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The Relationship between Job Stress and the Perception of Patient Safety Culture among Hospital Nurses in Palestine: Insights from a Large Mixed-Method Study

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Declaration

I certify that this dissertation submitted for the PhD degree is the result of my research, except when otherwise acknowledged, and that this dissertation has not been submitted to any other university or institution for a higher degree.

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Dedication

By Allah's grace and mercy

This Dissertation is dedicated to

My resilient Palestinian people, who carry the weight of occupation and face unyielding challenges with unwavering courage. Your strength fuels my determination, and this dissertation is a testament to your resilience.

Palestinian nurses, the unsung heroes who navigate adversity, heal wounds, and bring hope to our communities. Your tireless commitment inspires me, and I honor your invaluable contributions.

Nurses worldwide, your compassion transcends borders. I recognize, appreciate, and admire the tireless work you do each day. May this dissertation serve as a tribute to your selflessness.

My beloved wife, parents, and family, your unwavering support sustained me through late nights and countless revisions. Your love is etched into every word of this work. To my sons Mohammad, Ahmad, and my little princess Misk, for making my life enjoyable.

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My colleagues and university, thank you for fostering an environment of intellectual growth. Together, we strive for knowledge and progress. With gratitude and determination

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Abstract

Background: Patient safety is a global concern, with high rates of medical errors reported annually. Understanding the relationship between nurses' job stress and patient safety culture (PSC) is crucial. Despite their pivotal role in healthcare, nurses face stress due to demanding job roles and the challenging healthcare system in Palestine. This study explored how job stress impacts PSC in Palestinian hospitals, aiming to enhance healthcare outcomes and support healthcare professionals.

Methods: The study employed an explanatory sequential mixed-methods approach. Data collection took place from June to September 2023. The study utilized self-reported surveys, including the Hospital Survey of Patient Safety Culture (HSOPSC) and the Nursing Stress Scale (NSS), administered to 355 nurses working in 16 North West Bank hospitals in Palestine. Additionally, semi-structured interviews were conducted with 7 experienced nurses. Quantitative data collected were analyzed using descriptive and inferential analysis, while qualitative data from interviews were analyzed using thematic analysis.

Results: The overall nurses' perception of PSC was 47%. The most positive perceived areas were "teamwork", "organizational learning-continuous improvement", and "communication about error". Furthermore, the most common sources of job stress perceived by nurses were "workload" and "death and dying". Statistical tests revealed six factors significantly associated with the perception of PSC. Among these, income, hospital type, activities to improve PSC, patient safety ratings of work areas, and weekly night shifts emerged as predictors of PSC.

Additional tests revealed nine factors significantly associated with job stress. Among these, gender, educational level, engagement in stress relief activities, participation in PSC improvement activities, and patient safety ratings emerged as predictors of job stress.

Moreover, five themes emerged from the qualitative part on PSC, and three on job stress. The study underscored negative correlations between job stress and PSC.

Conclusion: The study identified the need for tailored policies and interventions that address nurses' specific stressors to enhance PSC within hospital settings. Moreover, the study shed light on the unique challenges faced by nurses in Palestine, such as limited resources, unemployment concerns, staffing, and transportation issues, which further exacerbated job stress levels and potentially compromised patient safety. Understanding these contextual factors is crucial for developing targeted interventions and support systems that prioritize the holistic well-being of nurses and the quality of patient care delivery.

Recommendations: The study recommends investing in training programs that equip nurses with the necessary skills and knowledge related to patient safety; conducting workshops and meetings to raise awareness about patient safety and error reporting; regularly assessing PSC within hospitals and identifying areas for improvement; establishing a robust system for reporting, evaluating, and providing error feedback; implementing a “just culture” strategy; and incorporating PSC into nursing education curriculums in the universities.

Key Words: Job Stress, Patient Safety Culture, Patient Safety, Palestine

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List of Abbreviations

AAUP: Arab American University - Palestine

AHRQ: Agency for Healthcare Research and Quality

AIS: American Institute of Stress

AM: Arithmetic Mean

CINAHL: Cumulative Index to Nursing & Allied Health

ENSS: Expanded Nursing Stress Scale

GDP: Gross Domestic Product

HSOPSC: Hospital Survey of Patient Safety Culture

HWD: Healthy Work Design and Well-Being

IOM: Institute of Medicine

IQR: Interquartile Range

IRB: Institutional Review Board

ISMA: International Stress Management Association

JCI: Joint Commission International

JCIA: Joint Commission International Accreditation

JD-R Model: Job Demands-Resources Model

MOH: Ministry of Health

NCCIH: National Center for Complementary and Integrative Health

NGO: Nongovernmental Organization

NIOSH: National Institute for Occupational Safety and Health

NIS: New Israeli Sheqel

NNUH: An-Najah National University Hospital

NSS: Nursing Stress Scale

PMMS: Palestinian Military Medical Services

PSC: Patient Safety Culture

PSFHI: Patient Safety Friendly Hospital Initiative

SAQ: Safety Attitude Questionnaire

SD: Standard Deviation

SOPS: Surveys on Patient Safety Culture

SPSC: Saudi Patient Safety Center

SPSS: Statistical Package for the Social Sciences

STROBE: Strengthening the Reporting of Observational Studies in Epidemiology

UNRWA: United Nations Relief and Works Agency

VIF: Variance inflation factor

WHO: World Health Organization

Chapter One

Introduction

1.1 Background

Patient safety is a cornerstone of healthcare and is currently acknowledged as a significant and expanding worldwide public health concern. It is defined as "the absence of preventable harm to a patient and reduction of risk of unnecessary harm associated with health care to an acceptable minimum" (WHO, 2023a). This concern comes from different reports and estimates suggesting that a high incidence of mistakes and harm is happening annually to patients. One of these reports from the World Health Organization (WHO) estimates that one in ten patients is injured in healthcare organizations annually, and about 3 million die due to poor treatment (WHO, 2023a). Back earlier, the report from the Institute of Medicine (IOM) called "*To Err is Human: Building a Safer Health System*." which is one of the core reports concerning patient safety, estimated that hospital-related medical errors cause up to 98,000 deaths annually in the United States alone (IOM, 2000). That is a more significant number of deaths than from AIDS, breast cancer, or motor accidents, as mentioned in the report. The report breaches the taboo around healthcare errors and their consequences and claims that the issue in healthcare is not evil individuals. Still, relatively decent people working in unsafe systems must be made safer. Therefore, healthcare organizations should create a culture where patient safety is paramount.

1.1.1 Patient Safety Culture

To create a thriving Patient Safety Culture (PSC) in healthcare organizations, addressing the norms, values, and beliefs related to patient safety is essential (Ghobashi et al., 2014). Safety culture is the attitudes, practices, beliefs, and perspectives individuals and groups hold that form an organizational unit (Lee et al., 2019). Additionally, to create a

supportive environment for patient safety inside the institution, all individuals must maintain executive dedication, good communication, motivated personnel, and shared confidence (Alsofyani et al., 2019). Increasing the PSC will help the organization fulfill its long-term commitment to improving quality and patient safety (Asefzadeh et al., 2017). Compared to workers who perceive a poor safety culture, employees who perceive a safety culture positively seem more likely to participate in safety-related practices (Alsabri et al., 2021). Therefore, assessing the PSC is essential to recognize the organizational factors that could expose patients to risk in the healthcare system (Andrade et al., 2018).

In Palestine, due to the unstable and fragile political and socioeconomic climate (Hamdan & Defever, 2002), it is thought that prioritizing resources and quantity comes before health care services' safety and quality. However, the need to raise the standard and safety of healthcare services has gained more and more attention. The Ministry of Health (MOH) addressed patient safety in the national health strategic goals (Ministry of Health, 2016). One of their strategic actions was joining the WHO Patient Safety Friendly Hospital Initiative (PSFHI) in 2012. The program seeks to alleviate the Eastern Mediterranean Region's burden of unsafe care. With support from the WHO, it assists institutions in the region's member countries in launching extensive patient safety programs (WHO, 2020). Some hospitals have been granted the Joint Commission International Accreditation (JCIA) certification. The Joint Commission is a global drive for quality improvement and patient safety in healthcare. However, only two hospitals became accredited in the West Bank. Literature showed few published research on assessing PSC in Palestinian hospitals (Abu-El-Noor et al., 2019; Hamdan, 2013; Hamdan & Saleem, 2013, 2018; Zabin et al., 2022). Despite these initiatives and the available studies, there is still a need to evaluate the status of PSC in Palestinian hospitals on a wide scale and increase the efforts to improve and extend these initiatives.

1.1.2 Job Stress

According to the National Center for Complementary and Integrative Health (NCCIH), stress is defined as “a physical and emotional reaction that people experience as they encounter challenges in life” (NCCIH, 2022). Balanced stress can be beneficial and aid in day-to-day functioning; however, excessive stress can result in physical and mental health issues (WHO, 2023b). According to the American Institute of Stress (AIS), about 83% of employees suffer from job-related stress, and about 120.000 deaths are caused by job-related stress each year (AIS, 2019). It is estimated that one in three workers experience job-related stress (Salilih & Abajobir, 2014). Moreover, high-stress levels can make it difficult to accomplish tasks requiring attention, like decision-making and memory retrieval (LeBlanc, 2009). How a person evaluates the demands and resources of a situation, the way that the stressor and the job are related, and other elements like coping mechanisms, locus of oversight, and social supports all seem to have a bearing on these impacts (LeBlanc, 2009).

The National Institute for Occupational Safety and Health (NIOSH) defines job stress as the detrimental physical and psychological reactions that arise when a worker's needs, resources, or abilities are not met by the demands of their job (NIOSH, 2023). NIOSH has established a program on job stress called “Healthy Work Design and Well-Being (HWD).” This program aims to safeguard and enhance worker health, safety, and well-being through better job design, methods of leadership, and physical and psychological conditions. NIOSH underlined the differences between stressors at the organizational and employment levels and encouraged to focus more on the causes of job stress rather than staff stress levels by highlighting the possible impact of organizational elements - including technology advancements, skill combinations, and flexible work schedules - on health and safety of their employees (Landsbergis, 2003). Studies found several sources of job stress. A recent

systematic literature review conducted to understand job stress and its causes and outcomes in organizations found that workload, role conflict, role ambiguity, job uncertainty, unsafe policies and procedures, long working hours, uncomfortable woke environment, job demands, job uncertainty, and social demands, were the most common major job stressors (Rathi & Kumar, 2022). According to the AIS, 39% of workers said that workload was the leading cause of stress, followed by interpersonal conflict (31%) (AIS, 2019).

In Palestine, the development of a health infrastructure capable of meeting Palestinians' urgent public health requirements is hampered by constraints and insecurities due to the challenging political situation (Carter, 2009). The healthcare staff face difficult situations because of insufficient resources, complex movement between checkpoints, and feeling insecure in their homes due to occupation and stressors (Keelan, 2016). Palestinian people are exposed to many traumatic events in their lives. Working in challenging conditions and caring for the wounded from Israeli attacks, healthcare staff face a higher risk of these events, which puts them under more stress. Assessing nurses' stress levels and causes is essential to help hospital administrators put strategies in place to lower their stressors and thus improve their performance. Studies showed that excessive job stress can negatively affect staff performance (Nawaz Kalyar et al., 2019; Tatik et al., 2021). Thus, healthcare organizations must assess the stress levels and type of stressors among healthcare staff, especially nurses, given their critical role in the system (Babapour et al., 2022).

1.1.3 Job Stress and Patient Safety Culture

In the modern world, it has been acknowledged that the health-work interface must be explored, especially regarding patient safety. When considering safe treatment, workers' health and working circumstances appear important (Suptitz Carneiro et al., 2021). Patient safety may be placed at risk as a result of stress-related health problems for healthcare

workers. The exhausted medical personnel's inability to handle job-related stress could have a negative effect on the safety culture (Suptitz Carneiro et al., 2021).

Stress can have detrimental impacts, and if the stressor is more intense than what is tolerable, it may result in workplace incidents like absenteeism and turnover (Schmidt et al., 2019), decreased job satisfaction, reduced productivity, decreased accurate decisions, work fatigue, decreased efficiency, and decreased quality of patient care (Asefzadeh et al., 2017; Babapour et al., 2022; Farquharson et al., 2013). These issues increase the chance of job injuries (Shareinia et al., 2018), as numerous research findings have demonstrated that job stress directly or indirectly impacts health service delivery (Parveen et al., 2017). Since healthcare staff, especially nurses, are responsible for delivering high-quality and safe care to their patients, their exposure to frequent stressful factors at work can decrease their productivity and the quality of care delivered to their patients, which may affect their safety (Asefzadeh et al., 2017). Stress at work can be brought on by inadequate supervision, unfavorable working circumstances, and a lack of encouragement from coworkers and superiors (Rayan et al., 2016). Therefore, hospital administrators can raise the caliber of nursing services and their performance by creating plans to enhance the work environment. Moreover, health managers and other relevant parties should emphasize determining the level of job stress and its causes (Birhanu et al., 2018).

1.1.4 The Healthcare System in Palestine

The healthcare system in Palestine consists of governments, Nongovernmental Organizations (NGOs), the United Nations Relief and Works Agency (UNRWA), Palestinian Military Medical Services (PMMS), and private sectors. The total number of hospitals in Palestine is 93, of which 58 (62.3%) are located in the West Bank. These hospitals have 6,900 beds, of which 4,286 (62%) are in the West Bank. Furthermore, most hospitals are

NGOs and account for 39 (41.9%) hospitals; 22 are located in the West Bank, and the rest are in Gaza. MOH hospitals come after the NGOs in terms of numbers; however, MOH hospitals have the highest number of beds serving Palestinian people compared to any other sector; it accounts for 56.7% of the total beds in Palestine and 44.3% in the West Bank. The MOH hospitals count for 31 (33.3%), 13 located in the West Bank. However, private hospitals account for 20 (21.5%), and 17 are in the West Bank. (See Figure 1 for more details).

Nurses play a significant role in the healthcare system worldwide, including Palestine. They comprise most healthcare professionals and are considered the backbone of the industry. According to the Palestinian MOH 2022 report, nurses in the West Bank account for 12,001, of which 5,475 are males, 6,526 are females, and 1,015 are midwives (see Figure 2). Only 2,728 nurses and 380 midwives are employed in MOH (public sector). Nurses in the West Bank MOH hospitals count for 1,929 (70%). Furthermore, the number of nurses per 10,000 population is 44 in Palestine (West Bank and Gaza) and 37.6 in the West Bank. However, in the MOH sector, the numbers are 10.9 and 8.6 nurses, respectively (MOH, 2023). Considering the unique political and unstable economic circumstances in Palestine as well as the Palestinian healthcare system (Hamdan & Defever, 2002; Hamdan et al., 2003), the Palestinian healthcare system faces a considerable challenge in providing good care for everyone, even though it is full of dedicated, skilled professionals who work hard. This is because many other things in Palestinian society, like education, having enough food, and even things like electricity and water, are all connected to health. Plus, many people have lost their jobs, are struggling financially, or have been forced to leave their homes because of the conflict. These things make it hard for the healthcare system to do its job correctly.

Healthcare professionals in Palestine work their fingers to the bone to help everyone, but many things make it challenging for them to do their best work and for the people to get

the care they need. The healthcare system in Palestine faces significant challenges due to inadequate infrastructure to meet the needs of its large population, given that the MOH sector is the largest one that serves these populations, according to the MOH annual report. Years of import restrictions imposed by Israeli authorities have resulted in critical shortages of essential supplies, including medical equipment, prescription drugs, and even drugs within Palestinian hospitals.

