and patient safety, including two emergency doctors, two emergency nurses and one quality and patient safety specialist, to review the translated version and give critical feedback on its content and consistency. The feedback was informative, with minor modifications to the vocabulary structure of some statements, which suited the Palestinian context. Finally, the questionnaire that was used in the final

data collection process included both original English and Arabic statements so that they could be understood by all participants regardless of their proficiency in the English language.

3.7 Piloting

Before the final distribution, the reviewed questionnaire was distributed to a pilot sample that consisted of 10% of the recommended sample size (5 nurses and 3 doctors), who were asked to fill in the questionnaire and give feedback regarding the content, coverage, suitability, and time consumed to fill in the questionnaire. All piloted nurses and doctors provided minor comments with positive overall feedback and were considered in building the questionnaire's final form. It is worth mentioning that the nurses and doctors who filled in the piloting questionnaire worked outside the targeted settings, and their responses were not included in the final data analysis and interpretation.

3.8 Data Analysis

The Statistical Package for Social Sciences (SPSS) software version 27.0 was used for data analysis. First, the researcher conducted normality testing to determine whether the collected data followed the normal curve. Then, a descriptive analysis was performed, which included frequencies and percentages of the physicians' and nurses' responses to the categorical demographic data and the individual items of each domain of SAQ, as well as means and standard deviations of the scale variables and the scores of the SAQ.

3.9 Ethical Consideration

The current study has been conducted in compliance with the Helsinki Declaration for ethical research purposes, where the researcher granted ethical approval from the Arab American University of Palestine (AAUP) Institutional Review Board (IRB), followed by approval from the Palestinian MoH for the governmental hospitals and from each of the non-governmental hospitals according to their policies. Then, the data collection process started with obtaining informed consent, which was attached to the questionnaire.

A consent form was attached to each questionnaire in which participants were informed that participation was optional, they had the right not to answer any question, and that the collected data would be used with high confidentiality and only for the stated research purposes.

Chapter Four

Results

This chapter is concerned with viewing the descriptive and analytical results of the current study, including the frequencies and percentages of nurses' and doctors' responses to their demographic data and the Safety Attitude Questionnaire (SAQ), as well as the means of the SAQ score. Analytical results investigated the relationship between demographic factors and the predictors of safety attitude.

Part 1: Demographic Data of Emergency Nurses and Doctors

The study recruited 74 nurses (60.8%) and doctors (39.2%), who had a mean age of 30.32 ± 5.74 years old and ranged from 23 to 49 years old, with a predominant percentage of males (71.6%). Also, more than half of the recruited sample worked at governmental hospitals (56.8%), of which 18.9% are JCI-accredited hospitals, while 27.0% of the nurses and doctors thought that their hospital was JCI-accredited as shown in Table 1

Majority of the sample (71.6%) hold the bachelor's degree (which included doctors in their residency programs), with a total job experience that was nearly half (45.9%) below 5 years, with a mean of 6.93 ± 5.19 years, ranging from 1 to 22 years, in comparison to 63.5% with less than 5 years of experience in ED, with a mean of 5.07 ± 4.73 years, ranging from 1 to 22 years.

More than half of the participants (56.8%) stated they work between 30 and 40 hours per week in the ED, with 54.1% reported that they did not report any medical errors in the last 12 months, while 40.5% reported between 1 and 5 errors.

Table 4.1: Distribution of emergency nurses' and doctors' demographic data (n = 74)

Variables	**Values**	**Frequency**	**Percentage**
Age	Mean ± SD	30.32 ± 5.74	
Gender	Male	53	71.6%
	Female	21	28.4%
Workplace type	Governmental hospital	42	56.8%
	Non-governmental hospital	32	43.2%
Workplace accreditation	JCI accredited	14	18.9%
	Non-JCI accredited	60	81.1%
Does your hospital have the JCI accreditation?	Yes	20	27.0%
	No	43	58.1%
	I don't know	11	14.9%
Educational level	Diploma degree	6	8.1%
	Bachelor's degree	53	71.6%
	Master's degree	8	10.8%
	Specialty degree	7	9.5%
Job description	Nurse	45	60.8%
	Doctor	29	39.2%
Total experience in job	< 5 years	34	45.9%
	5 – 10 years	22	29.7%
	> 10 years	18	24.3%

	Mean ± SD	6.93 ± 5.19	
Experience in ED	< 5 years	47	63.5%
	5 – 10 years	18	24.3%
	> 10 years	9	12.2%
	Mean ± SD	5.07 ± 4.73	
How many hours do you work per week in the ED?	30 – 40 hours	42	56.8%
	40 – 50 hours	25	33.8%
	> 50 hours	7	9.5%
Number of reported medical errors in the last 12 months	None	40	54.1%
	1 – 5 errors	30	40.5%
	6 – 10 errors	2	2.7%
	> 10 errors	2	2.7%

SD = Standard deviation, ED = emergency department, JCI = Joint Commission International accreditation

Part 2: Safety Attitude Questionnaire (SAQ)

The Safety Attitude Questionnaire (SAQ) was divided into six dimensions, in which nurses and doctors were asked to rate their agreement on several statements in each of them.

In the domain related to teamwork climate, 43.2% of the participants agree that their input is well-received in the clinical area, while approximate percentages of participants agreed (31.1%) and disagreed (32.4%) that there is a difficulty in speaking up if they perceived a problem with patient care, in addition to more than one third of them (36.5%) who were neutral in their opinion related to the appropriate resolving of

disagreements in their clinical areas, which is based on not who is right, but what is the best of the patients. Moreover, 48.6% of the participants agreed that they have the support they need from other personnel to take care of the patients, while 28.4% strongly agreed about the easiness of being heard when there is something they do not understand, compared to 33.8% who agreed on the well-coordinated work between doctors and nurses as shown in Table 2

The second domain was concerned with the safety climate, in which higher relative agreements were found, where 47.3% agreed about feeling safe being treated as a patient in their workplace, with 51.4% agreeing on the appropriate handling of medical errors, and 41.9% agreeing on their knowledge of the proper channels to direct questions about patient safety in their clinical areas. Also, 37.8% of the participants agreed on the receiving of appropriate feedback about their performance, while 31.1% agreed that it is difficult to discuss errors in their clinical areas, with 39.2% agreeing that they are encouraged by their colleagues to report errors, and 43.2% agreeing on the culture in their clinical area making it easy to learn from others' errors as shown in Table 2

In the domain of job satisfaction, there were also high percentages of agreement and strong agreement on the related statements, which included liking their job (33.8% and 28.4%, respectively), describing work at the workplace as like being part of a large family (29.7% each), rating the workplace as a good place to work (31.1% and 23.0%, respectively), being proud to work in their clinical area (39.2% and 24.3%, respectively), and the high level of morale on their clinical area (29.7% and 23.0%, respectively) as shown in Table 2

On the other hand, agreement was found on statements related to stress recognition, where 36.5% agreed on their performance becoming impaired when

workload is excessive, with 41.9% agree on the less effective degree of work they provide when they are fatigued, and 40.5% agreeing on being more likely to make errors when situations are tense or hostile, while 29.7% agree on performance impairment during emergency situations, like emergency resuscitation and seizures as shown in Table 2

The fifth domain was related to the perception of management, in which 35.1% of the participants were neutral in their opinion about the support of management to their daily efforts, while 41.9% agree on that management doesn't knowingly compromise patient safety, while 37.8% agreed on the good job that the management is doing, with 33.8% agreeing on the constructive way that the management deal with problem personnel, and 40.5% agree that they receive adequate and timely information about the events that might affect their work as shown in Table 2

Lastly, the working condition domain showed contradiction in opinions, where 25.7% agreed and 20.3% strongly disagreed on the sufficiency of staffing level in their clinical area to handle the number of patients, while 37.8% agreed on the good job that their hospital does in training the new personnel, with 43.2% agreeing on the availability of necessary information for diagnostic and therapeutic decisions, and 40.5% agree on the adequate supervision that trainee receive as shown in Table 4.2

Table 4.2: Distribution of nurses' and doctors' responses to Safety Attitude Questionnaire (SAQ) items

Statement	Strongly disagree		Disagree		Neutral		Agree		Strongly agree	
	N	%	N	%	N	%	N	%	N	%
Teamwork climate										
1. Nurse input is well received in this clinical area.	6	8.1%	3	4.1%	15	20.3%	32	43.2%	18	24.3%
2. In this clinical area, it is difficult to speak up if l perceive a problem with patient care.	5	6.8%	24	32.4%	18	24.3%	23	31.1%	4	5.4%
3. Disagreements in this clinical area are resolved appropriately.	5	6.8%	12	16.2%	27	36.5%	24	32.4%	6	8.1%
4. I have the support I need from other personnel to care for patients	3	4.1%	5	6.8%	17	23.0%	36	48.6%	13	17.6%
5. It is easy for personnel here to ask questions when there is	5	6.8%	8	10.8%	20	27.0%	20	27.0%	21	28.4%

something that they do not understand										
6. The physicians and nurses here work together as a well-coordinated team.	2	2.7%	4	5.4%	20	27.0%	25	33.8%	23	31.1%
Safety climate										
7. I would feel safe being treated here as a patient.	5	6.8%	5	6.8%	16	21.6%	35	47.3%	13	17.6%
8. Medical errors are handled appropriately in this clinical area.	1	1.4%	5	6.8%	21	28.4%	38	51.4%	9	12.2%
9. I know the proper channels to direct questions regarding patient safety in this clinical area.	4	5.4%	7	9.5%	17	23.0%	31	41.9%	15	20.3%
10. I receive appropriate feedback about my performance.	6	8.1%	13	17.6%	15	20.3%	28	37.8%	12	16.2%
11. In this clinical area, it is difficult to discuss errors.	8	10.8%	20	27.0%	17	23.0%	23	31.1%	6	8.1%