Profession / District	طبيب Physician			طبيب أسنان Dentist			صيدلاني Pharmacist			ممرض** Nurse**			قابلة Midwife	التخصص / المنطقة
	M	F	Total	M	F	Total	M	F	Total	M	F	Total	Total	
Jenin & Tubas	346	92	438	300	239	539	184	394	578	466	683	1,149	93	جنين و طوباس
Tulkarm	306	77	383	156	157	313	167	343	510	339	431	770	69	طولكرم
Nablus & Salfit	688	238	926	389	258	647	318	1,050	1,368	1,048	1,361	2,409	154	نابلس و سلفيت
Qalqiliya	137	18	155	73	32	105	90	125	215	134	185	319	53	قلقيلية
Ramallah & Al Bireh	631	150	781	335	292	627	324	582	906	730	839	1,569	137	رام الله والبيرة
Jerusalem & Jericho & Al Aghwar	102	462	564	434	435	869	253	443	696	751	931	1,682	213	القدس و أريحا والأغوار
Bethlehem	394	82	476	234	222	456	153	307	460	657	851	1,508	138	بيت لحم
Hebron	1,164	172	1,336	502	362	864	442	666	1,108	1,350	1,245	2,595	158	الخليل
***Others	2,423	654	3,077	0	0	0	0	0	0	0	0	0	0	اخرى***
West Bank	6,191	1,945	8,136	2,423	1,997	4,420	1,931	3,910	5,841	5,475	6,526	12,001	1,015	الضفة الغربية
Gaza Strip	7,088			1,861			3,816			11,586			609	قطاع غزة
Palestine	15,224			6,281			9,657			23,587			1,624	فلسطين

Figure 1 *Distribution of Hospitals and Total Inpatient Beds by Governorate and Providers, Palestine 2022*

Source: MOH 2022 Annual Report - Palestine

Governorate المحافظة	MOH وزارة الصحة		UNRWA الوكالة		NGOS غير الحكومية		Private القطاع الخاص		PMMS الخدمات الطبية العسكرية		Total المجموع		Hosp. Per	Beds Per
	عدد المستشفيات No. of Hospitals	عدد الأسرة No. of Beds	عدد المستشفيات No. of Hospitals	عدد الأسرة No. of Beds	عدد المستشفيات No. of Hospitals	عدد الأسرة No. of Beds	عدد المستشفيات No. of Hospitals	عدد الأسرة No. of Beds	عدد المستشفيات No. of Hospitals	عدد الأسرة No. of Beds	عدد المستشفيات No. of Hospitals	عدد الأسرة No. of Beds	100,000	10,000
West Bank الضفة الغربية	18	1,898	1	58	22	1,592	17	738	0	0	58	4,286	1.8	13.4
% of Beds % الأسرة	44.3%		1.4%		37.1%		17.2%		0.0%		100%			
Jenin جنين	1	223	0	0	2	63	2	74	0	0	5	360	1.4	10.4
Tubas طوباس	1	54	0	0	0	0	0	0	0	0	1	54	1.5	8.0
Tulkarm طولكرم	2	129	0	0	1	42	0	0	0	0	3	171	1.5	8.4
Nablus نابلس	2	263	0	0	4	219	2	159	0	0	8	641	1.9	15.1
Qalqiliya قلقيلية	1	68	1	58	0	0	0	0	0	0	2	126	1.6	10.1
Salfit سلفيت	1	50	0	0	0	0	0	0	0	0	1	50	1.2	6.0
Ramallah & Al Bireh رام الله والبيرة	2	312	0	0	1	53	6	317	0	0	9	682	2.5	18.8
Jericho & Al Aghwar أريحا والأغوار	1	54	0	0	0	0	0	0	0	0	1	54	1.8	9.9
Jerusalem القدس	0	0	0	0	6	664	1	52	0	0	7	716	1.5	14.9
Bethlehem بيت لحم	2	293	0	0	5	269	2	31	0	0	9	593	3.8	24.7
Hebron الخليل	5	452	0	0	3	282	4	105	0	0	12	839	1.5	10.5
Gaza Strip قطاع غزة	13	2,011	0	0	17	440	3	69	2	94	35	2,614	1.6	12.1
% of Beds % الأسرة	76.9%		0.0%		16.8%		2.6%		3.6%		100%			
North Gaza شمال غزة	2	191	0	0	2	69	0	0	1	89	5	349	1.2	8.1
Gaza غزة	6	914	0	0	9	264	3	69	0	0	18	1,247	2.5	17.1
Deir Al Balah دير البلح	1	209	0	0	2	27	0	0	0	0	3	236	1.0	7.6
Khan Yunis خانيونس	2	580	0	0	3	71	0	0	1	5	6	656	1.4	15.4
Rafah رفح	2	117	0	0	1	9	0	0	0	0	3	126	1.1	4.7
Palestine فلسطين	31	3,909	1	58	39	2,032	20	807	2	94	93	6,900	1.7	12.9
% of Beds % الأسرة	56.7%		0.8%		29.4%		11.7%		1.4%		100%			

Figure 2 Distribution of Health Human Resources by Profession, Sex & District, Palestine 2022

Source: MOH 2022 Annual Report - Palestine

A significant obstacle to establishing an effective healthcare system is the 708-kilometer-long “Separation Wall” in the West Bank (Parry, 2003) (See Figure 3). This barrier has profoundly impacted 3.2 million residents, causing physical and economic fragmentation. From a medical perspective, the wall hinders Palestinians’ fundamental right to healthcare by restricting the movement of patients, doctors, ambulances, and medications (Efrat, 2015). It is crucial to note that the so-called “Separation Wall” is deemed illegal under International Law (Parry, 2003). Moreover, recent World Bank findings indicate that the Palestinian economy will likely remain below its total capacity. Projected growth is around 3 percent, resulting in stagnant per capita income. Furthermore, the healthcare system continues to be under Israeli control, with the Israeli state having the final say on healthcare budgets, border crossings, building permits, and pharmaceutical imports and exports (Efrat, 2015). More problems with access arise from the occupation and the requirement for permits to cross Israeli checkpoints.

Moreover, fiscal limitations and Israeli restrictions challenge healthcare access, impacting the population adversely (The World Bank, 2023a). Furthermore, spending increased mainly due to a rising public wage bill. Considering only the partial implementation of recent agreements between the government and labor unions, Israeli deductions from revenues (known as 'clearance revenues'), and donor contributions, the deficit is expected to increase. It is projected to reach 2.5 percent of Gross Domestic Product (GDP) (The World Bank, 2023a). The primary issue here is that funding choices are narrowing, and the deficit is likely to rely on arrears owed to private suppliers persistently, the public pension fund, and public employees (who have been receiving reduced wages—around 80%-85% or sometimes 60%—since late 2021). Additionally, the World Bank reported 24.4 percent unemployment in Palestine (The World Bank, 2023b). This impacts nurses; due to the previously mentioned conditions, there are large numbers of nursing graduates in Palestine with a severe shortage of employment, which increases the unemployment rate among nurses.

Figure 3 *The Israeli Separation Wall at The Palestinian Town of Abu Dis in The Israeli-Occupied West Bank East of Jerusalem.* Source: *Al Jazeera, 2020*

Based on the information mentioned previously, nurses in Palestine face different challenges that possess potential life stressors. Limitations on movement make it extremely challenging to obtain medical services. Due to their shift working regime, this also impacts the healthcare staff, especially nurses. Nurses face difficulties when going to their hospitals to serve their patients, especially for evening and night shifts. They face challenges getting a job, and even when employed, they face salary problems, transportation problems, limited resources, and staffing issues. Restrictions on permits in Palestine create significant barriers to accessing healthcare. Therefore, nurses may experience stress resulting from workload and staffing issues, which can affect their well-being and performance.

1.2 Problem Statement

Nursing entails crucial tasks, so it is no surprise that much job stress is involved. This stress can affect all areas of nurses' productivity, including patient safety; it significantly impacts their performance, health, and satisfaction (Asefzadeh et al., 2017; Unaldi Baydin et al., 2020). With approximately 50% of the world's healthcare workforce being nurses (WHO, 2022), their direct patient interactions emphasize the importance of safe practices in all aspects of patient care (Keykaleh et al., 2018; McVicar, 2003). Unsafe practices may cause irreversible harm to patients and their families, including discontent with the healthcare system, more costs, more pain for patients, and legal implications (Keykaleh et al., 2018). Notably, nurses experience stress-related illnesses at a rate 80% higher than other occupations, with 7.4% taking weekly leave due to exhaustion (Babapour et al., 2022).

Nurses often experience high job-related stress due to their frequent exposure to situations involving death, heavy workloads, and uncertain treatment outcomes (Sarafis et al., 2016). Additional stressors include conflicts with supervisors or colleagues and the responsibility of maintaining patient and family connections (Sarafis et al., 2016). Job stress

may impact nurses' lives and, thus, the quality of care they provide to patients (Layali et al., 2019). Moreover, elevated stress levels increase the likelihood of errors affecting patient outcomes directly or indirectly (Babapour et al., 2022; Esmaiel Hajinezhad & Azodi, 2014).

Moreover, it has been reported that in hospitals, adverse incidents have led to the unfortunate passing of one patient out of every 10 (de Vries et al., 2008). Meanwhile, in high-income nations with abundant resources and advanced technologies, one in every ten patients experiences an injury (Radwan, 2022). However, the situation is less clear in low-income countries, where outdated technologies and insufficient staff and resources may contribute to injuries (Andermann et al., 2011); estimates suggest it could be as high as 25% (Radwan, 2022).

In Palestine, a low-income country, approximately one out of every seven patients experience an injury. However, it is concerning that nearly 60% of these injuries are preventable (Najjar et al., 2013). Additionally, job-related accidents contribute to stress, with almost 10% of such incidents being stress-related. Developing practical stress management skills can help maintain harmony within organizations (Groves & Hinton, 2013). Since nurses constitute a significant portion of healthcare workers, further studies are needed in the Middle East and at the national level. These studies should explore the relationship between job stress and PSC. The challenging working conditions for nurses in Palestine—marked by political conflicts, staff shortages, and inadequate equipment—heighten the risk of job-related stress. Healthcare administrators and stakeholders must prioritize assessing stress levels and identifying contributing factors (Birhanu et al., 2018). While PSC is gaining attention in Palestine, only a few hospitals have enrolled in international accreditations like Joint Commission International (JCI), which places patient safety at the forefront. To enhance

patient safety, it is crucial to investigate job stress among nurses and address areas that require improvement.

1.3 Significance of the Study

The significance of this study lies in its comprehensive examination of the factors influencing job stress and the perception of PSC among nurses in the North West Bank. By exploring quantitative and qualitative aspects, the research aims to provide a detailed understanding of the interplay between nurses' work environments, mental well-being, and the quality of patient care they deliver.

Moreover, job stressors have been reported in the literature to affect different aspects of workers' health, performance, and the safety of patients (Chen et al., 2022; Joshi et al., 2023), as well as the safety culture (Paneerselvam et al., 2022). In Palestine, working conditions under occupation and shortages of resources may increase its effect on staff performance and staff perception toward safety culture. Measuring the level of work stressors and their impact on PSC can help healthcare institutions determine the most common job stressors that may affect the staff and the safety of their patients and develop strategies to minimize these stressors. It also helps to measure staff perception of safety culture to improve areas of weaknesses as seen by the staff. A good safety culture must be implemented to reduce the likelihood of workplace incidents that may harm patients.

The significance of the study can be seen in these areas:

Enhancing Patient Safety: Understanding nurses' perceptions of PSC is crucial for implementing strategies that enhance patient safety and care quality in hospitals.

Improving Work Environment: Identifying sources of job stress can lead to targeted interventions to improve the work environment for nurses, potentially reducing burnout and turnover rates.

Informing Policy Development: The study's findings can inform hospital administrators and policymakers about the necessary changes to foster a supportive and safe work culture.

Addressing Demographic Disparities: Examining the impact of demographic factors on job stress and PSC perception can help address disparities and tailor support to diverse nursing staff needs.

Optimizing Work Conditions: Analyzing the relationship between workplace characteristics and job stress can improve nurse scheduling, resource allocation, and support systems.

Promoting a Culture of Safety: The research can contribute to developing a robust safety culture within hospitals, which is essential for staff satisfaction and patient outcomes.

Influence Nursing Education: The significance of this study extends to nursing education, where it can profoundly influence curriculum development and clinical training. Educational programs can be tailored to equip nursing students with the necessary competencies to manage job stress and uphold patient safety. The findings can inform core components of nursing curricula, emphasizing stress management and patient safety best practices, and guide continuing education to focus on skill development in these areas. Ultimately, this study can bridge the gap between theoretical knowledge and practical application, ensuring that future nurses are well-prepared to contribute to a positive healthcare environment and patient outcomes.

Overall, this study has the potential to improve healthcare services by highlighting the critical role nurses play in PSC and the factors that affect their ability to provide optimal care.

1.4 Aim of the Study

The primary aim of this dissertation's quantitative and qualitative parts is to examine the relationship between job stress and the perception of PSC among nurses working in Palestinian hospitals in the North West Bank.

1.5 Specific Objectives

1. To examine nurses' perceptions of PSC in North West Bank hospitals.
2. To examine the perceived sources of job stress among nurses in North West Bank hospitals.
3. To examine the association between nurses' demographics (gender, age, income, and academic qualification) and their perceived job stress in North West Bank hospitals.
4. To examine the association between nurses' demographics (gender, age, income, and academic qualification) and their perception of PSC in North West Bank hospitals.
5. To examine the association between nurses' workplace characteristics (tenure in the hospital, tenure in the work area, type of hospital, primary working unit, hours worked per week, whether the hospital performs activities for nurses to relieve job stress, whether the hospital performs activities to improve the PSC, the rating of unit/work area on patient safety, and night shifts) and their perceived job stress in North West Bank hospitals.
6. To examine the association between the nurses' workplace characteristics (tenure in the hospital, tenure in the work area, type of hospital, primary working unit, hours worked per week, whether the hospital performs activities for nurses to relieve job stress, whether the hospital performs activities to improve the PSC, the rating of

unit/work area on patient safety, and night shifts) and their perception of PSC among nurses in North West Bank hospitals.

1.6 Research Questions and Hypothesis

The main research question is: "What is the relationship between job stress and PSC among nurses working in North West Bank Palestinian hospitals?"

The null hypothesis (H_0) for the main research question: There is no statistically significant association at 0.05 alpha level between job stress and the perception of PSC among nurses working in North West Bank hospitals. The alternative hypothesis (H_a): There is a statistically significant association at 0.05 alpha level between job stress and the perception of PSC among nurses working in North West Bank hospitals.

The following are other research questions, with their null hypothesis (H_0) and the alternative hypothesis (H_a), that show the suggested indirect relationships between the study variables of the main research question:

1. What is the perception of PSC among nurses in North West Bank hospitals?
2. What are the perceived job stressors among nurses in North West Bank hospitals?
3. Are nurses' demographics (gender, age, income, and academic qualification) associated with their perceived job stress in North West Bank hospitals?

($H3_0$): There is no statistically significant association at 0.05 alpha level between nurses' demographics (gender, age, income, and academic qualification) and their perceived job stress in North West Bank hospitals.

($H3_a$): There is at least one statistically significant association at 0.05 alpha level between nurses' demographics (gender, age, income, and academic qualification) and their perceived job in North West Bank hospitals.

4. Are nurses' demographics (gender, age, income, and academic qualification) associated with their perception of PSC in North West Bank hospitals?

($H4_0$): There is no statistically significant association at the 0.05 alpha level between nurses' demographics (gender, age, income, and academic qualification) and their perception of PSC in North West Bank hospitals.