12.1 am encouraged by my colleagues to report any patient safety concerns I may have.	5	6.8%	11	14.9%	23	31.1%	29	39.2%	6	8.1%
13. The culture in this clinical area makes it easy to learn from others' errors.	2	2.7%	12	16.2%	19	25.7%	32	43.2%	9	12.2%
Job satisfaction										
14. I like my job	7	9.5%	2	2.7%	19	25.7%	25	33.8%	21	28.4%
15. Working here is like being part of a large family.	2	2.7%	7	9.5%	21	28.4%	22	29.7%	22	29.7%
16. This is a good place to work.	6	8.1%	7	9.5%	21	28.4%	23	31.1%	17	23.0%
17. I am proud to work in this clinical area.	4	5.4%	5	6.8%	18	24.3%	29	39.2%	18	24.3%
18. Morale in this clinical area is high.	5	6.8%	9	12.2%	21	28.4%	22	29.7%	17	23.0%
Stress recognition										
19. When my workload becomes excessive,	6	8.1%	5	6.8%	22	29.7%	27	36.5%	14	18.9%

my performance is impaired.										
20. I am less effective at work when fatigued.	2	2.7%	7	9.5%	16	21.6%	31	41.9%	18	24.3%
21. I am more likely to make errors in tense or hostile situations.	9	12.2%	9	12.2%	21	28.4%	30	40.5%	5	6.8%
22. Fatigue impairs my performance during emergency situations.	8	10.8%	13	17.6%	21	28.4%	22	29.7%	10	13.5%
Perception of management										
23. Management supports my daily efforts.	9	12.2%	6	8.1%	26	35.1%	25	33.8%	8	10.8%
24. Management doesn't knowingly compromise patient safety.	7	9.5%	10	13.5%	15	20.3%	31	41.9%	11	14.9%
25. Management is doing a good job.	4	5.4%	9	12.2%	21	28.4%	28	37.8%	12	16.2%
26. Problem personnel are dealt with constructively by our management.	5	6.8%	9	12.2%	22	29.7%	25	33.8%	13	17.6%

27. I get adequate, timely info about events that might affect my work.	7	9.5%	5	6.8%	23	31.1%	30	40.5%	9	12.2%
Working condition										
28. The levels of staffing in this clinical area are sufficient to handle the number of patients.	15	20.3%	14	18.9%	17	23.0%	19	25.7%	9	12.2%
29. This hospital does a good job of training new personnel.	13	17.6%	8	10.8%	16	21.6%	28	37.8%	9	12.2%
30. All the necessary information for diagnostic and therapeutic decisions are routinely available to me.	5	6.8%	5	6.8%	23	31.1%	32	43.2%	9	12.2%
31. Trainees in my discipline are adequately supervised.	6	8.1%	11	14.9%	19	25.7%	30	40.5%	8	10.8%

N = Number (frequency)

Based on the calculation of the patient safety scores of SAQ tool, the mean scores of the safety domains were shown in the following Table 3. It shows that the overall safety attitude score was 66.70% ± 11.10%, which can be considered in the moderate safety level, while the highest safety attitudes were found in the domains of job satisfaction (72.59% ± 17.95%), followed by teamwork climate (70.27% ± 14.01%) and safety climate (68.61% ± 13.75%), compared to lower safety attitude scores in domains of perception of management (67.68% ± 16.63%), working conditions (64.26% ± 18.92%) and worst score of stress recognition (51.89% ± 17.96%). In conclusion, all domains showed moderate patient safety attitude, except for the domain of stress recognition, which was perceived as low level as shown in Table 4.3 and Figure 4.1

Table 4.3: Description of SAQ domains and overall scores

Domain	**Mean**	**SD**	**Minimum**	**Maximum**
Teamwork climate	70.27	14.01	30.00	100.00
Safety climate	68.61	13.75	22.86	97.14
Job satisfaction	72.59	17.95	28.00	100.00
Stress recognition	51.89	17.96	20.00	95.00
Perception of management	67.68	16.63	20.00	100.00
Working conditions	64.26	18.92	20.00	100.00
Overall SAQ	66.70	11.10	31.61	90.32

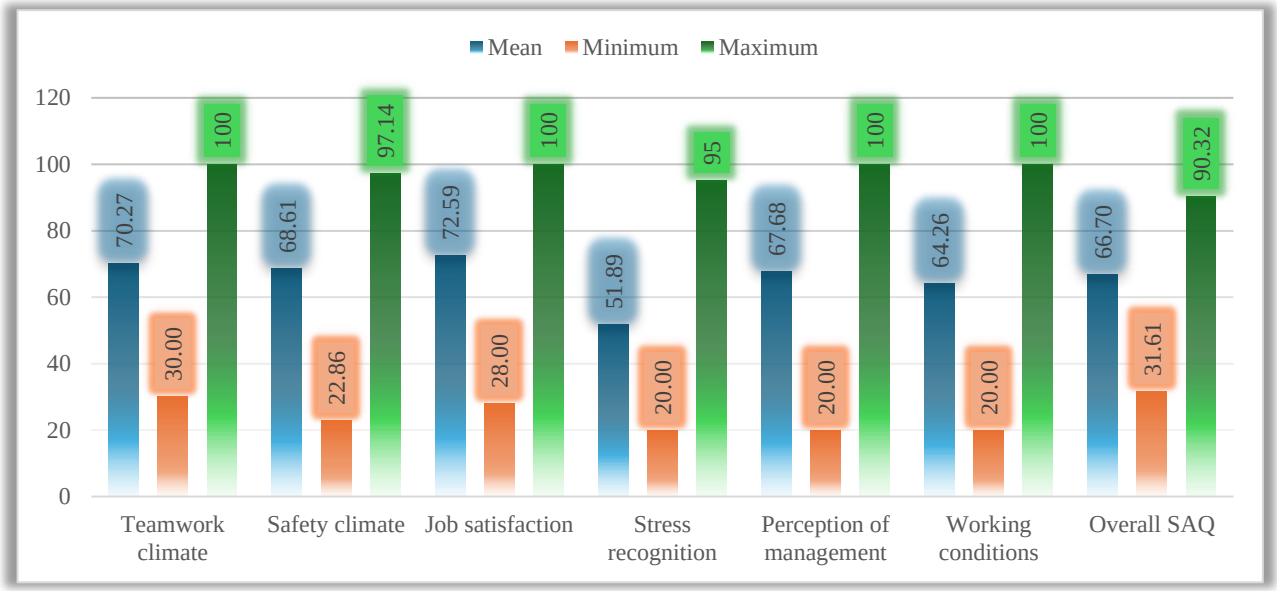


Figure 4.1: Description of Domain and Overall SAQ Scores

The scores of safety attitudes of the domains and overall score of SAQ were classified into three categories. Overall, 70.3% of the nurses and doctors had moderate patient safety attitude, with moderate scores that are more than half of the participants in domains of safety climate (60.8%) and teamwork climate (50.0%), with 40.5% having high safety attitude in the domain of job satisfaction. Less than half of the participants had moderate scores in the domains of perception of management (48.6%) and working conditions (44.6%), while 64.9% of the participants had low safety attitude in the domain of stress recognition as shown in Table 4.4 and Figure 4.2

Table 4.4: Distribution of classifications of SAQ domains and overall scores

Domain	**Low**		**Moderate**		**High**	
	F	**%**	**F**	**%**	**F**	**%**
Teamwork climate	13	17.6%	37	50.0%	24	32.4%
Safety climate	12	16.2%	45	60.8%	17	23.0%
Job satisfaction	13	17.6%	31	41.9%	30	40.5%

Stress recognition	48	64.9%	17	23.0%	9	12.2%
Perception of management	15	20.3%	36	48.6%	23	31.1%
Working conditions	24	32.4%	33	44.6%	17	23.0%
Overall SAQ	16	21.6%	52	70.3%	6	8.1%

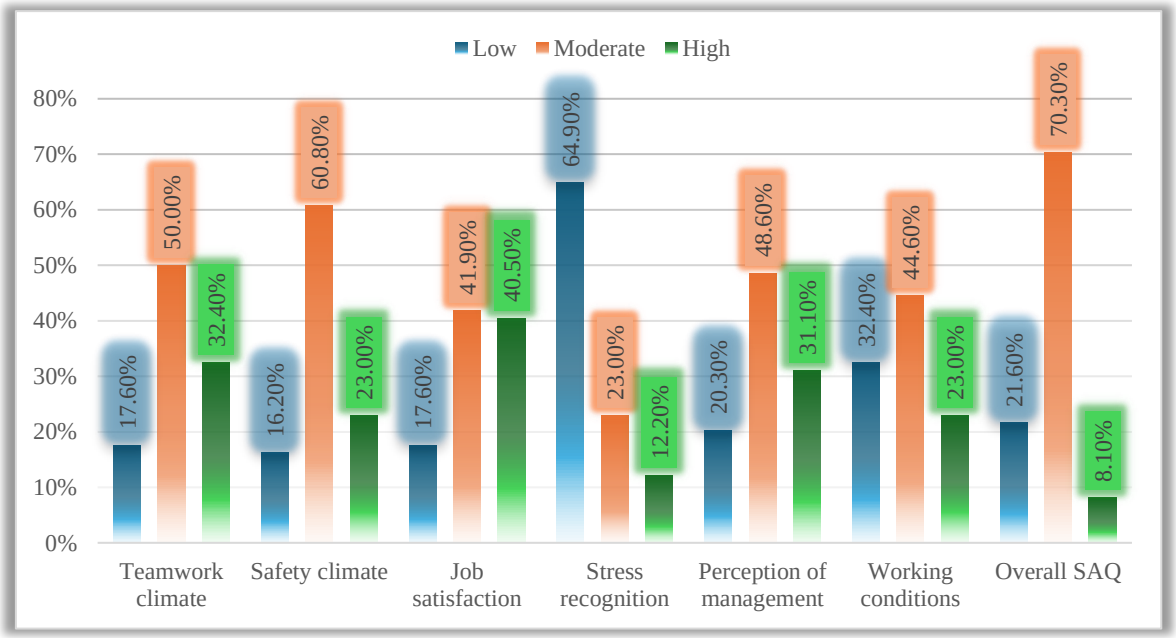


Figure 4.2: Distribution of domain and overall SAQ classifications

Part 3: Analytical Results

The relationship between nurses' and doctors' demographic factors and their overall scores of SAQ were investigated using the appropriate tests, as shown in Table 5 below. Significantly higher scores were found among participants who worked at non-governmental hospitals (mean = 70.14% ± 9.19%) than in the governmental hospitals (mean = 64.09% ± 11.81%, p-value = 0.019). Also, better safety attitudes were significantly found among nurses and doctors who worked for less hours per week in ED, for example, who work for 30 – 40 hours (mean = 69.06% ± 10.31%) than who work for more than 50 hours per week (mean = 61.75% ± 15.89%, p-value = 0.047), as well as

who reported less errors in the last 12 months, for example, among who reported no errors (mean = 69.56% ± 11.24%) than who reported between 6 and 10 errors (mean = 52.58% ± 8.67%, p-value = 0.045). The rest of the demographic factors were not significantly related to differences in overall patient safety attitude scores as shown in Table 4.5 below.

Table 4.5: Relationship Between Participants' Demographic Factors and Safety Attitude Scores

Factors	**Values**	**Mean**	**SD**	**p-value**
Age	Correlation	0.063		0.593
Gender	Male	66.27	11.90	0.595
	Female	67.80	8.94	
Workplace type	Gov. hospital	64.09	11.81	0.019
	Non-gov. hospital	70.14	9.19	
Workplace accreditation	JCI accredited	68.89	9.63	0.416
	Non-JCI accredited	66.19	11.43	
Does your hospital have the JCI accreditation?	Yes	68.58	10.85	0.591
	No	66.42	10.82	
	I don't know	64.40	13.07	
Educational level	Diploma degree	63.87	4.54	0.425
	Bachelor's degree	67.97	10.83	
	Master's degree	61.69	16.75	
	Specialty degree	65.25	8.97	
Job description	Nurse	67.14	11.60	0.677
	Doctor	66.03	10.45	
Total experience in job	< 5 years	66.57	13.34	0.941

	5 – 10 years	67.36	9.43	
	> 10 years	66.16	8.55	
	Correlation	0.007		0.950
Experience in ED	< 5 years	66.34	12.27	
	5 – 10 years	66.27	8.80	0.734
	> 10 years	69.46	9.18	
	Correlation	0.089		0.449
How many hours do you work per week in the ED?	30 – 40 hours	69.06	10.31	
	40 – 50 hours	64.13	10.31	0.047
	> 50 hours	61.75	15.89	
Number of reported medical errors in the last 12 months	None	69.56	11.24	
	1 – 5 errors	64.17	10.15	0.045
	6 – 10 errors	52.58	8.67	
	> 10 errors	61.61	5.93	

The correlations between domains and overall scores of patient safety attitudes are shown in the following Table n. 7. The better safety attitude in the domain of teamwork climate domain was significantly correlated with better safety attitude of safety climate ($r = 0.729$, p-value, <0.001), higher job satisfaction ($r = 0.412$, p-value <0.001), perception of management ($r = 0.519$, p-value < 0.001), and better working condition ($r = 0.536$, p-value < 0.001). Moreover, better attitudes in safety climate were significantly correlated with higher job satisfaction ($r = 0.554$, p-value < 0.001), perception of management ($r = 0.552$, p-value < 0.001), and working conditions ($r = 0.516$, p-value < 0.001). On the other hand, higher scores of safety attitude in the domain of job satisfaction

were significantly correlated with less stress recognition (r = -0.230, p-value = 0.049), higher perception of management (r = 0.648, p-value < 0.001) and working condition (r = 0.403, p-value < 0.001).

Significantly less safety attitude in terms of stress recognition was correlated with the higher perception of management (r = -0.228, p-value = 0.034), while the higher perception of management was significantly correlated with better working conditions (r = 0.609, p-value < 0.001). The overall safety attitude is significantly correlated with higher patient safety scores of domains of teamwork climate (r = 0.802, p-value < 0.001), safety climate (r = 0.858, p-value < 0.001), job satisfaction (r = 0.714, p-value < 0.001), and perception of management (r = 0.609, p-value < 0.001).

Table 4.6: Correlations Between Domains and Overall Scores of SAQ

Domain	Teamwork climate		Safety climate		Job satisfaction		Stress recognition		Management perception		Working condition		Overall	
	r	p	r	p	r	p	r	p	r	p	r	p	r	p
Teamwork climate			0.729	<0.001	0.412	<0.001	0.017	0.886	0.519	<0.001	0.536	<0.001	0.802	<0.001
Safety climate	0.729	<0.001			0.554	<0.001	0.040	0.734	0.552	<0.001	0.516	<0.001	0.858	<0.001
Job satisfaction	0.412	<0.001	0.554	<0.001			-0.230	0.049	0.648	<0.001	0.403	<0.001	0.714	<0.001
Stress recognition	0.017	0.886	0.040	0.734	-0.230	0.049			-0.228	0.045	0.034	0.771	0.117	0.322
Management perception	0.519	<0.001	0.552	<0.001	0.648	<0.001	-0.228	0.045			0.609	<0.001	0.778	<0.001
Working condition	0.536	<0.001	0.516	<0.001	0.403	<0.001	0.034	0.771	0.609	<0.001			0.754	<0.001
Overall	0.802	<0.001	0.858	<0.001	0.714	<0.001	0.117	0.322	0.778	<0.001	0.754	<0.001		

Conclusion

The descriptive results showed a sample of nurses (60.8%) and doctors (39.2%) who have a mean age of 30.32 years old, 71.6% are males, 56.8% working in governmental hospitals, 71.6% holding bachelor's degrees, the mean experience of 6.93 years in job and 5.07 in ED, and 54.1% have not reported any medical errors in the last 12 months. The overall patient safety attitude score was moderate (66.70% ± 11.10%),

with 70.3% having a moderate attitude level, with job satisfaction as the highest attitude (72.59% ± 17.95%) and stress recognition (51.89% ± 17.96%) domains.

Significantly higher attitude scores were found among nurses and doctors who work at non-governmental vs governmental hospitals (70.14% vs. 64.09%, p-value = 0.019), working fewer hours per week (p-value = 0.047) and reporting fewer medical errors (p-value = 0.045), which also showed that working at non-governmental hospitals, with fewer hours per week and reporting few errors are significantly predicting higher attitude scores towards patient safety. The overall patient safety attitude score was significantly correlated with higher teamwork climate, safety climate, job satisfaction, perception of management, and working conditions.

Chapter Five

Discussion and Conclusions

The following chapter is a discussion section that provides comments on the current study's methodological approaches and compares its results with those of the previous study reviewed in the literature review chapter.

Regarding the methodological approaches and sample characteristics, the current study recruited a total of 74 nurses and doctors, which is a suitable sample size for a quantitative approach, considering that the study covered only the Northern part of the West Bank. The sample size of the current study was also larger than the calculated sample size of G*Power software, which means that the study has sufficient statistical power, giving the confidence of the results achieving the objectives and testing the study's hypotheses.

The study also included more nurses (60.8%) than doctors (39.2%) in its sample, which is convenient since the number of required nurses is more significant than doctors inside emergency departments, where they are required to perform initial assessments and ongoing monitoring of the patients, as well as the supervision, admission and discharge process. The ratio of nurses to doctors in the current study is similar to a previous study by Amritzer et al. (2021). However, it different from studies like the Palestinian study of Hamdan and Hamra (2017), who recruited a sample of HCPs consisting of 32.0% doctors and 36.3% nurses. The previous Palestinian study also included a sample with 56.3% of them having < 5 years of experience in ED and 25.0% with 5 – 10 years of experience, which is different than in the current study, where 63.5% had < 5 years and 24.3% had 5 – 10 years of experience.

The current study showed that more than half of the nurses and doctors (54.1%) reported no incidences in the last 12 months, with 40.5% reporting between 1 and 5 incidences. This, in general, highlights an underreporting phenomenon, where it can be related to several factors, like fear of blame, lack of time, or that incidences may be too minor to report, in addition to lack of awareness or training in this context. In contrast, a positive interpretation of such findings may related to improvements in safety protocols and fewer adverse events, which may also be interpreted by the finding in the current study that there was a significant difference in safety score according to the number of reported incidences (p-value = 0.045), with significantly better safety attitudes among who reported fewer events. Also, in their study in Palestine, Hamdan and Abu Hamra (2015)stated that high workload and stress in emergency settings significantly contributed to both burnout and low incident reporting rates.

The domain of safety attitude questionnaire with the highest mean score was job satisfaction (mean = 72.59 ± 17.95), which indicates a relatively high level of satisfaction that reflects a positive working environment and intrinsic motivation among the HCPs in Palestinian EDs, as well as being personally content with their roles, despite the variety of challenges. Also, teamwork climate had the second highest mean score (mean = 70.27 ± 14.01), which reflects satisfying levels of teamwork and communication, which are essential in ensuring patient safety and quick decision-making, as well as being linked to smoother handoffs and the ability to work under pressure.

In comparison with the previous Palestinian study by Bottcher et al. (2019), the current study found an overall moderate level of attitude toward safety in the emergency department (mean score = 66.70 ± 11.10), which is similar to the previous study that concluded an overall moderate level of safety attitude. On the other hand, the previous

study only compared nurses and doctors in the safety attitude scores and found that some domains are better among doctors, like professional incompetence as a cause of error and working hours as a cause of errors. In contrast, others were better among nurses, including error reporting confidence and error inevitability, while they did not compare the safety attitudes across sociodemographic factors. Other differences are noticed between both studies, including higher mean age, larger sample size and the different ratios between the number of nurses and doctors, in addition to the conduction of the previous study in a different place (Gaza Strip) and before the COVID-19 pandemic. Yet, the safety attitudes among nurses and doctors in both emergency departments are similar.

Also, the previously mentioned study used a different questionnaire to assess safety attitudes (APSQ-III). In contrast, another Palestinian study (Hamdan, 2013) used the same tool as the current study (SAQ). On the other hand, some differences are found with the current study, where the previous study had a lower female proportion (63% vs. 71.6%), more nurses (80.4% vs. 60.8%), lower bachelor's degree holders (66.7% vs. 71.6%), which may be related to more enrollment in master's programs in the recent years, but have higher experience (60.3% vs 54.0% of 5 years or more). The most noticeable difference is in the percentage of participants who stated they did not report any even in the last 12 months, which was higher in the previous study (71.0% vs 54.1%). The lower proportion of nurses and doctors who did not report events is a positive indicator, where increased reporting may be related to improved reporting culture and the intention to enhance the healthcare situation. Such differences may also interpret the difference in the analytical results between both studies, where the previous study stated no significant differences in safety attitude scores across the sociodemographic factors. In contrast, the current study found significant differences according to participants'

workplace type, number of weekly working hours, and the number of reported events in the last 12 months. In contrast, both studies found significant correlations between the overall scores and all domains of SAQ tool except for stress recognition domain. The difference in study settings (ED vs NICU) may also interpret the differences in sociodemographic characteristics and analytical results between both studies.