($H4_a$): There is at least one statistically significant association at the 0.05 alpha level between nurses' demographics (gender, age, income, and academic qualification) and their perception of PSC in North West Bank hospitals.

5. Are nurses' workplace characteristics (tenure in the hospital, tenure in the work area, type of hospital, primary working unit, hours worked per week, whether the hospital performs activities for nurses to relieve job stress, whether the hospital performs activities to improve the PSC, the rating of unit/work area on patient safety, and night shifts) associated with their perceived job stress in North West Bank hospitals?

($H5_0$): There is no statistically significant association at 0.05 alpha level between nurses' workplace characteristics (tenure in the hospital, tenure in the work area, type of hospital, primary working unit, hours worked per week, whether the hospital performs activities for nurses to relieve job stress, whether the hospital performs activities to improve the PSC, the rating of unit/work area on patient safety, and night shifts) and their perceived job stress in North West Bank hospitals.

($H5_a$): There is at least one statistically significant association at the 0.05 alpha level between nurses' workplace characteristics (tenure in the hospital, tenure in the work area, type of hospital, primary working unit, hours worked per week, whether the hospital performs activities for nurses to relieve job stress, whether the hospital performs activities to improve

the PSC, the rating of unit/work area on patient safety, and night shifts) and their perceived job stress in North West Bank hospitals.

6. Are nurses' workplace characteristics (tenure in the hospital, tenure in the work area, type of hospital, primary working unit, hours worked per week, whether the hospital performs activities for nurses to relieve job stress, whether the hospital performs activities to improve the PSC, the rating of unit/work area on patient safety, and night shifts) associated with their perception of PSC in North West Bank hospitals?

   ($H6_0$): There is no statistically significant association at 0.05 alpha level between nurses' workplace characteristics (tenure in the hospital, tenure in the work area, type of hospital, primary working unit, hours worked per week, whether the hospital performs activities for nurses to relieve job stress, whether the hospital performs activities to improve the PSC, the rating of unit/work area on patient safety, and night shifts) and their perception of PSC in North West Bank hospitals.

   ($H6_a$): There is at least one statistically significant association at 0.05 alpha level between nurses' workplace characteristics (tenure in the hospital, tenure in the work area, type of hospital, primary working unit, hours worked per week, whether the hospital performs activities for nurses to relieve job stress, whether the hospital performs activities to improve the PSC, the rating of unit/work area on patient safety, and night shifts) and their perception of PSC among nurses in North West Bank hospitals.

1.7 Definition of Study Variables

Stress: A relationship between an individual and their surroundings that is deemed personally meaningful and demanding on their ability to cope (Folkman, 2020; Lazarus & Folkman, 1984).

Job Stress Conceptual Definition: The adverse physical and psychological effects that occur when a worker's demands, resources, or skills are not matched by the requirements of their work (NIOSH, 2014).

Operational Definition: The Nursing Stress Scale (NSS), developed by Gray-Toft and Anderson (1981), is the most common tool to measure nurses' job stress. According to this scale, the total score of its items measures the frequency of stressors nurses experience during their job duties. Job stress is considered high when the total score indicates nurses experience more frequent stress. Job stress is considered low when the total score of items is low, meaning that nurses experience less frequent stress.

Patient Safety: The Agency for Healthcare Research and Quality (AHRQ) defined patient safety as “an attribute of health care systems; it minimizes the incidence and impact of, and maximizes recovery from, adverse events” (Emanuel et al., 2009). It is also defined as “the absence of preventable harm to a patient and reduction of risk of unnecessary harm associated with health care to an acceptable minimum" (WHO, 2023a).

PSC Conceptual Definition: It speaks of the shared ideas, principles, and standards that direct the actions and conduct of healthcare workers and other organization staff. It is the degree to which an organization's culture supports and promotes patient safety (Agency for Healthcare & Quality, 2022; Hayashi et al., 2020) (see Figure 4).

Operational Definition: The most common tool used in studies to measure the perception of PSC is the Hospital Survey of Patient Safety Culture (HSOPSC) (Sorra et al., 2021) developed by the AHRQ. According to the tool, the perception of nurses is considered positive when the overall frequency score is high, and it is considered weak or negative when

it is low. While there is no universally defined cut point, the researcher identified an area as 'weak' when the positive score fell below 50%.

Figure 4 *Measuring PSC*
Source: AHRQ Hospital Survey on Patient Safety Culture Version 2.0: User's Guide (Sorra et al., 2021)

1.8 Conceptual Framework based on the Job Demands-Resources Model

The study framework was based on the Job Demands-Resources Model (JD-R model). The JD-R Model categorizes job characteristics into two main groups: job demands and job resources (Bakker & Demerouti, 2007; Demerouti et al., 2001).

Job demands are typically defined as elements requiring sustained physical, emotional, or cognitive effort. Such elements include role ambiguity, conflict, stress, stressful events, workload, emotional labor, and work pressure. These elements are significant predictors of outcomes like exhaustion, psychosomatic health complaints, and repetitive strain injury (Bakker & Demerouti, 2017). Job resources are aspects of a job that make it

easier to accomplish professional goals, lower the workload and costs associated with the position, and foster personal growth and development (Bakker & Demerouti, 2007; Chirico, 2016). Such aspects include supervisor support, colleague support, autonomy, role clarity, and skills utilization.

The JD-R model's central tenet is that work strain can occur in any job or profession when (specific) demands are high and (specific) resources are in short supply (Chirico, 2016). Job demands can affect one's health: High employment demands, such as a heavy workload, result in ongoing overstressing. Resources, on the other hand, start a motivational process: when employees have enough job resources to meet the demands, they are more likely to experience positive job-related outcomes such as performance, engagement, and motivation (Tummers & Bakker, 2021). In this study, the model assumes that when nurses experience a high effect of job demands, including job stress, fatigue, and anxiety, their job performance may be affected while performing their duties, resulting in patient harm or mistakes (see Figure 5). This, in turn, could affect the staff's perception of PSC. This model can highlight how workplace stressors might lead to physical complications and poor mental health outcomes (Britt et al., 2021). The main focus is on the presence of job demands, which put stress on the staff with signs of stress, including exhaustion, workload, anxiety, emotional demands, and conflicting roles (Bakker & Demerouti, 2007). Furthermore, job resources could mitigate the adverse effects of job demands on job stress, including exhaustion, work pressure, unpleasant physical conditions, and emotionally stressful patient relationships (Bakker et al., 2003). In the context of PSC, job stress factors may impact how PSC is perceived, which may affect patient safety results (Chen et al., 2019; Kim & Lee, 2019). Moreover, this study's present model assumes that nurses' demographics and workplace characteristics may impact their perception of job stress and PSC.

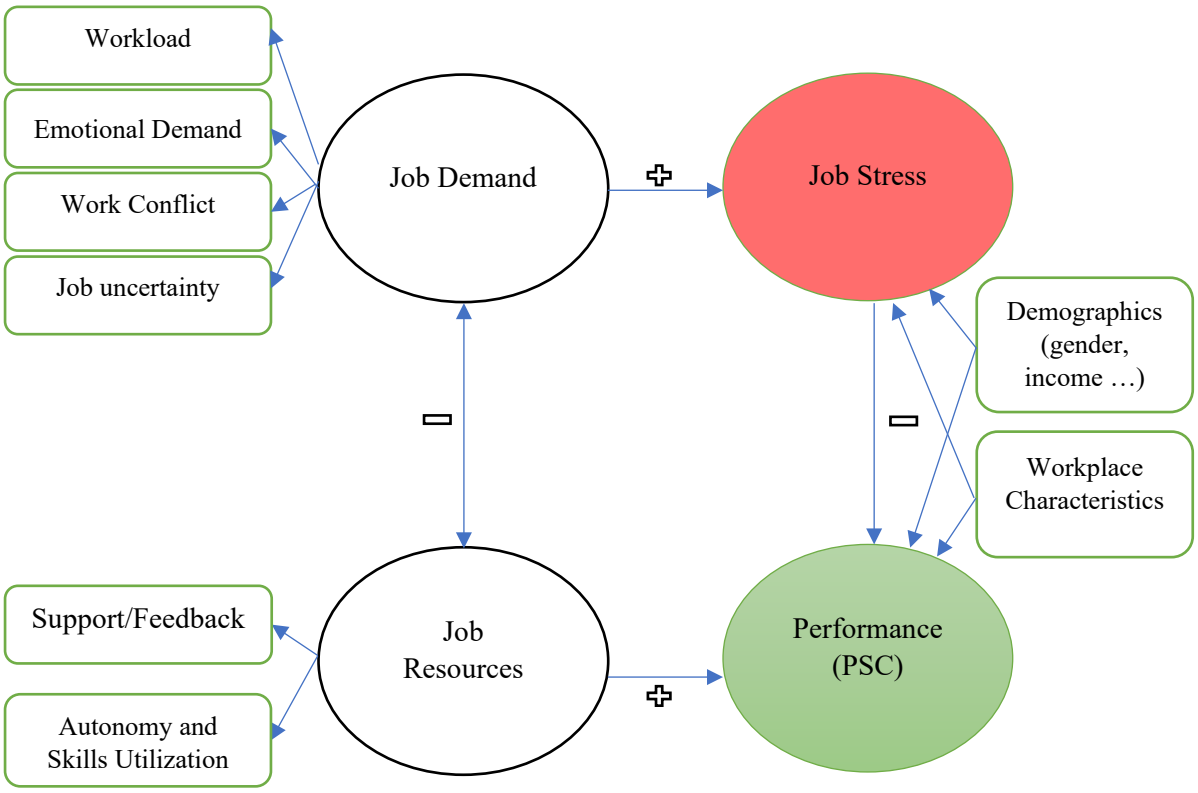

Figure 5 *Conceptual Framework Based on the JD-R Model*

1.9 Summary

Nurses are vital in improving patient safety and the health services provided. Thus, bringing their insights and perceptions toward patient safety and job stressors that may affect them can help to implement future strategies and initiatives to improve their work environment. Thus, this chapter presented an overview of the dissertation, the background, and the problem to be addressed, given that PSC is growing in Palestine and research on the relationship with job stress has yet to be made available. The chapter also explained the research aim, objectives, and significance of conducting this study. Moreover, this chapter presented the concepts of stress, job stress, patient safety, safety culture, and the framework for both.

Chapter Two

Literature Review

2.1 Introduction

This chapter thoroughly analyzes the literature pertinent to the current study. Its goal was to obtain relevant information about the stress that nurses experience at work and how they perceive the PSC in hospital settings. It highlights the relationship between job stress and PSC. Furthermore, it directed this study's direction and brought attention to gaps in the literature. The body of research on stress is extensive and thoroughly explored. Specifically, stress is clearly defined, along with the causes and effects of stress in the workplace, especially within nursing.

Moreover, the literature on PSC is vast, especially in nursing. For this study, a traditional literature review was carried out, which entails summarizing and evaluating the corpus of literature on PSC and job stress. This kind of literature review helps give an overview and background information on a topic and highlights areas that warrant additional investigation. The researcher searched several pieces of literature using electronic databases to help find relevant research papers and related articles. The search was done between September 2023 and February 2024. The databases included PubMed, Scopus, CINAHL, EBSCO, and search engines like Google Scholar, Google, and Bing. The search strategy used the most common and appropriate keywords such as ‘stress’, ‘job stress’, ‘job-related stress’, ‘work stress’, ‘work-related stress’, ‘occupational stress’, ‘workplace stress’, ‘sources of stress’, ‘stressors’, ‘workload’, ‘patient safety’, ‘safety culture’, ‘patient safety culture’, ‘perception’, ‘nurses’ perception’, ‘nurses’, ‘nursing’, ‘nursing staff’, ‘nurse’, ‘healthcare workers’, ‘hospitals’. The review discussed job stress and PSC and their relationship globally and regionally. The review then addressed the concept in Palestine.

2.2 Patient Safety Culture

PSC, defined by the AHRQ, refers to “the beliefs, values, and norms shared by healthcare practitioners and staff throughout the organization that influence their actions and behaviors” (Sorra et al., 2021). The WHO states that patient safety is about avoiding and reducing patient mistakes and adverse medical events when providing healthcare services (WHO, 2023a). These mistakes may result in patient harm or disability (Nieva & Sorra, 2003). According to the report from the IOM, “To Err Is Human: Building a Safer Health System,” hospital errors like medication errors are multifactorial, and most of them are system-related, and blaming the individuals will not change these errors or factors associated with them, and they likely will happen again. Thus, there is a need to improve the system and make it safer (IOM, 2000). Adverse events are one of the causes of mortality and morbidity and impact patients and healthcare workers, leading to moral and ethical harm to them and their relationships. In addition to the moral harm to healthcare organizations, it reduces their dependability and trustworthiness (Barcelos Schwonke et al., 2016). Nursing is considered a stable and vital profession among healthcare workers in light of nurses’ frontline role with patients and their vast numbers. In most cases, nurses were the first to notice alterations in patients' health situations. Nurses contributed acquired behaviors to their hospitals' cultures, like knowledge, education, and experience (Ammouri et al., 2015).

Nursing research has recognized the crucial assessment of specific nurses' perceptions (Ho, 2017). The perception result included how a person would react during the procedure (Rao & Sudeepta, 2018). It was found that people's viewpoints were influenced by their beliefs, cultures, emotions, and experiences (Biggs et al., 2015). How nurses perceive things while working on the front lines affects how they approach providing care (Ahlstedt et al., 2019). One of the critical elements of safety culture is how healthcare personnel respond to

adverse events (Abu-El-Noor et al., 2019). Patients may suffer injury due to specific actions, conditions, or circumstances. Changing systems and behavior to address these issues can make the hospital setting safer for patients (Abu-El-Noor et al., 2019; de Vries et al., 2008). So, it is essential to measure nurses' perceptions of PSC when looking to improve healthcare services and the safety of patients while providing these services. Moreover, hospitals should implement different activities that could improve the perception of PSC. One of the most important strategies is promoting a "just culture" environment (Kim & Yu, 2021). Another strategy could be the implementation of safety huddles, which were found to improve the perception of PSC (Lai et al., 2023).

Several tools were used to measure the perception of PSC. However, the most common tools were the HSOPSC, which the AHRQ developed in the United States. It has undergone extensive validation and reliability testing. The survey consists of 12 composites of PSC, such as "communication openness," "teamwork within units," "staffing," and "nonpunitive response to errors." However, the last updated version consists of 10 composites (Sorra et al., 2021). The second common tool is the Safety Attitudes Questionnaire (SAQ), derived from the Flight Management Attitude Questionnaire, designed to evaluate the safety culture in aircraft cockpits (Sexton et al., 2006). The survey consists of six dimensions, such as "safety climate," "teamwork climate," and "stress recognition". Our literature focused on the studies that used the HSOPSC tool because the present study utilized the last version of it.

Different studies assessed the perception of healthcare workers, especially nurses, toward PSC, and the findings were not consistent between these studies. For instance, in their research, Abdelaliem and Alsenany (2022) found that nurses perceived the culture of patient safety positively. The nurses perceived the overall PSC positively; however, the domain of

“Staffing” was the lowest perceived score and an improvement in light of staff shortages, and the workload was considered. However, Hessels et al. (2019) found a negative perception of the overall PSC from the nurse’s view. This was also congruent with Alquwez et al. (2018), who found that nurses perceived most PSC dimensions negatively, including the overall perception of PSC. Only two areas were perceived as a strength; “teamwork within units” and “organizational learning–continuous improvement”.