In another Palestinian study that used the SAQ tool (Elsous et al., 2017), the sample consisted of nurses only and were recruited from different departments, except EDs. The current study shares a result related to that the highest domain of safety attitude was related to job satisfaction (72.59 vs. 79.5), while the domain of perception of management was significantly higher in the previous study (76.4 vs. 67.68). There was also another difference between both studies, where the current study found no significant difference in safety attitude according to age or experience in a job or ED. In contrast, the previous study found increased safety attitudes with older age and higher experience. The advantage of the current study over the previous one is that it included both governmental and non-governmental hospitals, giving more generalizability to the current study. The current study also found more correlations that are significant between domains, which may indicate improvements in safety culture overtime in Palestine and being related to improved reporting culture as manifested by lower proportions of staff who did not report events in the last 12 months, as well as the cultural and organizational differences between studies' settings, especially after the global impact of COVID-19 pandemic.

Reporting culture is one of the most critical areas that the policymakers inside hospitals should focus on as an essential theme of patient safety culture. This appeared in the current study as the significant relationship between the number of events reported in the last 12 months and the safety attitude score. Also, it appeared in the previous

Palestinian study of Hamdan and Saleem (2018), which highlighted the importance of implementing quality improvement programs for patient safety, where the improved areas of patient safety were focused on the domains of event reporting frequency and teamwork across hospital units, which was also among the highest scored domains of safety attitude in the current study. The previous study can be used as a guide to implement a similar pre-post approach to investigate the significance of improvement in patient safety culture among HCPs and the increase in event reporting. It is worth mentioning that the previous study recruited a larger sample of employees and from various settings, which is also recommended to adopt in future studies.

The improvement in event reporting culture was also noticed in the Saudi study of Alswat et al. (2017)during the 3-year study period. While different safety culture assessment tools were used, the Saudi study used the Palestinian study in comparison. This comparison, which showed better overall improvement in safety culture and event reporting in the Saudi settings, recommended continuous monitoring of patient safety among HCPs and as perceived by the patients. Differences in improvement pattern may primarily be related to a larger sample size and different sociodemographic characteristics in the Saudi study, including more female workforce, older age, and various departments.

The importance of safety culture improvement appears in the role of continuous education efforts inside the hospital, which appears in the previous study of Zabin et al. (2022), conducted in a university hospital. This appeared in that the highest-scored domain of safety culture tools was organizational learning and continuous improvement. Most of the domains in the previous study showed higher scores than the current study's domains, which can be related to different tools and scoring systems. Although, the

second highest domain was related to teamwork climate in both studies, highlighting the importance of improving interdisciplinary teamwork, and work dynamics.

The samples of the current study and the previous Brazilian study by Castilho et al. (2020)are different in many aspects, including having a higher proportion of the female workforce, older ages, larger sample size, and including only nurses in the previous study, and yet the mean score of safety attitude using the shortened version of the same tool (SAQ) was close to the current study (67.6 ± 14.2 vs 66.70 ± 11.10), with the highest domain score of job satisfaction in both studies (78.8 ± 21.8 vs 72.59 ± 17.95). On the other hand, the previous study showed different rankings in the rest of the safety attitude domains, which can be related to differences in sociodemographic and institution-related factors. The previous study showed that safety attitude scores are significantly predicted by night shift working and intention to leave, while the current study found that the safety attitude is significantly predicted by workplace type, work hours, and errors reported.

In the study of Malak et al. (2022) in Jordan, the mean score of SAQ was 70.6%, which was conducted in two accredited hospitals, while in the current study, the mean score was 66.7%, which was insignificantly higher in the accredited hospitals (68.89% vs 66.19%). Despite the higher score in the previous study, the researchers stated that it is an area that needs improvement, that highlighting the efforts accredited hospitals make to enhance patient safety, as one of the first areas of attention in such hospitals is implementing International Patient Safety Goals (IPSGs). While the Jordanian study recruited a larger sample size, they share the same setting (EDs), and it is worth adopting and implementing their recommendations of focusing more on the patient safety culture in the Arabic literature.

The Saudi study of Alzahrani et al. (2018) also used the same tool as in the current study (SAQ). Despite the differences in sociodemographic characteristics, they showed similar results. For example, the Saudi sample had a larger sample size (503 vs. 74), more significant female percentage (79.1% vs. 28.4%), more nurses percentage (72.2% vs. 60.8%), less percentage of staff having 5 – 10 years of experience (24.7% vs. 29.7%), and approximate percentages of staff not reporting any event (55.9% vs 54.1%). Nevertheless, both studies showed that all domains of safety attitude had scores of lower than 75%, with the highest scores in the domains of job satisfaction (75.52% vs 72.59%) and teamwork climate (66.13% vs 70.27%). The lowest scores of the previous study were in the domains of perception of management, which was lower than in the current study (56.93% vs 67.68%), and stress recognition, which was higher than in the current study (58.8% vs 51.89%). The previous study also showed significant differences in the safety attitude scores across different domains between nurses and doctors, and while the current study did not investigate the differences in specific domains between them, it showed no significant differences in the overall scores. Moreover, the previous study showed a significant decrease in safety attitude scores with an increased number of reported events, which is similar to the current study, where the highest scores of safety attitude were found among nurses and doctors with no events reported.

In another Brazilian study that used SAQ (Rigobello et al., 2017), the researchers recruited 125 professionals working in emergency departments, who were mostly experienced with more than 10 years, and found that the overall SAQ score had a mean of 59.7%, compared to 66.70% in the current study, which indicates an overall more positive attitudes towards patient safety in the Palestinian setting. On the other hand, some domains of patient safety had higher mean scores than in the current study, like job

satisfaction (mean = 77.0% vs. 72.59%) and stress recognition (mean = 67.5% vs. 51.89%), while the mean scores of the rest of domains were higher in the current study compared to the Brazilian study, including teamwork climate (mean = 70.27% vs. 66.6%), safety climate (mean = 68.61% vs. 59.3%), perception of management (mean = 67.68% vs. 47.0%) and working conditions (mean = 64.26% vs. 59.3%). Also, the previous study found no significant differences in mean scores of safety attitude across participants' gender, profession or years of experience, which was also found in the current study. the current study is different in that it recruited a larger sample size and tested the differences in safety attitude scores across a broader number of demographic and professional factors, while the previous study recruited a wider variety of job titles, including nurses, doctors, pharmacists, laboratory technicians and more.

In a Swedish pre-post study (Milton et al., 2020), the researchers aimed to compare the safety attitude before and after an organizational intervention, and recruited 112 professionals in 2016 and 121 in 2018. In their study, the domains of safety climate, working conditions and stress recognitions have witnessed significantly better scores in the post-interventional phase. The current study showed more positive attitudes in most of the domains of safety attitude than what was found in the post-interventional phase of the previous study, including safety climate (mean = 68.61% vs. 62.1%), teamwork climate (mean = 70.27% vs. 69.8%), job satisfaction (mean = 72.59% vs. 70.5%), working conditions (mean = 64.26% vs. 55.1%), and perception of management (mean = 67.68% vs. 52.5%), while the domain of stress recognition was higher in the previous study (mean = 72.5% vs. 51.89%). The previous study did not compare the safety attitude scores between physicians, registered nurses and assistant nurses, while the current study did. Also, the current study was conducted on a larger sample size, but using a cross-

sectional design, which is inferior compared to the pre-post design, and is recommended to be replicated in the Palestinian settings.

5.1 Conclusion

The assessment and continuous improvement of patient safety is crucial in all hospital departments, especially in emergency settings, which are characterized by overcrowding and work stress, making them have more errors possibility, and this starts with enhancing and encouraging a positive safety culture and attitude among the HCPs. Accordingly, the current study aimed to investigate the current safety attitude of HCPs who are working in the emergency departments of Northern West Bank – Palestine, using a quantitative, cross-sectional design on a sample of 74 nurses and doctors and utilized the Arabic version of Safety Attitude Questionnaire (SAQ).

In the study sample, 54.1% of the nurses and doctors reported no events in the last 12 months, with 56.8% working 30 – 40 hours per week. The overall SAQ score was 66.70%, which indicates an average safety attitude among the targeted nurses and doctors, with job satisfaction (72.59%) and teamwork climate (70.27%) having the highest scores, and stress recognition (51.89%) and working conditions (64.26%) having the lowest scores. The overall scores of SAQ were significantly higher among nurses and doctors who work in non-governmental than governmental hospitals (70.14% vs. 64.09%), who work fewer hours per week (69.06% for 30 – 40 hours vs. 61.75% for > 50 hours), and who reports less events (69.56% for no reports vs. 52.58% for 6 – 10 errors reported). All mentioned factors significantly predicted the SAQ score. Also, the overall SAQ score was significantly correlated with all domains except for the stress recognition domain.

The study findings were in alignment with several other studies, despite the use of different tools and differences in sociodemographic characteristics. The researcher recommends implementing pre-post studies, with larger samples and broader coverage of hospitals in Palestine, in future research, as the safety culture and quality improvement in this area are underexplored in the Arabic literature.

5.2 Recommendations

Based on the discussion of the study results and comparisons with previous literature, the researcher recommends the following to improve safety attitudes among nurses and doctors of emergency departments:

Recommendations for nurses and doctors

1. Participate in workshops and training sessions that help foster the reporting culture. This culture helps us understand the importance of reporting errors and near-misses, resulting in learning and improving safety rather than assigning blame.
2. Initiate nurses and doctors need to initiate—As the stress recognition domain had the lowest score on the safety attitude questionnaire, nurses and doctors need to promote health support for stress and its impact on patient care and performance, focusing on stress management techniques and resilience training.
3. Because teamwork climate was positively rated in the current study and was also found similar in previous studies, it is recommended that nurses and doctors be encouraged to improve teamwork, using interdisciplinary team-building activities and joint training programs that can further strengthen collaboration and reduce the potential of errors.

Recommendations for Policymakers and Hospital administrations

1. Simplify the process of incident reporting, making it more user-friendly, anonymous, and accessible with the use of a non-punitive environment that encourages open communication about safety issues.
2. Encourage nurses and doctors to participate in continuous education and training sessions, focusing on best practices, reporting, teamwork, and stress management.
3. Adjust workforce and staffing levels by improving resource allocation to ensure manageable work hours and reduce stress in the emergency departments, which considers the overcrowding and stressful environments.
4. Engage in safety promotion programs that provide feedback, support, and staff recognition, which also promotes a supportive and transparent leadership environment.

Recommendations for future research

1. Recruit larger samples and broader coverage of hospitals in West Bank–Palestine, both in governmental and non-governmental sectors, which will improve the understanding of safety attitudes and culture, as well as increase the generalizability.
2. Conduct pre-post study designs that better assess the effectiveness of quality improvement programs and interventions.
3. It is also recommended that future research utilize the qualitative approach, either using qualitative or mixed-method study designs, which will give doctors and nurses more in-depth experience of safety attitudes.

5.3 Limitations

The following points limited the study:

1- The current geopolitical situation that is represented in the Israeli War on the Gaza Strip and the restrictions on transportation in all of Palestine have limited ability to recruit larger sample sizes from more hospitals.

2- The use of cross-sectional design limited the solid statistical power, and decreased the generalizability, although several statistically significant results were found.

3- Nurses and doctors may overstate their positive attitudes towards safety or underreport stress and workload concerns, which are related to relying on self-reported data.

References

Ali, N. J., McWilliams, J. M., Epstein, S. K., & Smulowitz, P. B. (2017). Emergency Department Involvement in Accountable Care Organizations in Massachusetts: A Survey Study. *Ann Emerg Med*, *70*(5), 615-620.e612. https://doi.org/10.1016/j.annemergmed.2017.06.040

Alimenti, D., Buydos, S., Cunliffe, L., & Hunt, A. (2019). Improving perceptions of patient safety through standardizing handoffs from the emergency department to the inpatient setting: a systematic review. *Journal of the American Association of Nurse Practitioners*, *31*(6), 354-363. https://doi.org/10.1097/jxx.0000000000000160

Alsabri, M., Boudi, Z., Lauque, D., Dias, R. D., Whelan, J. S., Östlundh, L., Alinier, G., Onyeji, C., Michel, P., Liu, S. W., Jr Camargo, C. A., Lindner, T., Slagman, A., Bates, D. W., Tazarourte, K., Singer, S. J., Toussi, A., Grossman, S., & Bellou, A. (2022). Impact of Teamwork and Communication Training Interventions on Safety Culture and Patient Safety in Emergency Departments: A Systematic Review. *Journal of Patient Safety*, *18*(1), e351-e361. https://doi.org/10.1097/pts.0000000000000782

Alswat, K., Abdalla, R. A. M., Titi, M. A., Bakash, M., Mehmood, F., Zubairi, B., Jamal, D., & El-Jardali, F. (2017). Improving patient safety culture in Saudi Arabia (2012–2015): trending, improvement and benchmarking. *BMC Health Services Research*, *17*(1), 516. https://doi.org/10.1186/s12913-017-2461-3

Alzahrani, N., Jones, R., & Abdel-Latif, M. E. (2018). Attitudes of doctors and nurses toward patient safety within emergency departments of two Saudi Arabian hospitals. *BMC Health Services Research*, *18*(1), 736. https://doi.org/10.1186/s12913-018-3542-7

Alzahrani, N., Jones, R., & Abdel-Latif, M. E. (2019). Attitudes of Doctors and Nurses toward Patient Safety within Emergency Departments of a Saudi Arabian Hospital: A Qualitative Study. *Healthcare (Basel)*, *7*(1). https://doi.org/10.3390/healthcare7010044

Amaniyan, S., Faldaas, B. O., Logan, P. A., & Vaismoradi, M. (2020). Learning from Patient Safety Incidents in the Emergency Department: A Systematic Review. *The Journal of Emergency Medicine*, *58*(2), 234-244. https://doi.org/https://doi.org/10.1016/j.jemermed.2019.11.015

Amritzer, M. A., Muntlin, Å., Berg, L., & Göransson, K. E. (2021). Nursing staff ratio and skill mix in Swedish emergency departments: A national cross-sectional benchmark study. *Journal of nursing management*.

Aron, D. C., & Headrick, L. (2002). Educating physicians prepared to improve care and safety is no accident: it requires a systematic approach. *Quality and Safety in Health Care*, *11*, 168 - 173.

Bochatay, N., Muller-Juge, V., Scherer, F., Cottin, G., Cullati, S., Blondon, K. S., Hudelson, P., Maître, F., Vu, N. V., Savoldelli, G. L., & Nendaz, M. R. (2017). Are role perceptions of residents and nurses translated into action? *BMC Med Educ*, *17*(1), 138. https://doi.org/10.1186/s12909-017-0976-2

Bottcher, B., Abu-El-Noor, N., Abuowda, Y., Alfaqawi, M., Alaloul, E., El-Hout, S., Al-Najjar, I., & Abu-El-Noor, M. (2019). Attitudes of doctors and nurses to patient safety and errors in medical practice in the Gaza-Strip: a cross-sectional study. *BMJ Open*, *9*(8), e026788. https://doi.org/10.1136/bmjopen-2018-026788

Castilho, D. E. C., Silva, A., Gimenes, F. R. E., Nunes, R. L. S., Pires, A., & Bernardes, C. A. (2020). Factors related to the patient safety climate in an emergency hospital. *Rev Lat Am Enfermagem*, *28*, e3273. https://doi.org/10.1590/1518-8345.3353.3273

Cebeci, F. (2010). The role of emergency nurses in patient safety: Review. *Turkiye Klinikleri J Nurs*, *2*, 57-63.

Durgun, H., & Kaya, H. (2018). The attitudes of emergency department nurses towards patient safety. *Int Emerg Nurs*, *40*, 29-32. https://doi.org/10.1016/j.ienj.2017.11.001

Eagly, A. H., & Chaiken, S. (1993). *The psychology of attitudes*. Harcourt Brace Jovanovich College Publishers.

Elmontsri, M., Almashrafi, A., Banarsee, R., & Majeed, A. (2017). Status of patient safety culture in Arab countries: a systematic review. *BMJ Open*, *7*(2), e013487. https://doi.org/10.1136/bmjopen-2016-013487

Elsous, A., Akbarisari, A., Rashidian, A., Aljeesh, Y., Radwan, M., & Abu Zaydeh, H. (2017). Psychometric Properties of an Arabic Safety Attitude Questionnaire

(Short Form 2006). *Oman Med J*, *32*(2), 115-123. https://doi.org/10.5001/omj.2017.21

Eriksson, J., Gellerstedt, L., Hillerås, P., & Craftman, Åsa G. (2018). Registered nurses' perceptions of safe care in overcrowded emergency departments. *Journal of Clinical Nursing*, *27*(5-6), e1061-e1067. https://doi.org/https://doi.org/10.1111/jocn.14143

Fekonja, Z., Kmetec, S., Fekonja, U., Mlinar Reljić, N., Pajnkihar, M., & Strnad, M. (2023). Factors contributing to patient safety during triage process in the emergency department: A systematic review. *J Clin Nurs*, *32*(17-18), 5461-5477. https://doi.org/10.1111/jocn.16622

Forero, R., McCarthy, S., & Hillman, K. (2011). Access block and emergency department overcrowding. *Critical Care*, *15*(2), 216. https://doi.org/10.1186/cc9998

Gandhi, T. K., Kaplan, G. S., Leape, L., Berwick, D. M., Edgman-Levitan, S., Edmondson, A., Meyer, G. S., Michaels, D., Morath, J. M., Vincent, C., & Wachter, R. (2018). Transforming concepts in patient safety: a progress report. *BMJ Quality & Safety*, *27*(12), 1019-1026. https://doi.org/10.1136/bmjqs-2017-007756

Gawronski, B. (2007). Attitudes can be measured! But what is an attitude? *Social Cognition*, *25*(5), 573-581.

Graban, M. (2018). *Lean hospitals: improving quality, patient safety, and employee engagement*. Productivity Press.

Greenwald, A. G. (2014). Why attitudes are important: defining attitude. *Attitude structure and function*, *429*.

Hamdan, M. (2013). Measuring safety culture in Palestinian neonatal intensive care units using the Safety Attitudes Questionnaire. *J Crit Care*, *28*(5), 886.e887-814. https://doi.org/10.1016/j.jcrc.2013.06.002

Hamdan, M., & Abu Hamra, A. a. (2015). Workplace violence towards workers in the emergency departments of Palestinian hospitals: a cross-sectional study. *Human Resources for Health*, *13*.

Hamdan, M., & Saleem, A. A. o. (2018). Changes in Patient Safety Culture in Palestinian Public Hospitals: Impact of Quality and Patient Safety Initiatives and Programs. *Journal of Patient Safety*, *14*(3), e67-e73. https://doi.org/10.1097/pts.0000000000000522

Jepson, Z. K., Darling, C. E., Kotkowski, K. A., Bird, S. B., Arce, M. W., Volturo, G. A., & Reznek, M. A. (2014). Emergency department patient safety incident characterization: an observational analysis of the findings of a standardized peer review process. *BMC Emerg Med*, *14*, 20. https://doi.org/10.1186/1471-227x-14-20

Källberg, A.-S., Ehrenberg, A., Florin, J., Östergren, J., & Göransson, K. E. (2017). Physicians' and nurses' perceptions of patient safety risks in the emergency department. *International Emergency Nursing*, *33*, 14-19. https://doi.org/https://doi.org/10.1016/j.ienj.2017.01.002

Kesmodel, U. S. (2018). Cross-sectional studies - what are they good for? *Acta Obstet Gynecol Scand*, *97*(4), 388-393. https://doi.org/10.1111/aogs.13331

Kohn, L. T., Corrigan, J. M., & Donaldson, M. S. (2000). To Err is Human: Building a Safer Health System. In. National Academies Press (US)

 https://doi.org/10.17226/9728

Lawati, M. H. A. L., Dennis, S., Short, S. D., & Abdulhadi, N. N. (2018). Patient safety and safety culture in primary health care: a systematic review. *BMC Family Practice*, *19*(1), 104. https://doi.org/10.1186/s12875-018-0793-7

Leape, L. L., & Berwick, D. M. (2005). Five years after To Err Is Human: what have we learned? *Jama*, *293*(19), 2384-2390. https://doi.org/10.1001/jama.293.19.2384

Liu, X., Zheng, J., Liu, K., Baggs, J. G., Liu, J., Wu, Y., & You, L. (2018). Hospital nursing organizational factors, nursing care left undone, and nurse burnout as predictors of patient safety: A structural equation modeling analysis. *International Journal of Nursing Studies*, *86*, 82-89. https://doi.org/https://doi.org/10.1016/j.ijnurstu.2018.05.005

Mahmoud, A. (2013). *Health Challenges in Palestine* https://www.sciencediplomacy.org/perspective/2013/health-challenges-in-palestine

Malak, M. Z., Salouk, J., Al-Shawawreh, R., Al-Kamiseh, H., & Ayed, A. (2022). Perceptions of patient safety culture among emergency room nurses in Jordanian accredited hospitals. *J Nurs Manag*, *30*(7), 3131-3138. https://doi.org/10.1111/jonm.13729