In the next section, the researcher reviewed various global, regional, and Palestine-based studies that evaluated nurses' perceptions of PSC. Additionally, the paper explored several factors associated with nurses' workplace characteristics and PSC.

2.2.1 Globally

The AHRQ created the Surveys on Patient Safety Culture (SOPS) Hospital Survey 2.0, commonly known as HSOPSC, which is the most commonly used tool to assess PSC across ten dimensions. The agency has established the SOPS Hospital Survey 2.0 Database to help hospitals compare their results. In the last report of 2022, The SOPS Hospital 2.0 User Database Report encompasses information from 400 hospitals, with contributions from 206,410 healthcare providers and staff members (Hare et al., 2022). The average positive score of PSC was 70%. The most positive perceived dimensions were “Teamwork” and “Supervisor, Manager, or Clinical Leader Support for Patient Safety”. However, “Staffing and Work Pace” was the lowest positive perceived dimension. Furthermore, the report showed an underreporting of events in these hospitals, suggesting a blame culture that prevents staff from reporting incidents may exist.

A study by Azyabi et al. (2021) provided a systematic review of the current understanding and evaluation methods of PSC in hospitals. It discussed the limited

knowledge and research tools available for assessing PSC, which may hinder global efforts to improve patient safety. The study reviewed 66 pieces of literature from countries from 2006 to 2020, examining instruments like the HSOPSC and the SAQ. It identified “teamwork”, “organizational learning”, “error reporting”, “safety awareness”, gender, demographics, work experience, and staffing levels as critical factors influencing PSC. The findings underscore a growing interest in the healthcare industry in assessing and improving PSC in hospital settings. The researchers recommended that studies and surveys be carried out every two to three years to guarantee PS best practices and include qualitative evaluation.

Alex Kim et al. (2019) conducted a cross-sectional study to assess the healthcare staff, including nurses on PSC. The study was conducted in Sarawak General Hospital in Malaysia among 500 hospital staff and used the HSOPSC questionnaire. The results indicated that the overall patient safety score was moderate, with most dimensions scoring below the benchmark. The highest positive response was for “organizational learning - continuous improvement,” while the “non-punitive response to error” received the lowest. The study suggested that the hospital should focus on staffing, handoff improvements, and fostering a non-punitive culture to address errors.

Granel et al. (2020) from the National Center for Biotechnology Information presented a mixed-methods study on nurses’ perceptions of PSC in two public hospitals in Catalonia, Spain. The study was conducted over 109 nurses from medical/surgical and emergency units. The findings revealed that while most nursing staff rated patient safety acceptable, work pressure and resource constraints were significant concerns. Teamwork within units received positive feedback, but staffing levels were criticized. The study also found that safety incidents often go unreported due to fear of punishment, indicating a need for strategies that promote a positive safety culture and avoid punitive responses.

Ertürk Yavuz (2023) has conducted a study to assess the perceptions of PSC among surgical nurses working in public, private, and university hospitals in Turkey. The descriptive study was conducted among 206 nurses using the HSOPSC. The findings suggested that surgical nurses moderately perceive PSC. “Teamwork within units” received the highest positive response, while “non-punitive response to errors” scored the lowest. The study also found that most nurses did not report any errors in the past year, and those with more than 11 years of experience reported more errors. The research recommends enhancing PSC through on-the-job training and improving working conditions.

Hayashi et al. (2020) examined the connection between PSC and the working environment of healthcare workers in their study conducted in Japan. The study highlighted how factors like working hours, night shifts, and days off can influence PSC. The study surveyed healthcare workers across 40 hospitals and found that longer working hours and more night shifts correlate with a lower perception of PSC. Even after adjusting working hours, increasing night shifts led to more event reports. Furthermore, the study found the highest perceived composites of PSC were “teamwork within units” and “supervisor or manager expectations and actions promoting patient safety”. However, the lowest was “handoffs and transitions”. The research suggests that managing the working environment could improve PSC, with different impacts observed between physicians and nurses.

2.2.2 Regionally

Malak et al. (2022) Found better results among Jordanian nurses. The researchers assessed the perceptions of PSC among 424 nurses working in emergency rooms of accredited hospitals from both governmental and private sectors. The cross-sectional used a self-reported questionnaire utilized by the SOPS Hospital Survey. The study reported that the total perception mean of PSC was 70.6%. Findings showed that while there are strong areas

such as “teamwork within units”, feedback and communication about the error”, and “organizational learning-continuous improvement”, there is room for enhancement in reporting events and managing transitions. The overall perception of PSC was moderate, suggesting a need for regular assessments to identify areas for improvement to promote a better PSC. Furthermore, the study showed that PSC was associated with the level of education, income, and patient safety principles.

Oweidat et al. (2023) Conducted a study in Jordan to examine the relationship between PSC and the intention of Jordanian nurses to leave their jobs. This descriptive cross-sectional study was conducted with over 200 nurses in one public and one private hospital. The study found that while “teamwork” and “handoff and exchange of information” scored positively, areas like “staffing” and “response to errors” were seen as needing improvement. The research suggests that better staffing and increased motivation could enhance PSC and reduce nurses’ intent to leave.

A recent study from Sudi Arabia was conducted by Rawas and Abou Hashish (2023) at King Abdulaziz Medical City in Jeddah. The study utilized a cross-sectional design using the HSOPSC and was conducted among 184 nurses from different inpatient wards. The study measured nurses’ perception of PSC and explored how various factors related to PSC correlate with outcomes, considering the characteristics of the nursing staff. Findings indicated a moderate overall positive response rate for PSC predictors. “Teamwork within units” scored highest, suggesting it is a strong point, while other areas like “organizational learning” and “communication about errors” also received high scores. However, "handoffs and transitions," “staffing,” and “nonpunitive response to errors” were the weakest dimensions, suggesting improvements were needed. The study found an overall positive perception of many dimensions of PSC.

Furthermore, the study underscores the importance of continuous safety training to enhance staff perception and performance regarding PSC. Finally, the study recommended fostering leadership, encouraging error reporting, and risk management focused on systemic issues. Implement workload assessments, staff reallocation, and standardized communication to improve staff well-being and teamwork (Rawas & Abou Hashish, 2023).

Another systematic review was conducted by Elmontsri et al. (2017) to assess the status of PSC in Arab countries. The HSOPSC was used to explore this area. The researchers reviewed 18 studies. The review identified “non-punitive response to error” as a significant issue needing improvement. It also noted that healthcare professionals in Arab countries perceive a ‘culture of blame’ that hinders incident reporting. “Teamwork within units” is generally better than across hospital units, and “organizational learning and continuous improvement” are seen as satisfactory. However, “communication openness” remains a concern. The review concludes that enhancing PSC in the Arab world requires involvement from all stakeholders, including policymakers, healthcare providers, and medical educators. It also recommended that healthcare leaders in Arab countries create a “just culture” in the work environment where staff are encouraged to report events, mistakes, and near misses to draw lessons and improve the process. Finally, the study suggested that it is essential to perform regular safety culture assessments to determine the efficacy of patient safety initiatives and programs.

2.2.3 PSC in Palestine

As the concept of PSC is still new in Palestine, only a limited number of studies have been conducted to assess the perception of healthcare workers, particularly nurses, on PSC. In this section, the researcher summarized the findings of some of these studies to provide an overview of the Palestinian situation regarding PSC.

Abu-El-Noor et al. (2019) Conducted a study to examine the perception of PSC from nurses' perspective in governmental hospitals in Gaza. The study was conducted on 424 nurses from four governmental hospitals using the Attitude to Patient Safety Questionnaire III, which measures attitudes toward PSC across nine key areas, including error reporting, team functioning, and patient involvement. The results showed that the nurses had slightly positive attitudes toward patient safety, with an average score of 3.68 out of 5. The highest scores were for 'working hours as a cause of error' and 'team functioning', while the lowest were for 'importance of patient safety in the curriculum' and 'professional incompetence as a cause of error'. The researchers also found that some factors, such as gender, specialty, and hospital, significantly affected the nurses' attitudes toward patient safety. In contrast, other factors, such as age and experience, did not. The researchers concluded that the nurses' attitudes towards patient safety were not optimal and needed improvement. They recommended that policymakers should revise or adopt new policies to enhance PSC.

Hamdan and Saleem (2013) Conducted a study to measure the state of PSC in 11 public hospitals in the West Bank, Palestine. The researchers used a questionnaire based on the HSOPSC to collect data from 1460 hospital staff, including doctors, nurses, and others. The questionnaire evaluated their attitudes on 12 domains of PSC. The results showed an average overall positive perception of PSC in public hospitals. The domain with the lowest score was "non-punitive response to error" (17%), which indicated a culture of blame and fear. The domain with the highest score was "teamwork within units" (71%), which showed a culture of collaboration and support. The researchers also found that some factors, such as hospital size, staff position, and work hours, had a significant impact on the attitudes of hospital staff toward patient safety. In contrast, other factors, such as gender and specialty, did not. The researchers concluded that the PSC in Palestinian public hospitals was suboptimal and needed improvement. This study emphasized the main obstacles to patient

safety in hospital treatment, including developing a punitive and blame culture, underreporting events, a lack of open communication, and insufficient managerial support.

A recent study was conducted by Zabin et al. (2022) at a university hospital in Palestine to assess nurses' perceptions of PSC. The study utilized a convenient sample of 107 nurses from different units. The researcher used a web survey of the Arabic version of HSOPSC. The study found that the nurses had positive perceptions of PSC in some dimensions, such as “Organizational Learning—Continuous Improvement”, “Teamwork Within Units”, and “Feedback & Communication About Error”. However, the study also found that the nurses had negative perceptions of PSC in other dimensions, such as “nonpunitive response to error”. The study also examined the relationship between PSC dimensions and outcomes and found that “communication openness” was a predictor of the overall perception of safety, and “feedback and communication” was a predictor of event reporting. The study also explored the relationship between PSC and demographic variables and found that age predicted PSC. The study concluded that hospital management needs to improve the incident reporting culture and address patient safety challenges.

2.3 Job Stress

Job stress is a significant problem in organizations (Wani, 2013). It is a widespread issue that has a negative effect on individuals and organizations. It is particularly problematic in healthcare (Okuhara et al., 2021). Stress “is the nonspecific response of the body to any demand made upon it” (Serban, 2012). It is a multifaceted concept taken from the Latin word “stringere,” which means to pull tight and is used to depict adversities and suffering (Cooper & Cartwright, 1997). People under distress, which is a harmful type of stress, will not be able to meet their duties at their job, which can lead them to compromise their quality of work life (e.g., unhappiness and poor moral standards) (Ismail et al., 2010; Ismail et al., 2009).

However, people who experience eustress, which is a positive type of stress, will be able to fulfill their job duties, which could make their work lives more satisfying (e.g., happiness and good moral standards) (Ismail et al., 2010).

Job stress is defined as unhealthy psychological and physical reactions that arise when there is a contradiction between a staff's traits, needs, or expectations and the demands of their position within an organization (Yalcin Akgul & Aksoy, 2021). Adverse events like work errors, lost productivity, a feeling of unease, sickness, or a decline in performance may happen when healthcare employees cannot deal with the stressors. Consequently, stress management is crucial for patient safety (WHO, 2009). Workers' physical and mental health are both affected by job stress (Williams et al., 2018). Reducing stress could improve job satisfaction, staff attitude, and work performance. However, higher job stress could increase employees' turnover intentions (Wang et al., 2022) and physical health issues and lower their morals and attitudes (Babapour et al., 2022).

Moreover, employees who experienced higher levels of job stress reported impacts on their performance and troubles in focusing (Vijayan, 2018). Job stress also causes employees to be less committed to their work and less productive (S. Jameel & Ahmad, 2020). However, reducing role ambiguity, creating appropriate job descriptions, and having a supportive manager at work could all help employees feel less stressed about their jobs (Hoboubi et al., 2017). Studies have shown that stress can also compromise one's ability to perform effectively since it impairs one's ability to pay attention, concentrate, make decisions, and build trusting relationships with patients (Bower & Segerstrom, 2004; Emmett, 2013; Linden et al., 2001; McGonagle & Kessler, 1990).

It has been shown that healthcare staff are more vulnerable to job stress and its adverse effects than other professions (Birhanu et al., 2018). In a study conducted in Ethiopia,

Birhanu et al. (2018) discovered that health professionals experience high levels of job stress. High levels of job stress are widespread among nurses; it was found that one of the three occupations with the highest levels of stress was nursing (Okuhara et al., 2021). Furthermore, a study conducted in Sweden showed that more than 80% of nurses felt stressed in their jobs (Petterson et al., 1995). Nursing is a stressful profession (Babapour et al., 2022), and it requires providing high-quality care alongside high emotional burdens while facing stressful situations and a wide variety of work stressors (Keykaleh et al., 2018). According to a study conducted by Sarafis et al. (2016), the factors contributing to nurses' job stress include their interpersonal connections and the nature of their work, which is challenging, complex, and characterized by a mix of high responsibility and low authority.

Moreover, nurses comprise 50% of all healthcare practitioners in several countries ("Global Perspectives: A new look at international nursing," 2018). They are essential to the administration and front-line execution of health interventions (WHO, 2022). However, staff shortages, workload pressure, fewer reporting of incidents, and inadequate training for the staff all influence the occurrence of stress and adverse outcomes, which contributes to creating an atmosphere where errors can occur and patients can experience injury (Wami et al., 2016). Moreover, high demands, much duty, and little authority have been identified as significant stressors (Jacobs & Lourens, 2016). Although mandatory overtime, the complexity of hospitalized patients, the working environment, and the unit manager's attitude are factors that can cause nurses job stress (Babapour et al., 2022; Geiger-Brown & Lipscomb, 2010).

Studies have suggested that job stress can arise from a combination of high psychological needs, insufficient control over the job-production cycle, and inadequate social support from peers and supervisors (Alves et al., 2004; Araújo et al., 2003). Another study

showed that job stress can be increased in hospital settings by unfavorable circumstances like high job demand, the shifting process, and bureaucracy (Leao et al., 2017). Furthermore, hospital staff may be affected by stress and the job environment (Suptitz Carneiro et al., 2021). Additionally, job stress among healthcare workers may negatively affect the quality of care provided (Demir et al., 2007). Studies have indicated that job stress and incidents due to environmental stress endanger patient safety because fatigued health personnel are more likely to make mistakes, affecting the safety culture (Andolhe et al., 2015; Leao et al., 2017). Working in an unhealthy job environment and having difficulty coping with job stress may negatively affect the safety culture (Suptitz Carneiro et al., 2021).

In this section, the researcher reviewed various studies examining perceived job stress among nurses and its associated factors.

2.3.1 Globally

Faremi et al. (2019) conducted a descriptive study investigating the frequency and perception of stress among nurses in two Nigerian hospitals. The study involved 183 nurses using random sampling. The researchers used the NSS. Findings highlighted that the most common job stressors were related to “workload”, such as insufficient staff, performing procedures that patients experience as painful, and lack of resources, which lead to a high-stress environment for nurses. The second common stressors were related to “dealing with death and dying”. However, the “lack of staff support” was the least stressful aspect.

Furthermore, the study showed that there was no significant correlation between nurses' experience and the level of stress. Moreover, the research underscores the considerable consequences of nurse stress on healthcare delivery, including increased absenteeism, errors in patient care, and reduced productivity, which also incurs substantial

financial costs to healthcare systems. The study suggests implementing strategies to manage stress effectively, such as problem-solving approaches, conflict management training, and promoting a supportive work environment to enhance nurses' well-being and job satisfaction.