Malinowska-Lipień, I., Brzyski, P., Gabryś, T., Gniadek, A., Kózka, M., Kawalec, P., Brzostek, T., & Squires, A. (2021). Cultural adaptation of the Safety Attitudes Questionnaire – Short Form (SAQ-SF) in Poland. *PLOS ONE*, *16*(2), e0246340. https://doi.org/10.1371/journal.pone.0246340

Milton, J., Chaboyer, W., Åberg, N. D., Erichsen Andersson, A., & Oxelmark, L. (2020). Safety attitudes and working climate after organizational change in a major emergency department in Sweden. *Int Emerg Nurs*, *53*, 100830. https://doi.org/10.1016/j.ienj.2020.100830

Ministry of Health. (2023). *Health Annual Report 2022* https://site.moh.ps/Content/Books/7B3a7X1pBCWOEINRCY7q9EWTDQUqfaw9pPoeWDZ6OsSLnxZqVGBuyY_rDZGco6Zb5437Fqi2OJDNvtmezzUdHQ79UmhKgrDjxmrzxFxoI5Zeu.pdf

Ningrum, E., Evans, S., & Soh, S. E. (2019). Validation of the Indonesian version of the Safety Attitudes Questionnaire: A Rasch analysis. *PLOS ONE*, *14*(4), e0215128. https://doi.org/10.1371/journal.pone.0215128

Palestinian Central Bureau of Statistics. (2023). 2023 كتاب فلسطين الإحصائي السنوي، https://www.pcbs.gov.ps/Downloads/book2688.pdf

Rashed, A., & Hamdan, M. (2019). Physicians' and Nurses' Perceptions of and Attitudes Toward Incident Reporting in Palestinian Hospitals. *Journal of Patient Safety*, *15*(3), 212-217. https://doi.org/10.1097/pts.0000000000000218

Reis, C. T., Paiva, S. G., & Sousa, P. (2018). The patient safety culture: a systematic review by characteristics of Hospital Survey on Patient Safety Culture dimensions. *International Journal for Quality in Health Care*, *30*(9), 660-677. https://doi.org/10.1093/intqhc/mzy080

Ricklin, M. E., Hess, F., & Hautz, W. E. (2019). Patient safety culture in a university hospital emergency department in Switzerland - a survey study. *GMS J Med Educ*, *36*(2), Doc14. https://doi.org/10.3205/zma001222

Rigobello, M. C. G., Carvalho, R. E. F. L. d., Guerreiro, J. M., Motta, A. P. G., Atila, E., & Gimenes, F. R. E. (2017). The perception of the patient safety climate by professionals of the emergency department. *International Emergency Nursing*, *33*, 1-6. https://doi.org/https://doi.org/10.1016/j.ienj.2017.03.003

Robinson, K. (2002). "To err is human..." patient safety initiatives for EMS. *J Emerg Nurs*, *28*(1), 47-48. https://doi.org/10.1067/men.2002.121966

Sedgwick, P. (2013). Convenience sampling. *BMJ : British Medical Journal*, *347*, f6304. https://doi.org/10.1136/bmj.f6304

Sexton, J. B., Helmreich, R. L., Neilands, T. B., Rowan, K., Vella, K., Boyden, J., Roberts, P. R., & Thomas, E. J. (2006). The Safety Attitudes Questionnaire: psychometric properties, benchmarking data, and emerging research. *BMC Health Services Research*, *6*(1), 44. https://doi.org/10.1186/1472-6963-6-44

Sexton, J. B., Thomas, E. J., & Helmreich, R. L. (2000). Error, stress, and teamwork in medicine and aviation: cross sectional surveys. *Bmj*, *320*(7237), 745-749. https://doi.org/10.1136/bmj.320.7237.745

Siddiqi, S., Elasady, R., Khorshid, I., Fortune, T., Leotsakos, A., Letaief, M., Qsoos, S., Aman, R., Mandhari, A., Sahel, A., El-Tehewy, M., & Abdellatif, A. (2012). Patient Safety Friendly Hospital Initiative: from evidence to action in seven developing country hospitals. *Int J Qual Health Care*, *24*(2), 144-151. https://doi.org/10.1093/intqhc/mzr090

Skutezky, T., Small, S. S., Peddie, D., Balka, E., & Hohl, C. M. (2022). Beliefs and perceptions of patient safety event reporting in a Canadian Emergency Department: a qualitative study. *Canadian Journal of Emergency Medicine*, *24*(8), 867-875. https://doi.org/10.1007/s43678-022-00400-2

Swinton, P., Corfield, A. R., Moultrie, C., Percival, D., Proctor, J., Sinclair, N., & Perkins, Z. B. (2018). Impact of drug and equipment preparation on pre-hospital emergency Anaesthesia (PHEA) procedural time, error rate and cognitive load. *Scandinavian journal of trauma, resuscitation and emergency medicine*, *26*(1), 82. Retrieved 2018/09//, from https://doi.org/10.1186/s13049-018-0549-3

Walton, M. M., & Elliott, S. L. (2006). Improving safety and quality: how can education help? *Med J Aust*, *184*(S10), S60-64. https://doi.org/10.5694/j.1326-5377.2006.tb00365.x

Wang, X., & Cheng, Z. (2020). Cross-Sectional Studies: Strengths, Weaknesses, and Recommendations. *Chest*, *158*(1s), S65-s71. https://doi.org/10.1016/j.chest.2020.03.012

WHO. (2022). *Medication Without Harm*. World Health Organization. https://www.who.int/initiatives/medication-without-harm

World Health Organization. (2021). *Patient Safety*. https://www.who.int/news-room/fact-sheets/detail/patient-safety

Zabin, L. M., Zaitoun, R. S. A., & Abdullah, A. A. (2022). Patient safety culture in Palestine: university hospital nurses' perspectives. *BMC Nursing*, *21*(1), 204. https://doi.org/10.1186/s12912-022-00987-y

Appendices

Appendix (1) Study Questionnaire – English version

Dear colleague,

Thank you for taking the time to participate in this study. Your input is invaluable to the success of this research. Please note that your participation is entirely voluntary, and you may choose to withdraw at any time without any consequences. This questionnaire is designed to collect data anonymously, ensuring that your responses cannot be traced back to you. All information you provide will be treated with the utmost confidentiality and used solely for research purposes. The results of this study will be reported in aggregate form, ensuring that no individual responses are identifiable. By proceeding with this questionnaire, you indicate your informed consent to participate. Thank you for your valuable contribution.

Part One: Demographic data

1. Gender:

☐ Male ☐ Female

2. Age:

☐ 22-25 ☐ 26-30 ☐ More than 30

3. Workplace:

☐ Governmental hospital ☐ Private hospital

Please write the name of the hospital where you work……..

4. The hospital you work in has JCI accreditation:

☐ Yes ☐ No

5. What is the highest degree learned?

☐ Diploma ☐ Bachelor ☐ Graduate degree

6. Job description:

☐ Doctor ☐ Nurse

7. How many years of total experience?

☐ Less than 1 year ☐ 1-4 years ☐ 5-8 years ☐ More than 9 years

8. Number of years of experience in the emergency department:

☐ Less than 1 year ☐ 1-4 years ☐ 5-8 years ☐ More than 9 years

9. On average, how many hours a week do you work in the ER?

☐ 30-40 hours ☐ 40-50 hours ☐ More than 50 hours

10. How many medical errors you have reported in the last 12 months:

☐ No Errors ☐ 1-5 Errors ☐ 6-10 Errors ☐ More than 10 Errors

Part Two: Safety Attitude Questionnaire (SAQ)

Please choose one of these options to answer the questionnaire: (Disagree Strongly, Disagree Slightly, Neutral, Agree Slightly, Agree Strongly)

Safety attitude questionnaire subscale		**Disagree Strongly**	**Disagree Slightly**	**Neutral**	**Agree Slightly**	**Agree Strongly**
Teamwork climate	1. Nurse input is well received in this c area.					
	2. In this clinical area, it is difficult to s if l perceive a problem with patient care.					
	3. Disagreements in this clinical area are resolved appropriately (i.e., not who is right, but what is best for the patient).					
	4. I have the support I need from other personnel to care for patients					
	5. It is easy for personnel here to ask questions when there is something that they do not understand					
	6. The physicians and nurses here work together as a well-coordinated team.					

Safety climate	7. I would feel safe being treated here a patient.					
	8. Medical errors are handled appropriately in this clinical area.					
	9. I know the proper channels to direct questions regarding patient safety in this clinical area.					
	10. I receive appropriate feedback about my performance.					
	11. In this clinical area, it is difficult to discuss errors.					
	12.1 am encouraged by my colleagues to report any patient safety concerns I have.					
	13. The culture in this clinical area makes it easy to learn from others' errors.					
Job satisfaction	14. I like my job					
	15. Working here is like being part of a large family.					
	16. This is an excellent place to work.					
	17. I am proud to work in this clinical area.					

	18. Morale in this clinical area is high.					
Stress recognition	19. When my workload becomes excessive, my performance is impaired.					
	20. I am less effective at work when fatigued.					
	21. I am more likely to make errors in tense or hostile situations.					
	22. Fatigue impairs my performance during emergencies (e.g., emergency resuscitation, seizure).					
Perceptic of manag	23. Management supports my daily efforts.					
	24. Management does not knowingly compromise patient safety.					
	25. Management is doing a good job.					
	26. Problem personnel are dealt with constructively by our.					
	27. I get adequate, timely info about events that might affect my work.					
Working condition	28. The levels of staffing in this clinical area are					

	sufficient to handle the number of patients.					
	29. This hospital does a good job of training new personnel.					
	30. All the necessary information for diagnostic and therapeutic decisions are routinely available to me.					
	31. Trainees in my discipline are adequately supervised.					

Appendix (2) Study Questionnaire – Arabic Version

الزميل العزيز / الزميلة العزيزة

نشكر لكم تخصيص وقتكم للمشاركة في هذه الدراسة، حيث يُعدّ رأيكم ومساهمتكم جزءًا أساسيًا من نجاح البحث. نود التنويه بأن المشاركة في هذه الدراسة اختيارية تمامًا، ويمكنكم الانسحاب في أي وقت دون أي تبعات. تم تصميم هذا الاستبيان لجمع البيانات بشكل مجهول، مما يضمن عدم إمكانية تتبع إجاباتكم أو ربطها بهويتكم. سيتم التعامل مع جميع المعلومات التي تقدمونها بسرية تامة واستخدامها فقط لأغراض البحث العلمي. وستُعرض نتائج الدراسة بشكل مجمل دون الإشارة إلى أي فرد أو مشارك بعينه.