Kwiecien-Jagus et al. (2018) Investigated the relationship between occupational stress and job satisfaction among nurses in Poland and Lithuania. Their study utilized a descriptive comparative design and used two tools: The NSS and the Job Satisfaction Survey. The study involved 230 randomly selected nurses from both countries. It found that interpersonal "conflicts between nurses and doctors" and dealing with "death and dying" were significant job stressors. Moreover, a negative correlation between stress and job satisfaction was observed, indicating that higher stress levels correspond to lower job satisfaction. Additionally, the study investigated the relationship between stress levels and nurses' socio demographics. It found a significant correlation between age, service length, residence place, and stress levels. At the same time, no significant correlation was found between the levels of education and stress levels. The study highlighted significant differences in job satisfaction levels between Polish and Lithuanian nurses, with both groups reporting high levels of stress and dissatisfaction.

Justine et al. (2018) Conducted a study investigating the prevalence of work-related stress among nurses in a private hospital in Singapore. The study used the International Stress Management Association (ISMA) self-administered questionnaire. The results indicated significant work-related stress among the participants, underscoring the importance of developing effective stress management strategies within healthcare settings.

Halpin et al. (2017) Conducted a longitudinal mixed-methods study to investigate newly qualified nurses' workplace stressors and stress experiences during their first year of work. The study found that "workload" was the most significant stressor, with inadequate

staffing and managing multiple roles being common challenges. Incivility in the workplace also emerged as a stressor, while “having a supportive team” was beneficial. Furthermore, the study found a significant association between age, level of experience, and the frequency of stressors. Prior healthcare experience is highlighted as a valuable asset for these nurses, potentially influencing future recruitment criteria for nurse education providers. The study suggests that organizations should proactively manage workloads and address workplace incivility to aid in the transition of newly qualified nurses.

Tsegaw et al. (2022) Conducted a cross-sectional study using a random sampling among 304 nurses in Ethiopia. The study aimed to identify the factors contributing to work-related stress in private and public healthcare settings. The researchers used the Expanded Nursing Stress Scale (ENSS) to measure nurses' job stressors. The research found that 48.4% of nurse’s experienced work-related stress, with a higher prevalence in public hospitals (51.6%) compared to private hospitals (46.4%). The findings revealed that most job stressors were related to “workload” and “death and dying”. Key determinants of stress included the nurses’ educational level, the department they worked in, job satisfaction, gender, and years of experience. The study underscores the need for interventions to manage workloads and provide stress management training to alleviate work-related stress among nurses.

An integrative review was conducted by Mohammed (2019) to explore the concept of work stress among nurses. The review highlighted the global concern of work stress among healthcare professionals, particularly nurses, and its association with job dissatisfaction, burnout, absenteeism, turnover, and stress-related illnesses. These factors pose risks to both nurses’ performance and patient safety. The findings revealed that evaluations of nursing work environments are strongly linked to burnout. Factors contributing to job stress include the “excessive workload of nursing staff”, “complexity of patient care activities”, “poorly

organized workplace", and "lack of support from supervisors", all of which result in unsafe care provision. The study emphasized that nurses frequently experience occupational stress due to the inherent demands of the nursing profession. The researchers suggested that hospitals should do more to help nurses by making their workplaces better places to work. This means having a team that works well together and giving nurses the power they need to do their jobs well, all of which can help lower the stress they feel at work.

2.3.2 Regionally

A cross-sectional study by Al-Yaqoubi and Arulappan (2023) was conducted among nurses in five tertiary care hospitals in Oman. It involved 383 nurses selected using proportionate sampling. The researchers used the NSS to investigate specific factors contributing to work-related stress experienced by nurses in Oman. The study sheds light on the various stressors Omani nurses face in their professional environment, aiming to identify key sources of stress that impact their well-being and job performance. Findings showed that "workload" and "emotional issues related to death and dying" were the most work-related stressors. However, "lack of support" and "inadequate preparation to meet the emotional demands of patients and their families" were the least stressors. Furthermore, the study found that night shifts, reduced job satisfaction, and staff positions were associated with work-related stress. The study provided valuable insights into the challenges and stressors that nurses encounter in their roles, highlighting the importance of addressing these issues to create a more supportive work environment for nurses and enhance their overall job satisfaction and effectiveness.

Alenezi et al. (2018) Conducted a study among nurses working in governmental hospitals and primary healthcare centers in Saudi Arabia to examine work-related stress. The study involved 347 nurses and used the NSS. The findings revealed that "workload" was the

most common stressor, while “inadequate preparation” was the least. It also identified “conflicts with physicians,” “lack of support,” and “uncertainty regarding hospital treatment” as significant sources of stress in primary healthcare centers. The study also examined the relationship between demographics and work stress and found that factors such as age, marital status, nationality, and job position contribute to stress. The study concludes that the sources and factors of work-related stress vary with the nurses’ working environment, suggesting that understanding these perceptions can inform policies for managing work stress.

Amarneh (2017) Conducted a comparative study between teaching and non-teaching hospitals” to explore the differences in work stressors and social support behaviors among nurses in Jordanian teaching and non-teaching hospitals. The author used the NSS to investigate nurses’ stressors. The study involved a convenience sample of 172 nurses from eight hospitals. The findings showed that the most common work stressors among nurses in teaching and non-teaching hospitals were related to “death and dying” and inadequate preparation”. The study found that work stressor behaviors vary significantly between these hospital types, with work shift being a predictor of stressors in teaching hospitals and work shift, education level, and nursing care model being predictors in non-teaching hospitals. The research highlights the importance of assessing and managing nurse stressors and providing social support to create a healthy work environment.

Moreover, a similar study was conducted by Mrayyan et al. (2021) to examine and compare nurses’ job stressors and social support behaviors among Jordanian nurses working in public, private, and teaching hospitals. The study used the NSS to examine job stressors. It was conducted using a convenience sample of 464 nurses from 13 hospitals. Findings showed that the most common job stressors were related to “death and dying” and “workload” among

the three types of hospitals. The study found that overall job stressors did not differ significantly among nurses working in teaching, public, and private hospitals. However, when looking at specific aspects of job stressors, teaching, and public hospitals showed notable differences. Despite these variations, the type of hospital did not predict the levels of job stress when accounting for the nurses' characteristics. Furthermore, the organizational structure, level of education, age, schedule, and nursing care model were all significant predictors of nurses' job stressors. The study suggests that hospital administrators should address the factors contributing to job stress to help nurses manage their stress more effectively.

A cross-sectional study was conducted by Babapour et al. (2022) to investigate the relationship between job stress and its effects on nurses' quality of life and their caring behaviors. The study was conducted among 115 nurses from two teaching hospitals in Iran. It used a survey of the ENSS to measure nurses' stressors. The findings highlighted that the highest job stressors were related to "death and dying" and "inadequate emotional preparation". However, the lease stressors were related to the "discrimination" subscale. Moreover, the study found that age, gender, employment status, and staff working unit had a significant relationship with job stress. The study emphasizes the need for strategies to reduce job stress to improve nurses' well-being and patient care outcomes.

2.3.3 Job Stress in Palestine

Few studies were conducted in Palestine investigating nurses' job stressors. One study was conducted by Ayed et al. (2015) to identify the sources of work-related stress and its impact on the physical and mental health of Palestinian nurses. The study was conducted in governmental hospitals. It utilized a descriptive cross-sectional design and was conducted among 82 nurses working in intensive care and neonatal units at North West Bank hospitals

using the NSS. Results found that the most common work stressors were “dealing with death and dying” and “workload”. Nearly half of the nurses reported suffering from physical and mental health issues. Furthermore, the results showed no significant correlation between sources of work stress and work experience, gender, and level of education. The study established a significant correlation between work stress and mental health problems and a notable relation between work stress and physical health problems. The study emphasizes the need for administrative support and training programs to help nurses cope with stressful conditions in healthcare facilities.

Another study was conducted by Jaradat et al. (2016) among 542 nurses working in hospitals and primary healthcare centers in Hebron city of Palestine. The study revealed that 40.2% of nurses reported highly stressful working conditions. Factors significantly linked to higher stress levels included the nurse’s level of education, financial responsibilities towards extended family, employment in non-governmental settings, rotating shift patterns, and extended work hours each week. Furthermore, the study showed that male nurses reported higher perceived stressful working conditions than female nurses. The study suggests a need for targeted strategies to alleviate stress, particularly for those with additional educational and familial obligations and those with demanding work schedules.

Umro (2013) Conducted a cross-sectional study as part of his thesis. The study involved 450 nurses working in 5 governmental and non-governmental hospitals in Nablus city of Palestine. The author used the NSS to measure nurses’ job stress sources. Findings showed that the most perceived job stressors were related to “workload,” “conflict with other nurses,” and “death and dying”. Nurses from non-governmental hospitals reported higher levels related to “conflict with other nurses”. Furthermore, nurses' experience was significantly associated with stressors related to “uncertainty concerning treatment”. The

study concludes that nurses' stress levels are significant and concerning. To mitigate this stress, increasing the number of nursing staff and reducing tasks unrelated to nursing could be beneficial.

Another study was conducted by Qtait (2018) to assess the psychological stress levels of female nurses in the southern region of Palestine. The study utilized a quantitative approach and distributed the NSS to female nurses in Hebron and Bet Jall hospitals. The findings indicated a moderate mean stress level among participants. The study also found correlations between stress levels and factors such as age, social status, and family members. However, there were no significant differences in stress levels due to income or hospital type. The study highlights the need to address the demands placed on female nurses, which include balancing work with family and home responsibilities, to reduce stress.

In his doctoral dissertation, Alhajjar (2013) assessed the perceived job stress of hospital nurses working in the Gaza Strip-Palestine. His study utilized a quantitative survey design using a modified version of the NSS to investigate the sources and severity of job stress. The survey was distributed among 1500 nurses working in 16 hospitals. The results revealed that the most severe and frequent job stressors were related to “workload” and “death and dying”. At the item level, the most severe job stressors were “not enough staff to adequately cover the unit”, “lack of drugs and equipment required for nursing care”, and “unpredictable staffing and scheduling”, respectively. The most frequent job stressors were “not enough staff to adequately cover the unit”, “watching a patient suffer”, and “lack of drugs and equipment required for nursing care”, respectively.

Moreover, the study found that the severity and frequency of job stressors were associated with age, night shifts, specialization, qualifications, hospital type, and experience. In conclusion, the study suggests that nursing in Gaza hospitals is highly stressful, and there

is a need for focused efforts to develop programs that can effectively reduce stress levels among Palestinian nurses. This could involve increasing staff numbers, ensuring adequate supplies, and providing support to manage the emotional challenges of the profession (Alhajjar, 2013).

Ay et al. (2017) Conducted a study to identify work stressors, coping strategies, and resilience factors among nurses in the Gaza Strip in Palestine and to understand how these stressors and coping methods influence resilience. The researchers used the NSS to explore the work stressors. The study was conducted on 275 nurses selected randomly from different healthcare sectors. The findings showed that the most common work stressors were in the domain of “death and dying” and “uncertainty concerning treatment”. On the item level, the most frequent stressors for nurses include “witnessing patient deaths,” “the absence of physicians during such times,” “criticism from supervisors,” and “the fear of making errors in patient care.” Furthermore, the findings showed no significant relationship between nurses’ demographics such as gender, age, years of experience, and work stress. The study concluded with a call to enhance the support for nurses, particularly those new to the field, by creating a more supportive and less stressful work environment. It suggested that nurse educators, managers, and administrators play a crucial role in this process. The insights gained can guide human resource managers in developing coping strategies to reduce the stress nurses face in their demanding roles.

2.4 Job Stress and PSC

Different studies have discussed the relationship between job stress and PSC; however, there are few. A recent systematic review conducted by Zabin et al. (2023) found three studies out of seven that directly discussed the relationship between job stress and PSC, while the rest addressed this relationship indirectly. This systematic review showed a

significant negative relationship between job stress and PSC from the reviewed articles. However, the study showed that the strength of this relationship was not consistent between all articles. Some articles have found a weak relationship, as was found by Yalcin Akgul and Aksoy (2021), which was explained by the small sample size studied in one area.

Furthermore, other articles assessed the relationship between specific domains of job stress and PSC. For instance, Al Ma'mari et al. (2020) evaluated the association between workload -the most common source of job stress- and other factors like fatigue and burnout with PSC. They found a significant negative correlation between these factors and PSC. Moreover, one article in this systematic review found no relationship between nurses' job stress and patient safety (Keykaleh et al., 2018). In the end, the systematic review suggested that actions should be considered to reduce job stress among healthcare staff to improve the quality of care and the perception of PSC.

Job stress was found to correlate with PSC in other studies (Asefzadeh et al., 2017; Chen et al., 2019; Munhoz et al., 2021; Paneerselvam et al., 2022; Sani et al., 2024; Suptitz Carneiro et al., 2021). For instance, Sani et al. (2024) highlighted a significant negative relationship between job stress and PSC among nurses in a tertiary hospital. The study suggested that whenever job stress increases, safety practices will decrease. The study also reported that work-family conflict and difficulty taking leaves were significant predictors of PSC. Moreover, Suptitz Carneiro et al. (2021) studied the relationship between job stress, burnout, and PSC among healthcare staff in a university hospital in Brazil. The study involved 393 healthcare staff from both critical and non-critical care units. They found that employees burnt out or under much pressure at work are more likely to perceive the PSC negatively. They pointed out that staff who worked in non-critical units were more stressed

and burnt out and perceived PSC more negatively, suggesting that this may affect the quality of care provided to patients.

Asefzadeh et al. (2017) Studied the relationship between PSC and job stress among nurses in a university hospital in Iran with a study sample of 380 nurses. They found a significant relationship between PSC and job stress. However, the study assessed the association between PSC dimensions and job stress. It found a significant moderate relationship between “handoffs and transitions” and “feedback and communication” and job stress. At the same time, there was a significantly low relationship between the rest of the PSC dimensions and job stress. The study suggested developing a program that can help reduce levels of job stress among nurses and improve the perception of PSC.

Chen et al. (2019) Research found that job stress significantly affects the perception of PSC. The study surveyed 1,562 nurses in Taiwan to evaluate how job stress and PSC influence patient safety outcomes. The result showed that job stress due to interpersonal relationships and job environment was negatively associated with PSC. The researchers recommend that healthcare administrators take steps to alleviate nurses’ job stress, thereby bolstering PSC and improving care quality.

A study by Hayashi et al. (2020) was conducted in Japan among healthcare workers to assess the relationship between PSC and some factors that influence the workplace and found similar results. The study was conducted in 40 hospitals with a sample of 100 employees from each hospital. The study found that long working hours, night shifts, and a few days off were significantly negatively associated with PSC. These factors were associated with poor health conditions among healthcare staff and may affect their productivity (Peutere et al., 2021). Furthermore, the study suggested that reducing working hours and night shifts could decrease reported events and improve the PSC.

Paneerselvam et al. (2022) Conducted a study among nurses in a teaching hospital in Malaysia to assess the level of job stress and PSC and the association between both. The study was conducted among 188 nurses using a random sample technique. The results showed a significant negative relationship between job stress and PSC. The most correlated domain of job stress was “stress recognition.” The study also showed that most nurses had a negative perception of PSC and high levels of job stress. The researcher suggested that enacting policies that align with the stressors that nurse’s encounter can enhance the culture of patient safety.

The literature emphasizes the importance of assessing the prevalence of job stress and PSC, as well as understanding their interrelationship. Doing so can enhance the working environment and promote patient safety. However, it is noteworthy that no studies have explored the relationship between job stress and PSC in Palestine so far. Consequently, this study aims to address this gap, enabling healthcare managers to identify influential factors and enhance the work environment and PSC, particularly among Palestinian healthcare staff, including nurses.