بالمتابعة وإكمال هذا الاستبيان، فإنكم تقرّون بموافقتكم المستنيرة على المشاركة. نشكركم جزيل الشكر على مساهمتكم القيمة.

القسم الأول: المعلومات الديموغرافية

السؤال	**الخيارات**		
الجنس	ذكر		
	أنثى		
العمر (بالسنوات)			
مكان العمل	مستشفى حكومي		
	مستشفى خاص		
اسم مكان العمل			
هل تعمل في مستشفى حاصل على الاعتماد الدولي JCI؟	نعم	لا	
ما هي أعلى درجة علمية حصلت عليها	الدبلوم	البكالوريوس	
	الدراسات العليا		
المسمى الوظيفي	ممرض	طبيب	
ما هي عدد سنوات خبرتك الكلية؟			
ما هي عدد سنوات خبرتك في قسم الطوارئ؟			

ما هو عدد الساعات التي تناوبها في الأسبوع في قسم الطوارئ؟	30 – 40 ساعة	40 – 50 ساعة
	أكثر من 50 ساعة	
ما هو عدد الأخطاء التي قمت بتوثيقها خلال 12 شهرا الماضية؟	لا أخطاء	1 – 5 أخطاء
	6 – 10 أخطاء	أكثر من 10 أخطاء

القسم الثاني: استبيان مواقف السلامة (SAQ)

يرجى الإجابة عن الجمل التالية باختيار مدى موافقتك عليها (موافق بشدة، موافق، محايد، معارض، معارض بشدة)

الجمل	موافق بشدة	موافق	محايد	معارض	معارض بشدة
مناخ العمل الجماعي					
1. مساهمات الممرضين تلقى قبولًا جيدًا في هذا القسم السريري.					
2. في هذا القسم السريري، من الصعب التعبير عن المشاكل المتعلقة برعاية المرضى.					
3. يتم حل الخلافات في هذا القسم السريري بشكل مناسب (أي ليس من هو الصحيح بل ما هو الأفضل للمريض.)					
4. لدي الدعم الذي أحتاجه من الآخرين لرعاية المرضى.					
5. من السهل على الموظفين هنا طرح الأسئلة عندما يكون هناك شيء لا يفهمونه.					
6. الأطباء والممرضات هنا يعملون معًا كفريق منسق جيدًا.					

مناخ السلامة						
7. سأشعر بالأمان إذا تم علاجي هنا كمريض.						
8. يتم التعامل مع الأخطاء الطبية بشكل مناسب في هذا القسم السريري.						
9. أعرف القنوات المناسبة لتوجيه الأسئلة المتعلقة بسلامة المرضى في هذا القسم السريري.						
10. أتلقى تغذية راجعة مناسبة حول أدائي.						
11. في هذا القسم السريري، من الصعب مناقشة الأخطاء.						
12. يشجعني زملائي على الإبلاغ عن أي مخاوف تتعلق بسلامة المرضى قد تكون لدي.						
13. الثقافة في هذا القسم السريري تجعل من السهل التعلم من أخطاء الآخرين.						
الرضا الوظيفي						
14. أحب عملي.						
15. العمل هنا يشبه أن تكون جزءًا من عائلة كبيرة.						
16. هذا مكان جيد للعمل.						
17. أنا فخور بالعمل في هذا القسم السريري.						
18. المعنويات في هذا القسم السريري مرتفعة.						
التعرف على التوتر						
19. عندما يصبح عبء العمل لدي زائدًا، يتأثر أدائي.						
20. أكون أقل فعالية في العمل عندما أكون متعبًا.						
21. من المرجح أن أرتكب أخطاء في المواقف المتوترة أو العدائية.						
22. التعب يؤثر على أدائي أثناء حالات الطوارئ (مثل الإنعاش الطارئ أو النوبات.)						
تصور الإدارة						
23. الإدارة تدعم جهودي اليومية.						
24. الإدارة لا تضر بسلامة المرضى عن علم.						
25. الإدارة تقوم بعمل جيد.						

26. يتم التعامل مع الأفراد الذين يسببون مشاكل بشكل بنّاء من قبل إدارتنا.						
27. أتلقى معلومات كافية في الوقت المناسب حول الأحداث التي قد تؤثر على عملي.						
ظروف العمل						
28. مستويات التوظيف في هذا القسم السريري كافية للتعامل مع عدد المرضى.						
29. يقوم هذا المستشفى بعمل جيد في تدريب الموظفين الجدد.						
30. تتوفر لي جميع المعلومات اللازمة لاتخاذ قرارات تشخيصية وعلاجية بشكل روتيني.						
31. المتدربون في تخصصي يحصلون على إشراف كافٍ.						

Appendix (3) Informed Consent – English

I am Aseel Ali, a student at the Graduate School of the Arab American University. I would like to request your consent to participate in providing information through the attached questionnaire. This information will be analyzed for the study intended as part of my graduation project at the university. The aim of this project is to understand the attitudes of doctors and nurses towards patient safety within emergency departments in public and private hospitals in the Northern West Bank, Palestine.

All the information provided will remain confidential and will be handled with high professionalism to ensure the privacy of personal and non-personal data. No participant names will be requested, and participants will be identified only by numerical codes. Furthermore, the information will only be accessible to the researcher and will be used solely for the purposes of this project. Participants may withdraw from the study at any time they wish.

This questionnaire is adapted from the globally recognized SAQ-SF scales.

The questionnaire consists of four pages, divided into two parts, with a total of 41 questions in English.

Appendix (4) Informed Consent – Arabic

انا الطالبة اســـيل العلي من كلية الدراســـات العليا في الجامعة العربية الأمريكية، اود أخذ الموافقة منكم للمشـاركة في جمع معلومات عن طريق الاستبانة المرفقة, هذه المعلومات سيتم تحليلها من اجل الدراسـة المزمع تنفيذها ضـمن مشـروع التخرج في الجامعة حيث يهدف هذا المشـروع إلى معرفة اتجاهات الأطباء والممرضـين تجاه سلامة المرضى داخل أقسام الطوارئ في مستشفيات الضفة الغربية الحكومية و الخاصة في فلسطين ،

جميع المعلومات التي يدلي بها هنا سـتبقى طي الكتمان وسـيتم التعامل معها بمهنية عالية تضـمن سـرية البيانات الشـخصـية وغير الشـخصـية، إذ لن يتم السـؤال عن اسم المشـارك في البحث والتعامل معهم بأرقام بيانية فقط، كما وأن المعلومات لن تصـل إلا للباحث فقط ولن تسـتخدم إلا لأغراض خاصـة بالمشـروع، ويمكن انسـحاب المشارك من المشروع في أي وقت يريده.

هذه الاستبانة مقتبسة عن مقياس .SAQ-SF scales المعتمد عالميا.

هذه الاستبانة مكونة اربع صفحات مقسمة على جزئين، ومجموع 41 سؤالا باللغة الانجليزية

Appendix (5) IRB Form

Arab American University
Institutional Review Board - Ramallah

الجامعة العربية الأمريكية
مجلس اخلاقيات البحث العلمي – رام الله

IRB Approval Letter

Study Title: "Attitudes of Doctors and Nurses toward Patient Safety within Emergency Departments in Palestine West Bank Governmental and Privet Hospitals".

Submitted by: Aseel Jamal Mahmoud Ali

Date received: 20th February 2024

Date reviewed: 25th February 2024

Date approved: 18th April 2024

Your Study titled "**Attitudes of Doctors and Nurses toward Patient Safety within Emergency Departments in Palestine West Bank Governmental and Privet Hospitals**" with the code number "**R-2024/A/47/N**" was reviewed by the Arab American University Institutional Review Board - Ramallah and it was approved on the 18th of April 2024.

Sajed Ghawadra, PhD
IRB-R Chairman
Arab American University of Palestine

الجامعة العربية الأمريكية - فلسطين
مجلس اخلاقيات البحث العلمي - رام الله
IRB-R
ARAB AMERICAN UNIVERSITY-PALESTINE
INSTITUTIONAL REVIEW BOARD - RAMALLAH

General Conditions:

1. Valid for 6 months from the date of approval.
2. It is important to inform the IRB-R with any modification of the approved study protocol.
3. The Bord appreciates a copy of the research when accomplished.

Appendix (6) Facilitation paper for governmental hospitals

State of Palestine
Ministry of Health
Education in Health and Scientific
Research Unit

دولة فلسطين
وزارة الصحة
وحدة التعليم الصحي
والبحث العلمي

Ref.: .....
Date:.....

الرقم: ٢٦٤/١١١٤/ ٢٠٢٤ ج
التاريخ: ١٥/٤/٢٠٢٤ ج

عطوفة الوكيل المساعد لشؤون المستشفيات والطوارئ المحترم،،،

تحية واحترام،،

الموضـــوع: تسهيل مهمة بحث

يرجى تسهيل مهمة الطالبة: أسيل جمال محمود علي- ماجستير ادارة الجودة في المؤسسات الصحية/ الجامعة العربية الامريكية، في عمل بحث بعنوان:

"Attitudes of Doctors and Nurses towards Patient Safety within Emergency Departments in Governmental and Private Hospitals in north West Bank – Palestine"

من خلال السماح للطالبة بجمع معلومات عن طريق توزيع استبانة، وذلك في:

- مستشفى رفيديا - مستشفى الوطني - مستشفى طوباس - مستشفى طولكرم
- مستشفى جنين - مستشفى قلقيلية

مع العلم ان البحث تحت اشراف د. يوسف المنيمي.

على ان يتم الالتزام باساليب واخلاقيات البحث العلمي، وعدم التعرض للمعلومات التعريفية للمشاركين .

على ان يتم تزويد الوزارة بنسخة PDF من نتائج البحث، التعهد بعدم النشر لحين الحصول على موافقة الوزارة على نتائج البحث.