2.5 Research Gap

The literature review explored existing knowledge on job stress and PSC both globally and within the context of Palestine. Despite this exploration, several significant research gaps emerged, emphasizing the need for further investigation.

The notable gaps included first: a lack of studies on the relationship between job stress and PSC in Palestine. This gap highlights the need to explore this crucial link within the Palestinian healthcare setting. Second: there was limited research on nurses’ job stress in Palestine. Existing studies on nurses’ job stress remain scarce. A comprehensive

understanding of the stressors faced by nurses is essential for targeted interventions and improved well-being. Third: limited studies comparing nurses' perceptions of PSC across hospital sectors. While some research exists on PSC, there is a dearth of studies comparing nurses' perceptions across different hospital sectors in Palestine (e.g., government, private, NGO). Understanding variations in PSC perceptions among nurses working in diverse settings is crucial. Fourth: There was inadequate exploration of key variables such as income, and conducting activities on PSC and job stress in the hospitals. Variables such as income and engagement in PSC and job stress-related activities have received limited attention in the literature concerning their impact on job stress and PSC. Furthermore, certain variables exhibit contradictory relationships, such as gender. Investigating these associations is essential for evidence-based practice. Fifth: Previous research comparing government, private, and NGO hospitals worldwide remains scarce. The study focuses on hospitals in the North West Bank of Palestine, encompassing government, private, and NGO sectors. However, few studies have directly compared job stress and PSC across these distinct hospital types in Palestine. Sixth: The literature lacks studies that employ a mixed-methods approach to explore nurses' perceptions of both job stress and PSC. Combining qualitative and quantitative methods can provide richer insights into these critical aspects of nursing practice.

In light of these gaps, this study aims to investigate the relationship between job stress and PSC within the challenging Palestinian context. Additionally, it seeks to explore whether the mentioned variables play a significant role in shaping nurses' experiences and perceptions.

By addressing these research gaps, this study contributes to enhancing patient safety and promoting well-being among nurses in Palestine.

2.6 Summary

The reviewed literature sheds light on the most common stressors nurses face and their perceptions of job-related stress. Additionally, it explores how nurses perceive PSC and its various components. The literature chapter delves into the associations between job stress, PSC, and factors like nurses' demographics and workplace characteristics. The study identifies stressors in the workplace, highlighting variations across different areas and due to various factors. Additionally, research on the effects of job stress on nurses, including how stress at work affects the standard of nursing care, was reviewed. Research suggests that nurses experiencing higher stress levels may perform less effectively, potentially leading to errors that impact patient safety. However, studies investigating the relationship between job stress and PSC in the region, particularly Palestine, remain scarce. Given Palestine's unique political and stressful situation, nurses' perceptions of job stress and PSC may differ significantly. Studying nurses' perceptions and the relationship between these concepts may help the healthcare system and policymakers develop strategies to provide better care for our people. The study findings enhance existing knowledge and facilitate a deeper understanding by bridging gaps.

Chapter Three

Methodology

3.1 Introduction

This chapter provides a comprehensive overview of this study's methodological approaches and techniques and the rationale behind their selection. It outlines the methodology adopted for this dissertation, including the study design, context, timeframe, target population, sampling strategy, participant inclusion and exclusion criteria, data collection instruments, and ethical considerations. Additionally, this chapter details the procedures for data management and analysis.

3.2 Study Design

This study used an Explanatory Sequential Mixed-Method design. In the initial phase, a cross-sectional study was conducted for the quantitative part; the focus here is on collecting numerical data to examine outcomes or patterns. Following the quantitative phase, a qualitative approach using semi-structured interviews was employed. This phase delves deeper into the subject matter by gathering subjective data through methods such as interviews, focus groups, or content analysis (Aspers & Corte, 2019). The mixed-method approach combines both quantitative and qualitative techniques within a single study or across a series of studies (Creswell & Clark, 2017). Such an approach is particularly beneficial in health research, as it can enhance the robustness of the findings, reduce biases, and yield generalizable and reliable results (Tariq & Woodman, 2013). In this specific study, the mixed-method approach was utilized to obtain a more detailed understanding of the issues related to job stress and the culture of patient safety among hospital nurses. The qualitative data served to elucidate and corroborate the quantitative findings.

The mixed-method design helps gain valid and reliable results (Tariq & Woodman, 2013) on the perception of PSC in Palestinian hospitals and job stress. This approach combined both inductive and deductive methods, utilizing quantitative data from surveys—highlighted by numerical data and correlations—and qualitative data characterized by descriptive words and explanations. As depicted in Figure 6 the process began with the quantitative phase, where data was collected from 16 hospitals in the North West Bank of Palestine using the HSOPSC v2.0 and the NSS instruments. This was complemented by the qualitative phase, which involved gathering subjective insights from nurses via semi-structured interviews. The qualitative data was then analyzed and presented to complement and enhance the understanding of the quantitative results.

The study's design adopted a sequential mixed-method approach, beginning with the quantitative phase and progressing to the qualitative phase. This strategy facilitates a more profound comprehension by interpreting the findings from both phases (Hesse-Biber, 2010). The data from the quantitative and qualitative stages were combined, synthesized, and analyzed collectively. The primary objective of employing this mixed-method design was to reinforce the robustness of the study's conclusions. The quantitative phase provided dependable PSC and job stress metrics, including comparative analyses. In contrast, the qualitative phase revealed additional insights and underlying factors that might not be as apparent through quantitative methods alone.

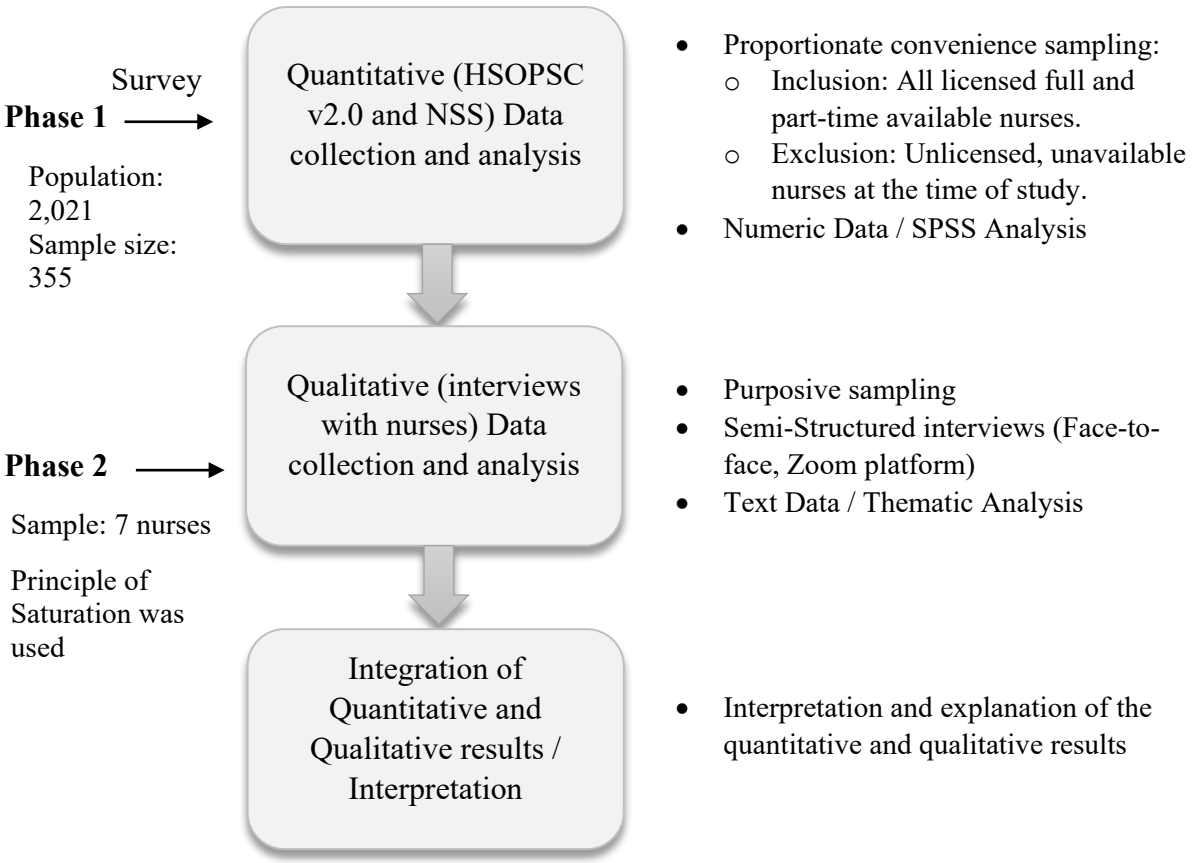

Figure 6 *Explanatory Sequential Mixed-Method Design Flowchart.*
(HSOPSC: Hospital Survey on Patient Safety Culture. NSS: Nursing Stress Scale)

3.2.1 Quantitative Method

Quantitative research is "a means for testing objective theories by examining the relationship among variables" (Creswell, 2009). The quantitative approach was selected for its ability to quantify the prevalence and intensity of job stress and PSC among nurses. It provides insights into the extent of nurses' exposure to job stressors. This method produces numerical data that is crucial for testing hypotheses, establishing relationships, or clarifying phenomena. It encompasses two principal methodologies: experimental and non-experimental. The experimental design involves administering an intervention to a segment of the study population within a controlled environment, often alongside a control group that does not receive the intervention (Koh, 2020). This design is focused on investigating the relationship between exposure and outcomes (Chidambaram & Josephson, 2019).

Conversely, the non-experimental approach entails gathering data from participants in their natural settings (Chew, 2019), aiming to explore everyday occurrences, individuals, and contexts or to portray established phenomena (LoBiondo-Wood & Haber, 2021). For this study, surveys were deployed to assess nurses' perceptions of PSC and job stress, hence adopting the non-experimental design.

The cross-sectional survey method was selected for data collection in this study. This method is advantageous for assessing participant exposure and outcomes at a specific time (Setia, 2016). Such studies can be either analytical or descriptive (Alexander et al., 2015), with descriptive cross-sectional studies detailing the prevalence of particular health outcomes. The present study used a non-experimental descriptive cross-sectional quantitative approach to measure nurses' perceived job stress and their perception of PSC. A self-administered survey was the instrument of choice, a common tool in quantitative descriptive research that provides a numerical depiction of a sample or population's characteristics (Creswell & Creswell, 2017). Surveys typically include standardized questions and descriptive and inferential statistical techniques are used to investigate the data. This technique is cheaper, quicker, takes less time, is more confidential, has a higher response rate, and can assess correlations. Despite these advantages, surveys may also face challenges such as low response rates, potential misunderstandings of survey items, and the risk of surveys being completed by unintended respondents (Wang & Cheng, 2020).

In this study, data were collected using two established and validated questionnaires. The HSOPSC v2.0 was utilized to assess nurses' perceptions of PSC. At the same time, the NSS was employed to measure job stress among nursing staff. The quantitative component adhered to the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines for cross-sectional studies. These guidelines address a common issue

in reporting observational studies: the lack of sufficient detail to fully evaluate the study's strengths and weaknesses (Pocock et al., 2004; Tooth et al., 2005). The STROBE statement provides a framework for researchers to effectively describe observational research, thereby aiding reviewers, editors, and readers in critically assessing and understanding the study (Vandenbroucke et al., 2007). It includes a checklist covering various aspects of the study to ensure a clear presentation of its procedures and findings (Vandenbroucke et al., 2007).

3.2.2 Qualitative Method

Qualitative research is "a means for exploring and understanding the meaning individuals or groups ascribe to a social or human problem" (Creswell, 2009). It relies on non-numeric and non-statistical methods to collect, analyze, and present findings (Bhangu et al., 2023). This type of research captures people's perspectives, behaviors, and experiences (Renjith et al., 2021). It can be conducted as an independent study focusing solely on qualitative data or as part of a mixed-methods study incorporating both qualitative and quantitative data. Fundamentally, qualitative research seeks to answer open-ended "how" and "why" questions, which are inherently challenging to quantify (Cleland, 2017). In contrast to the quantitative aspects of the present study, qualitative methods offer a more inductive and thorough investigation into nurses' viewpoints regarding PSC and job stress.

In the qualitative segment of this research, a phenomenological approach was employed. Phenomenology is a research method focused on capturing the core of a phenomenon through the perspectives of those who have experienced it (Neubauer et al., 2019). It aims to interpret the importance of these experiences by considering both the events and the context in which they are perceived. While quantitative methods might not always capture the subtleties of experiences, attitudes, and behaviors effectively (Almeida et al., 2017), qualitative research offers a venue for participants to express their thoughts, feelings,

and experiences, thus providing insights into their viewpoints during particular instances (Tenny et al., 2024). The qualitative method explores and comprehends the investigated phenomena using techniques such as interviews and focus groups. It leveraged narrative and imagery to explore, discern, or construct phenomena relevant to practice (Tenny et al., 2024). The qualitative method in the present study facilitated the gathering of comprehensive information about the various facets of job stress and staff's experiences, opinions, and behaviors regarding job stress and PSC. Moreover, it enabled the researcher to pose in-depth questions that surveys could not address, allowing for the collection of subjective data and a deeper understanding of nurses' experiences with job stress and PSC.

3.2.3 The Utilization of Mixed-Method Design

Mixed-method research is "an approach to inquiry that combines or associates both qualitative and quantitative forms. It involves philosophical assumptions, using qualitative and quantitative approaches, and mixing both approaches in a study" (Creswell, 2009). Using mixed-methods design was strongly encouraged in health field research (Creswell & Creswell, 2017; Pitchforth et al., 2014). The mixed-methods study design aims to achieve a more in-depth and better understanding by giving an expanded view that can improve the phenomena' description and comprehension (Creswell & Creswell, 2017). By employing both quantitative and qualitative methods, mixed-method research yields more substantial findings than those obtained through a singular approach (Creswell & Creswell, 2017). Consequently, it allows for more compelling conclusions, encompasses a broader array of perspectives, and addresses complex research questions that may be beyond the scope of other methodologies (Tashakkori & Teddlie, 2003).

Different researchers advocated pragmatism as the preferred paradigm underpinning mixed-method research (Maarouf, 2019; Morgan, 2016). This paradigm prioritizes the

research questions and their practical implications over strict adherence to a particular methodology (Creswell & Clark, 2017). In pragmatic research, methodological techniques are chosen by their effectiveness in addressing the research questions rather than a researcher's commitment to a specific philosophical stance (Bryman, 2006). Because research questions are given such a high priority in pragmatism, it is possible, desirable, and necessary to conduct combined quantitative and qualitative research to address specific research questions or particular sets of research questions (Bryman, 2006). Pragmatism is often seen as a methodical approach to problem-solving that necessitates identifying a situation that is socially placed and responding to it appropriately (Kaushik & Walsh, 2019). It acknowledges the importance of values in research and encourages using both quantitative and qualitative methods to explore the depths of a study's compatibilities and distinctions, as noted by Barbour (2013). Thus, applying mixed methods within the pragmatic framework facilitates collecting and analyzing both subjective and numerical data (Teddlie & Tashakkori, 2009), allowing researchers to tailor their investigative focus based on personal values and existing literature.

The current study aims to assess nurses' perceptions of PSC and job stress and explore the relationship between both. Employing a combination of quantitative and qualitative methods is advantageous, as it provides a more comprehensive and nuanced understanding of the nurses' perspectives and looks into possible hidden sources of stress that may affect their perception of PSC. Quantitative analysis is valuable for measuring relationships and identifying sources. On the other hand, qualitative analysis provides a deeper understanding of these relationships. By integrating the two, the study combines and interprets findings from both quantitative and qualitative data, offering a more comprehensive view of the results.

3.3 Setting

This study was conducted across various hospitals in the Northern West Bank of Palestine, encompassing five major cities and 16 hospitals. The biggest city is Nablus, with these hospitals: An-Najah National University Hospital, Specialized Arab Hospital, Nablus Specialty Hospital, Arab Women's Union Hospital, St. Luke’s Hospital, Rafidia Surgical Hospital, and Watani Hospital. The second city is Tulkarm, which has Al-Isra Specialized Hospital and Martyr Dr. Thabet Governmental Hospital. The third city is Jenin, which includes these hospitals: Shifa Surgical Hospital, AL Amal Hospital, Ibn Sina Specialized Hospital, Alrazi Hospital, and Martyr Dr. Khalil Suleiman Governmental Hospital. The fourth city is Qalqilya, which includes Dr. Darwish Nazzal Governmental Hospital. The fifth city is Tubas, which includes Tubas Turkish Governmental Hospital.

3.4 Period of the Study

The data collection for this study took place between June 2023 and September 2023. The researcher distributed the questionnaires with the assistance of experienced research assistants who had undergone thorough training.

3.5 Study Population

The study population consisted of 2,021 nurses working in 16 hospitals. The nurses in these hospitals had different backgrounds and academic qualifications.

3.6 Sample and Sampling Technique

The study sample was selected using proportionate and convenience sampling methods. Initially, the researcher obtained the total number of nurses working in various hospitals from hospital administrations and the MOH. Each hospital then represented a specific percentage of the overall participant pool. Since some nurses work in multiple

hospitals, the research team requested that they refrain from completing another questionnaire if they had already done so in their other workplace. The questionnaire underwent a pilot test to assess its applicability and time requirements.

Convenience sampling is a type of non-probability sampling that chooses participants that are convenient to the researcher based on specific criteria such as readiness to participate, ease of access, and availability (Farrokhi & Mahmoudi-Hamidabad, 2012). It is the most common non-probability sampling technique used in this type of study (Jager et al., 2017). In this study, the researcher used convenience sampling to collect data from nurses who willingly participated and were accessible during the survey. This method was also easy to apply and cheaper than other methods (Jager et al., 2017). Moreover, this method helped the researcher to overcome the challenges of traveling between the cities in the North West Bank, which was affected by the unstable political situation and the checkpoints. The study employed convenience sampling as the chosen method due to practical limitations such as time, budget, and logistical constraints. Despite the inability to access a truly random or representative sample, this approach allowed the researcher to select a diverse group of nurses from various units.

For the qualitative part, participants were recruited purposively to choose specific participants with good experience to provide better information and to achieve diversity in participants' opinions and experiences (Creswell & Clark, 2017). Purposive sampling is a technique to selectively choose study participants pertinent to the research questions (Ago & Bekele, 2022). No standard specifies how many interviews should be conducted in a single qualitative study (Ago & Bekele, 2022). To obtain two independent datasets and to provide diverse perspectives from each mixed-method approach, participants who enrolled in the qualitative interviews did not participate in the survey (Creswell & Clark, 2017). The

principle of saturation for the purposive sampling technique in qualitative studies was used (Dawson, 2002).

3.7 Sample Size Calculation

The researcher used the Raosoft Inc. sample size calculator (Raosoft, 2004) to calculate the sample size. When calculating the sample size for studies, a commonly used approach assumes a 5% margin of error, 95% confidence level, and 50% response distribution, and the resulting sample size was 323 nurses. This study sampling frequently utilizes these intervals because they balance precision and confidence. 10% was added as an attrition rate, and the final sample size was 355 nurses. These nurses were distributed proportionately, as seen in Table 1.

Table 1 *Distribution of the Sample*

City	Hospital	Type of Hospital	Nurses Number	Sample size
Nablus	NNUH	NGO	270	47
Nablus	Specialized Arab Hospital	Private	175	29
Nablus	Nablus Specialty Hospital	Private	105	18
Nablus	Arab Women's Union Hospital	NGO	87	16
Nablus	St. Luke’s Hospital	NGO	59	11
Nablus	Rafidia Surgical Hospital	MOH	270	47
Nablus	Watani Hospital	MOH	85	16
Jenin	Ibn Sina Specialized Hospital	Private	121	22
Jenin	Alrazi Hospital	Private	100	18
Jenin	AL Amal Hospital	Private	25	4
Jenin	Shifa Surgical Hospital	Private	20	3
Jenin	Martyr Dr. Khalil Suleiman Governmental Hospital	MOH	254	43

Tulkarm	Al-Isra Specialized Hospital	Private	80	15
Tulkarm	Martyr Dr. Thabet Governmental Hospital	MOH	184	33
Qalqilya	Dr. Darwish Nazzal Governmental Hospital	MOH	96	17
Tubas	Tubas Turkish Governmental Hospital	MOH	90	16
Total			**2021**	**355**

3.7.1 Inclusion and Exclusion Criteria

The study targeted a sample of 355 licensed nurses from various departments in the selected hospitals. All available nurses during the study period were included, without any restrictions, based on their demographic characteristics.

3.7.1.1 Inclusion Criteria. All licensed nurses who were either fully employed or working part-time in the 16 hospitals, graduated from a recognized college or university, were available during the study, and agreed to participate were eligible. These same criteria were also applied during the pilot test.

3.7.1.2 Exclusion Criteria. The study excluded nurses not registered as qualified nurses with the Palestinian Nursing Association. These nurses might lack official degrees or have relied solely on training received long ago when nursing colleges were scarce. Additionally, nurses who were unavailable during the study period were excluded. Furthermore, participants who had already participated in the pilot test were excluded to prevent bias from repeated questionnaire responses.

3.8 Measuring Instruments

3.8.1 Quantitative Part

The study utilized a self-administered questionnaire comprising three sections. The first section captured the demographic characteristics of the participants. The second section employed the HSOPSC tool developed by the AHRQ to assess the perceptions of PSC (Nieva & Sorra, 2003). Lastly, the third section incorporated the NSS, a widely used instrument for measuring job stress intensity, frequency, and sources among nurses in hospital settings, originally developed by Gray-Toft and Anderson (1981).

3.8.2 Demographic Data

The first section of the questionnaire contained demographic data for the participants, including gender, age, area of residence, marital status, academic qualification, and subspecialties; workplace characteristics, including income, working experience in the profession, working hospital, the number of night shifts per week, and whether hospital activities were conducted to reduce job stress and promote a PSC (see Appendix A).

3.8.2 Hospital Survey of Patient Safety Culture (HSOPSC)

The second section included the SOPS Hospital Survey Version 2.0, also referred to as HSOPSC, which is described in Appendix B. The Arabic version of this tool was translated by the Saudi Patient Safety Center (SPSC) (2022). Originally developed by (Nieva & Sorra, 2003) in 2003 and publicly released in 2004, this tool has been widely utilized in various languages across the globe (Reis et al., 2018; Sorra et al., 2021). In 2019, the tool underwent updates by the AHRQ based on extensive feedback from researchers and users. Pilot testing for the latest version occurred in 44 hospitals in 2017 and 25 hospitals in 2019, with the final survey publicly released in 2019 (Sorra et al., 2019).

This tool is used to assess hospital PSC and has been reported to have very good internal consistency. In the updated version, the Cronbach alpha for the composites ranged from 0.67 to 0.89 (Agency for Healthcare Research and Quality, 2021). The present study's Cronbach alpha scored 0.80, indicating very good reliability.

The tool consists of 40 items. In the first eight items, one survey question asked participants how many patient safety incidents they had reported, another survey question asked participants to rate the overall perception of patient safety in their workplace or unit, and six survey items on participants' demographics, including their hospital and unit working experience, working unit, position, number of working hours per week, and if there is direct contact with patients). The remaining 32 items are grouped into ten composite measures, each comprising two or more items that assess areas of PSC (see Appendix C). This tool utilized 5-point agreement scales (ranging from 'Strongly disagree' to 'Strongly agree') or frequency scales (from 'Never' to 'Always'). Additionally, it offered the option of "Does not apply or Do not know" and provided open-ended comments regarding hospital activities affecting patient safety. To calculate composite scores, negative responses (Strongly disagree/Disagree and Never/Rarely) were combined, as were positive responses (Strongly agree/Agree and Most of the time/Always). The lowest responses' combined percentages represented the negative score, while the highest combined percentages represented the positive score. Some items are negatively worded; the positive score for these items was the lowest, and the highest was the positive score. The overall score for each composite was determined by averaging the percentage of positive responses across its elements.

3.8.3 Nursing Stress Scale (NSS)

The third section of the questionnaire included the Arabic version of the Nursing NSS translated by Alhajjar (2013) from the original scale developed by Gray-Toft and Anderson

(1981) (see Appendix D). The NSS is widely recognized and extensively utilized among nurse researchers due to its ability to accurately reflect the various aspects of nursing stress. Based on literature and interviews with nurses, doctors, and chaplains, 34 potentially stressful scenarios were incorporated into the scale (Gray-Toft & Anderson, 1981). These scenarios were administered on a scale to a sample of 122 nurses working across different departments in large general and private hospitals. The chosen units have patients with diverse medical conditions requiring various nursing skills and care, thereby exposing these nurses to multiple stressors. The scale was re-administered to a sample of 31 nurses to assess reliability, demonstrating satisfactory consistency. Internal consistency coefficients ranged from 0.79 to 0.89 (Gray-Toft & Anderson, 1981). The NSS has been successfully used in Arabic countries and has shown excellent internal consistency. Some of the reported Cronbach alpha in studies were as follows: 0.914 (Ali et al., 2021), 0.94 (Shdaifat et al., 2023), 0.89 (Hendy et al., 2021), 0.92 (Amarneh, 2017), 0.933(Aqtam et al., 2023). The translated Arabic version used in this study showed excellent internal consistency, with a Cronbach's alpha coefficient of 0.87 (Alhajjar, 2013). The present study's Cronbach alpha scored 0.92, representing the tool's excellent reliability.

This NSS comprises 34 items designed to assess the frequency of stress caused by certain conditions among nurses while they perform their tasks. The response is based on a 4-point Likert scale to rate the sources of stress and the frequency of these stressors: 0 for "Never," 1 for "Occasionally," 2 for "Frequently," and 3 for "Very Frequently." Higher scores indicate greater stress frequency. The NSS includes seven subscales: "Death and dying," "Conflict with physicians," "Inadequate preparation," "Lack of support," "Conflict with other nurses," "Workload," and "Uncertainty concerning treatment" (Gray-Toft & Anderson, 1981). Individual item responses are summed to calculate subscale and overall scores. High overall scores indicate elevated job stress, while low scores suggest lower stress

levels. Although the NSS lacks specific mean values or cut scores, higher scores correspond to increased stress levels (Saleh et al., 2013). NSS scores allow the comparison of stress levels across nurse groups (e.g., by unit, specialty, or demographics) and the identification of common stressors. To make a meaningful comparison, this study utilized a method similar to previous studies (Al-Yaqoubi & Arulappan, 2023; Portero de la Cruz & Vaquero Abellan, 2015). The scoring for the NSS involves calculating each item's mean and standard deviation. The Arithmetic Mean (AM) was utilized to measure the most frequent stressful subscale. It involves summing the scores of all items within a subscale and dividing by the number of items in that subscale.

3.9 Pilot Testing

A pilot study is a small-scale investigation often carried out before the main study to assess its validity and feasibility (In, 2017). It serves to identify potential issues and flaws in research tools and protocols before their use in the primary study. Additionally, the pilot study allows researchers to practice with the proposed participants, location, and approach (Hassan et al., 2006). It also provides insights into the time required for completing questionnaires and participants' comprehension.

Following ethical approval from the Arab American University in Palestine (AAUP), a small group of nurses conducted a pilot study to assess the feasibility of the instruments intended for use in the main study. All questionnaires were completed and returned within a 10 to 15-minute timeframe. Notably, no clarifications were needed during the questionnaire completion process, likely due to the questions being presented in Arabic, the participant's native language.

The pilot study confirmed the high reliability of the study instruments. Specifically, the HSOPSC demonstrated a Cronbach's alpha of 0.86, indicating good internal consistency. Similarly, the NSS exhibited a Cronbach's alpha of 0.95, reflecting excellent reliability.

3.9.1 Qualitative Part

In the qualitative part of the dissertation, the author employed semi-structured interviews. This common data collection tool allows researchers to delve deeply into topics compared to other interview techniques (Mashuri et al., 2022). Semi-structured interviews offer adaptability, enabling interviewers to ask follow-up questions based on participants' responses. As a result, a richer understanding of participants' perspectives on PSC and job stress could be achieved.

The semi-structured interview questions were derived from the literature and the findings of the questionnaires (see Appendix E). Before conducting the interviews, the questions underwent review with the supervisor and a pilot test. The pilot study was beneficial in assisting the researcher in anticipating potential difficulties and challenges. Piloting qualitative interview questions is essential for novice researchers using mixed techniques and qualitative approaches (Williams-McBean, 2019). After conducting the pilot phase and discussing it with the supervisor, some modifications were made to clarify some questions. The interview questions covered the composites of PSC and factors related to job stress, drawing from the two surveys used in the quantitative phase. During the interviews, the researcher used Arabic as the primary language, occasionally switching to English for clarity based on the participant's preference. The questions were progressively tailored from general to specific.

3.10 Data Collection Procedure

3.10.1 Quantitative Study

The quantitative study was conducted between June and August 2023. After getting the required approvals from the university and the hospital administrations (see Appendices G, H, and I), the researcher and his two assistants traveled between the cities in North West Bank and distributed the questionnaires to the eligible nurses at their workplaces in the 16 North West Bank in Palestine hospitals. They described the questionnaires and answered nurses' queries about questionnaire items before the distribution process. Before giving informed consent, the researcher and his assistants explained the study's purpose to participants. They assured participants that their responses would remain confidential and anonymous, emphasizing voluntary participation. Participants were also informed that individual answers could not be identified, and they had the right to withhold responses if any questions felt too private. Given varying work shifts and leaves, the researcher left empty questionnaires with head nurses in each unit to be filled by eligible nurses once they were on duty. The researcher and his assistants collected back the filled questionnaires after two weeks.

3.10.2 Qualitative Study

In September 2023, the researcher and his assistant conducted semi-structured qualitative interviews with nurses from various hospitals. These interviews aimed to gather in-depth insights into nurses' experiences with job stressors and their perceptions of PSC. The researcher and his assistants traveled between cities to meet the nurses in their area. The interviews were conducted in a private setting outside their workplaces, allowing participants the freedom to focus without time or mental constraints.

At the start of each interview, the researchers introduced themselves and explained the study's purpose. Participants received detailed information about the interview process, including its average duration of 28 minutes. They were assured that their participation would be treated confidentially and anonymously. Additionally, participants were informed of their right to discontinue the interview at any point. They were assured that the interview would be audio-recorded for transcription, with the recordings subsequently deleted. Some interviews were conducted via Zoom for participants' convenience, using audio-only calls. The remaining interviews were conducted face-to-face and in private. The decision to conclude interviews was guided by the principle of saturation. As a result, the interviews were terminated after interviewing seven experienced nurses. The interviews were then transcribed verbatim, and the transcripts were analyzed using the interpretive description technique.