مع الاحترام،،

د. عبد الله القواسمي
رئيس وحدة التعليم الصحي والبحث العلمي

نسخة: عميد كلية الدراسات العليا المحترمة /الجامعة العربية الامريكية

Appendix (7) Facilitation paper for Ibn-Sina Specialized Hospital

IBN SINA SPECIALIZED HOSPITAL
مستشفى ابن سينا التخصصي

ISH Research Application Form for Ethical Approval
(Non-Experimental Research)

Instructions :

1) Submit one (1) original and (1) copy of the research proposal to Head of Ethics Committee.
2) Instructions to fill the application form
   a) The application must be clearly legible
   b) All sections of the application form must be completed
   c) Typing or block capitals are recommended
   d)Write "Not Applicable" wherever appropriate

1) Project Title :

Full Title

Attitude of Doctor and nurses toward patient safty in emergency Department-

Short Title

2) Type of the Project :

☐ Drug Study ☐ Device Study (attach device form) ☐ Chart/Records Review
☐ Biomedical Research ☑ Health Related Research ☐ Community-Based
☐ Other: _____

3) Investigator Information:

Name: Aseel Jamal Ali
University/Institution: AAUP
Email: Aseel.Ali@najah.edu
Contact Number: 0597264274
Expected start date: 14.8.2024
Expected completion date: 30.9.2024

4) Attached Needed

Investigator CV	☑ Yes	☑ No
Study Proposal	☑ Yes	☐ No
Consent Form	☑ Yes	☐ No
Data Collection Tools	☑ Yes	☐ No
Informed Consent (Arabic & English)	☑ Yes	☐ No

5) Information Confidentiality

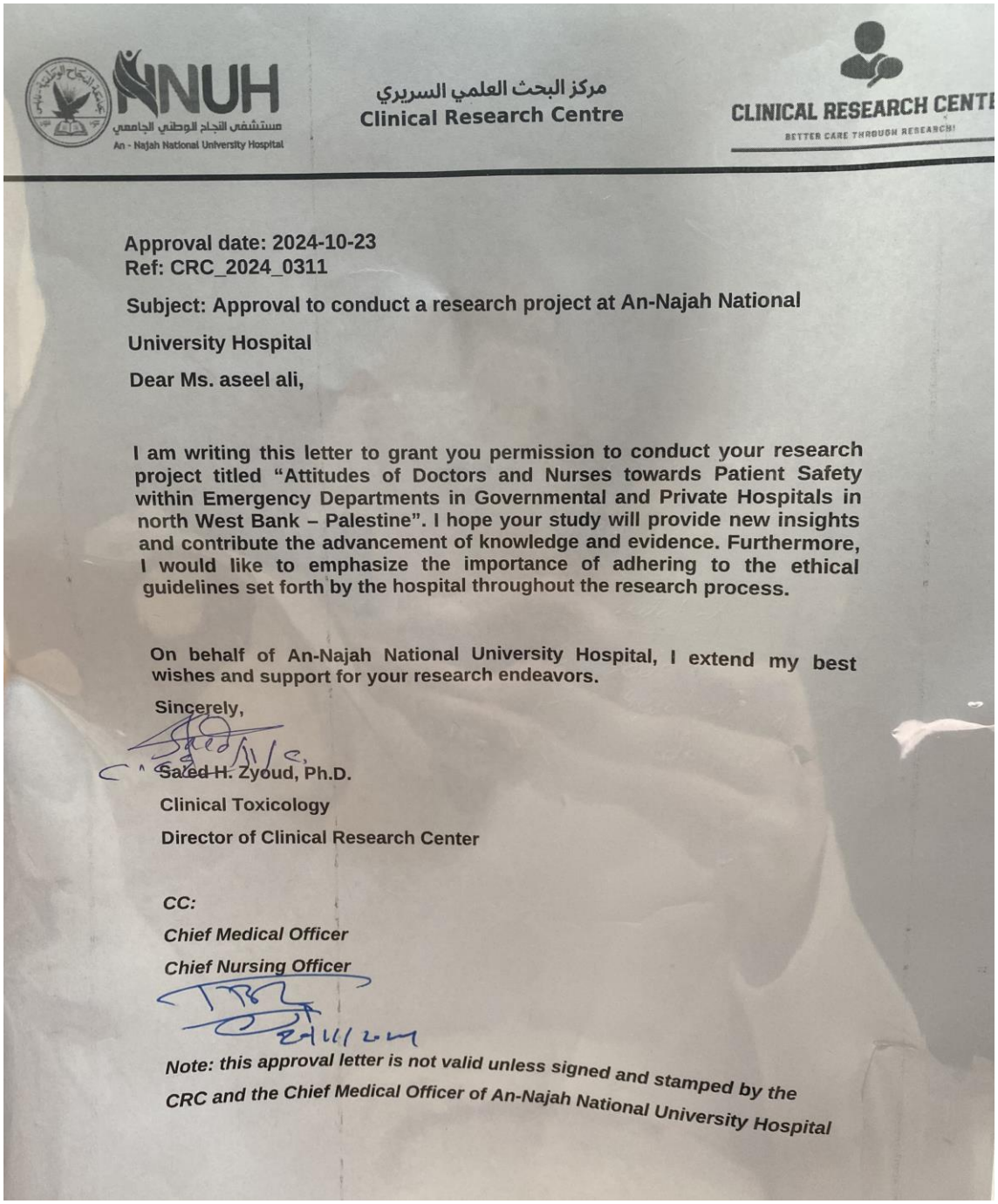
Your signature indicates that you agree to abide by all policies, procedures, regulations and laws governing the ethical conduct of the non-human research. And I agree to keep the data that will be collected from the hospital secured.

Investigator Signature: Aseel Ali

- For Non Experimental Research only

Code:GLD.12.2/1	Type: NC / 01	Issue No.: 01/01	Issue Date: 20/06/2021

Appendix (8) Approval from Clinical Research Center at An-Najah National University Hospital



مستشفى النجاح الوطني الجامعي
An - Najah National University Hospital

مركز البحث العلمي السريري
Clinical Research Centre

CLINICAL RESEARCH CENTE
BETTER CARE THROUGH RESEARCH!

Approval date: 2024-10-23
Ref: CRC_2024_0311

Subject: Approval to conduct a research project at An-Najah National University Hospital

Dear Ms. aseel ali,

I am writing this letter to grant you permission to conduct your research project titled "Attitudes of Doctors and Nurses towards Patient Safety within Emergency Departments in Governmental and Private Hospitals in north West Bank – Palestine". I hope your study will provide new insights and contribute the advancement of knowledge and evidence. Furthermore, I would like to emphasize the importance of adhering to the ethical guidelines set forth by the hospital throughout the research process.

On behalf of An-Najah National University Hospital, I extend my best wishes and support for your research endeavors.

Sincerely,

Saed H. Zyoud, Ph.D.
Clinical Toxicology
Director of Clinical Research Center

CC:
Chief Medical Officer
Chief Nursing Officer

Note: this approval letter is not valid unless signed and stamped by the CRC and the Chief Medical Officer of An-Najah National University Hospital

الملخص

مقدمة: وضعت العديد من المبادرات والمنظمات مبادئ توجيهية لإعطاء سلامة المرضى أولوية قصوى في رعايتهم، وأصبح ذلك متطلبًا إلزاميًا لكل مستشفى في عملية اعتماده. كما يُطلب من مقدمي الرعاية الصحية تحقيق مستوى مُرضٍ من مواقف السلامة تجاه المرضى، وقد وُجد أن العديد من العوامل تؤثر على هذه المستويات، بما في ذلك العوامل الاجتماعية والديموغرافية وعوامل العمل.

الهدف: هدفت الدراسة الحالية إلى دراسة مستويات مواقف الأطباء والممرضين الفلسطينيين العاملين في أقسام الطوارئ في مستشفيات شمال الضفة الغربية، بالإضافة إلى العوامل الأكثر شيوعًا المتعلقة بمواقف السلامة.

الطريقة: استُخدمت نسخة ذاتية التطبيق من استبيان سلوكيات السلامة (SAQ) لتقييم سلوكيات المرضى تجاه السلامة لدى عينة عشوائية من أطباء وممرضي الطوارئ في المستشفيات الخاصة والحكومية في شمال الضفة الغربية - فلسطين. وتضمن الاستبيان 31 بندًا لتقييم مجالات مناخ العمل الجماعي، ومناخ السلامة، والرضا الوظيفي، وإدراك الضغوط، وإدراك الإدارة، وظروف العمل. حُللت البيانات باستخدام برنامج SPSS، وجُمعت مع الالتزام بالمعايير الأخلاقية المتعلقة بإخفاء الهوية والسرية.

النتائج: شملت العينة 45 ممرضًا وممرضة و29 طبيبًا، بمتوسط عمر 30.31 ± 5.74 عامًا، 71.6% منهم ذكور، و56.8% منهم يعملون في القطاع الحكومي. بلغ متوسط الخبرة في أقسام الطوارئ 5.07 ± 4.73 عامًا، وأفاد 54.1% منهم بعدم تسجيل أي أحداث خلال الاثني عشر شهرًا الماضية. بلغت الدرجة الإجمالية لـ SAQ 66.70 ± 11.10، مما يشير إلى مستوى متوسط لموقف السلامة، والذي كان أعلى في مجالي الرضا الوظيفي (72.59 ± 17.95) ومناخ العمل الجماعي (70.27 ± 14.01)، بينما سجل إدراك الضغوط أدنى مستوى للموقف (51.89 ± 17.96). وُجد تحسن ملحوظ في سلوكيات السلامة لدى أخصائيي الرعاية الصحية العاملين في المستشفيات غير الحكومية (70.14 ± 9.19 مقابل 64.09 ± 11.81، قيمة الاحتمالية = 0.019)، والذين يعملون ساعات عمل أقل أسبوعيًا (قيمة الاحتمالية = 0.047) والذين أبلغوا عن أحداث أقل خلال الاثني عشر شهرًا الماضية (قيمة الاحتمالية = 0.045)، مع تنبؤات دالة إحصائيًا بالعوامل المذكورة باستخدام تحليل الانحدار. وكان هناك ارتباط دالة إحصائيًا بين جميع مجالات سلوكيات السلامة والنتيجة الإجمالية لاستبيان SAQ، باستثناء مجال إدراك الإجهاد.

الخلاصـــة: أبرزت الدراســـة مســـتوى متوســـطًا من المواقف تجاه ســـلامة المرضـــى بين أطباء وممرضـــي الطوارئ العاملين في شـــمال الضـــفة الغربية - فلســـطين، والذي وُجد أنه أفضـــل في البيئات غير الحكومية، حيث يعملون ساعات عمل أقل أسبوعيًا ويقلّ الإبلاغ عن الأحداث. وكانت نتائج الدراســة مماثلة للدراســات الســابقة، مع التوصــية بإجراء دراســات مســتقبلية بتصــميم طولي وتغطية بيئات أوسع في الضفة الغربية - فلسطين.

الكلمات المفتاحية: المواقف، سلامة المرضى، الممرضات، الأطباء، الطوارئ.