3.11 Data Analysis

3.11.1 Quantitative Part

The researcher cleaned and coded the collected data using Microsoft Excel 2021. Subsequently, the organized data were analyzed using IBM SPSS Statistics Version 27.0 (IBM Corp, 2020). Descriptive statistics were used to present demographic and workplace characteristics, including frequencies, percentages, means, and standard deviations. The researcher used the AHRQ Hospital Survey on Patient Safety Culture Version 2.0 User's Guide (Sorra et al., 2021) to measure the composites of PSC. Associations between participant demographics and workplace features with the NSS total score were assessed using t-tests and one-way ANOVA. Similarly, the Mann-Whitney U and Kruskal-Wallis H tests were employed to measure associations with the HSOPSC total score. The Pearson correlation coefficient (r) was used to answer the main research question and explore the relationship between the NSS total score and the HSOPSC total score. Additionally, multiple-

liner regression was used to assess the prediction of the significant variables found in the univariate analysis. Statistical significance was considered when the p-value < 0.05 when testing the hypothesis in the study.

3.11.2 Qualitative Part

For the qualitative part, interviews were audio-recorded and then transcribed verbatim. Data transcriptions were subjected to an inductive thematic analysis (Braun & Clarke, 2006). Thematic analysis is a common technique in analyzing qualitative data; it is used to find and analyze themes or patterns in a data set and frequently yields fresh perspectives and knowledge (Naeem et al., 2023). The analyses of qualitative data were based on the six steps of the thematic analysis approach of Braun and Clarke (2006): getting to know the data, creating the first codes, combining codes to develop themes, going over themes, giving themes names and definitions, and finally reporting themes.

3.12 Ethical Consideration

Approval to conduct this study was sought from the Institutional Review Board (IRB) -ethical committee- of AAUP under the code number 2023/A/114/N (see Appendix F). The researcher gained permission from the MOH and administrations of the private hospitals to distribute the questionnaires to the nurses (see Appendices G and H). Furthermore, the researcher got approval to use the original developers' Arabic versions of HSOPSC and NSS. Permission to use the Arabic version of HSOPSC 2.0 obtained from the SPSC and the AHRQ, documented in Appendix I. Furthermore, the researcher obtained permission to use the Arabic version of the NSS from Alhajjar's supervisor at Manchester University in the UK (see Appendix J). The questionnaires were distributed with a cover page containing information about the study objectives and expected outcomes. Informed consent was obtained, and participants were provided with an information sheet addressing potential

queries (see Appendices K and L). Confidentiality was strictly maintained, aligning with ethical principles of non-maleficence. Participants were informed of the study's purpose and their right to withdraw at any time, ensuring autonomy and beneficence. Their input remained anonymous, and confidentiality was safeguarded.

Additionally, participants voluntarily participated without compensation. The participants in the study were not exposed to any dangerous behaviors that might have affected their health or well-being (non-maleficence). No names were taken during the interviews to maintain participant anonymity and encourage open sharing.

Furthermore, to ensure participant anonymity, the researcher assigned numerical codes for the filled questionnaires to protect their information and prevent tracing. Research data were securely encrypted on the researcher's computer, accessible only to the researcher and assistants. Hard copies of questionnaires were stored in a locked cabinet for confidentiality. Audio-taped interviews were similarly secured in a locked flash memory within the same safe cabinet.

3.13 Summary

This study investigated the relationship between job stress and PSC. Employing a mixed-method design, the researcher conducted the research among 355 nurses in North West Bank hospitals in Palestine. Data collection involved two reliable questionnaires (HSOPSC v2.0 and NSS) in the quantitative phase and face-to-face semi-structured interviews in the qualitative phase. The chapter outlines the research paradigm, justifies the study philosophy, and explains the data analysis process for both phases.

Chapter Four

Results

4.1 Introduction

This chapter presents the findings from the quantitative and qualitative parts. The quantitative part presented data from the surveys administered to the nursing staff in the 16 North West Bank hospitals. The surveys were administered for three months in different hospital working units. The aim was to assess the perception of nurses about PSC and the sources of their job stress and then to examine the association between job stress and the perception of PSC. Moreover, the qualitative part presented the data analyzed from the semi-structured interviews with experienced nurses from the same hospitals.

4.2 Quantitative Data Analysis

The data analysis in this part includes two sections: descriptive and inferential data analysis. There are three ways to describe data in descriptive statistics: frequencies, measures of central tendency, and measures of dispersion (Rana et al., 2021). The frequencies provide numbers of observations and are usually presented as percentages. Measures of central tendency are mode, median, and mode. The mean presents the average of the observations. In contrast, measures of dispersion yield data variability information that is impossible to collect with central tendency measurements. These measures are range, interquartile range (IQR), standard deviation (SD), and Z-score. The analysis in this part includes the descriptive statistics of the participant demographic and workplace characteristics and the survey responses as the frequency of positive scores and their percentages for the survey items of the HSOPSC V2.0 and the mean with SD for the survey items of the NSS. The inferential analysis section shows the results of the independent t-test, one-way ANOVA, Mann-Whitney, Kruskal-Wallis, and Pearson correlation coefficient. Using information from a

representative sample of a larger population, inferential statistics try to determine the direction and strength of correlations between variables, going beyond simple description (Babones, 2015). These tests were performed using SPSS version 27.0. The t-test and one-way ANOVA were used to examine the association between NSS and participants' characteristics since the NSS data was normally distributed. Mann-Whitney and Kruskal-Wallis were used to examine the association between PSC and participants' characteristics since the data of HSOPSC was not normally distributed. Pearson correlation was used for the main aim of this study, which is to investigate the association between job stress and PSC.

As outlined in the methodology chapter, the participants were chosen from the 16 hospitals based on proportionate sampling, and each hospital had a proportion of nurses who were invited to fill out the questionnaires. The total number of nurses was 355, and the researcher kept following up with those nurses to fill out all the questionnaires. When someone refused, withdrew, or returned uncompleted questionnaires, the researcher invited another one from the same hospital. Thus, the researcher finally had all the needed questionnaires filled out completely. The distributed questionnaires were 395, and the completed were 355, with a response rate of 89%.

4.2.1 Participants Characteristics

The study was conducted on 355 nurses from 16 North-West Bank Hospitals. The male participants in this study represent 55.2% (n= 196), while females represent 44.8% (n= 159) of the sample. Almost half of the participants (53.8%, n= 191) were aged 20 to 29 years, and 40.3% (n= 143) were aged from 30 to 39 years. The remaining participants (5.9%, n= 21) were 40 years and above. Regarding the marital status of the participants in this study, more than half were married (62.3%, n= 221); however, 37.2% (n= 132) were single, and only 2 of them were divorced (0.6%). Furthermore, most participants (40.6%, n= 144) were from

Nablus city. The rest of them were from Tulkarm (20.8%), Jenin (23.9%), Qalqilya (5.9%), Salfit (0.6%), and Tubas (8.2%).

Moreover, most participants (68.7%, n= 244) had an average income ranging from 3100 to 5000 New Israeli Sheqel (NIS). However, only 33 (9.3%) had an income of over 5000 NIS. Most of the participants in this study (72.7%, n= 258) hold a bachelor's degree in nursing, and only 7.3% (n= 26) have a master's degree in one of the nursing specialties. Table 2 provides details of participants' demographics.

Table 2 *Participants Characteristics*

Variable	**Categories**	**Number (N)**	**Percentage (%)**
Gender	Male	196	55.2 %
	Female	159	44.8 %
Age group	20 to 29 years	191	53.8
	30 to 39 years	143	40.3
	40 years and above	21	5.9
Marital Status	Single	132	37.2
	Married	221	62.3
	Divorced	2	0.6
Resident	Nablus	146	41.1
	Tulkarm	74	20.8
	Jenin	85	23.9
	Qalqilya	21	5.9
	Tubas	29	8.2
Income	From 1000 to 3000 NIS	78	22.0
	From 3100 to 5000 NIS	244	68.7
	Over 5000 NIS	33	9.3
Academic Level	Diploma	71	20.0
	Bachelor	258	72.7
	Master	26	7.3
Total Respondents		**355**	**100 %**

4.2.2 Workplace Characteristics

Most of the participants in this study, as seen in Table 4.2, were working in governmental hospitals (48.5%, n= 172), 38.3% (n= 136) were working in non-governmental hospitals, and 13.2% (n= 47) were working in the only academic medical center. Most participants (55.4%, n= 194) in these hospitals worked in patient care units like the Emergency Room (ER), cardiology, Intensive Care Units (ICUs), outpatients, dialysis, obstetrics and gynecology, and pediatrics. However, (28.9%, n= 101) of the participants worked in the medical and surgical units, and 10.9% (n= 38) worked in surgical services like Operation Room (OR), endoscopy, and daycare units. Those working in multiple units/no specific unit represented 4.9% (n= 17) of the participants. Most of the participants in this study were nurses (88.2%, n= 313). Only 7.0% of them (n=25) were midwives, 3.7% (n=13) of them were supervisors, managers, department managers, clinical leaders, administrators, or directors, and only 1.1% (n=4) were nurse educators.

More than half of the participants worked from 30 to 40 hours per week (59.4%, n=211), 103 (29.0%) worked over 40 hours per week, and 41 (11.5%) worked less than 30 hours per week. Moreover, the average number of night shifts per week among the participants in these hospitals was 1.88 (SD= 1.074).

4.2.2.1 Participants' Experience.

Table 3 shows that 43.1% (n= 153) of the participants had experience from 1 to 5 years in the nursing profession, while 34.6% (n= 123) had 6 to 10 years of experience, and 22.3% (n= 79) had experience in the nursing profession of 11 or more years. However, 4.8% (n= 159) of the participants had experience from 1 to 5 years in the current working hospital, while 29.0% (n= 103) had 6 to 10 years of experience, 14.1% (n= 50) had 11 or more years

of experience, and only 12.1% (n= 43) had less than one year of experience in the current working hospital.

Moreover, about half of the participants in the study (51.5%, n= 183) had experience of 1 to 5 years in the current working unit, while 18.9% (n= 67) had experience of 6 to 10 years, 19.7% (n= 70) of the participants had experience of less than one year. Only 9.9% (n= 35) had 11 or more years of experience in the current working unit.

Table 3 *Participants' Workplace Characteristics*

Variable	**Categories**	**Number (N)**	**Percentage (%)**
Hospital type	Governmental	172	48.5
	Non-Governmental	136	38.3
	Academic	47	13.2
Experience in Profession	1 to 5 years	153	43.1
	6 to 10 years	123	34.6
	11 or more years	79	22.3
Experience in the current hospital	Less than one year	43	12.1
	1 to 5 years	159	44.8
	6 to 10 years	103	29.0
	11 or more years	50	14.1
Experience in the current unit	Less than one year	70	19.7
	1 to 5 years	183	51.5
	6 to 10 years	67	18.9
	11 or more years	35	9.9
Working hours per week	Less than 30 hours per week	41	11.5
	30 to 40 hours per week	211	59.4
	Over 40 hours per week	103	29.0
Primary unit or work area in this hospital	Multiple Units, No specific unit	17	4.9
	Medical/ Surgical Units	101	28.9
	Patient Care Units	194	55.4
	Surgical Services	38	10.9
Position in this hospital	Nurse	313	89.2

	Midwife	25	7.1
	Supervisor, Manager, Department Manager, Clinical Leader, Administrator, Director	13	3.7
Does the hospital perform activities for nurses to relieve job stress?	Yes	63	17.7
	No	292	82.3
Does the hospital perform activities to improve the PSC?	Yes	183	51.5
	No	172	48.5
In the past 12 months, how many patient safety events have you reported?	None	176	49.6
	From 1 to 2	110	31.0
	From 3 to 5	41	11.5
	From 6 to 10	19	5.4
	11 or more	9	2.5
How would you rate patient safety in your unit/work area?	Poor	12	3.4
	Fair	51	14.4
	Good	100	28.2
	Very Good	119	33.5
	Excellent	73	20.6
Would you recommend treatment to your family members and loved ones in this hospital?	Yes	279	78.6
	No	76	21.4
Do you typically interact directly with patients in your staff position?	Yes	339	95.5
	No	16	4.5
Night Shift	Mean = 1.88 SD= 1.074	Minimum = 0 Maximum = 5	
Total Respondents		**355**	**100 %**

SD: Standard Deviation, some numbers do not total 355 due to missing data

4.2.2.2 Participants' Characteristics Related to PSC.

Most participants (95.5%, n= 339) had direct interaction or contact with patients in their working positions, and only 4.5% (n=16) had no direct interaction or contact with

patients. Moreover, most participants were positive when asked to rate their working area/unit on patient safety in one question, from poor to excellent (see Figure 7). 20.6% (n= 73) of them rated their unit on patient safety as excellent, 33.5% (n= 119) gave a very good rate, and 28.2% (n= 100) gave a good rate. However, 14.4% (n= 51) rated it as fair, and only 3.4% (n= 12) rated their working unit/area as poor in patient safety.

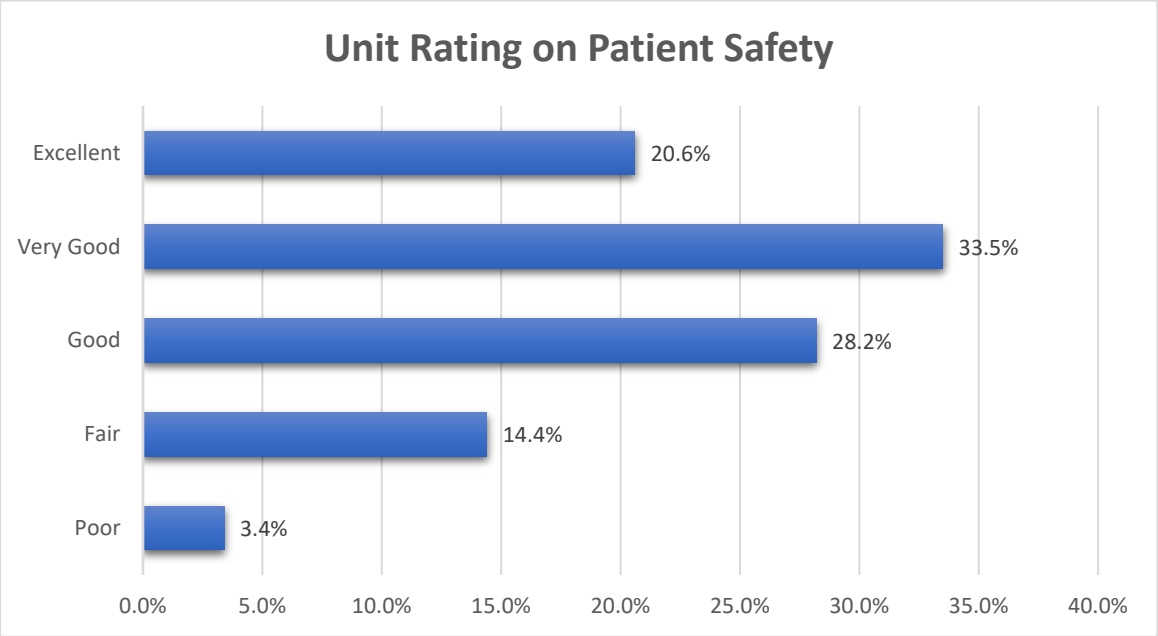

Figure 7 *Unit/Work Area Rating on Patient Safety*

Regarding events reported in the past 12 months, Figure 8 presents the percentages of patient safety events reported. About half of the participants (49.6%, n= 176) said they did not report any event related to patient safety. However, 31.0% (n= 110) mentioned that they reported from 1 to 2 reports, 11.5% (n= 41) reported from 3 to 5 events, 5.4% (n= 19) reported from 6 to 10 events, and only 2.5% (n= 9) reported 11 or more events related to patient safety.

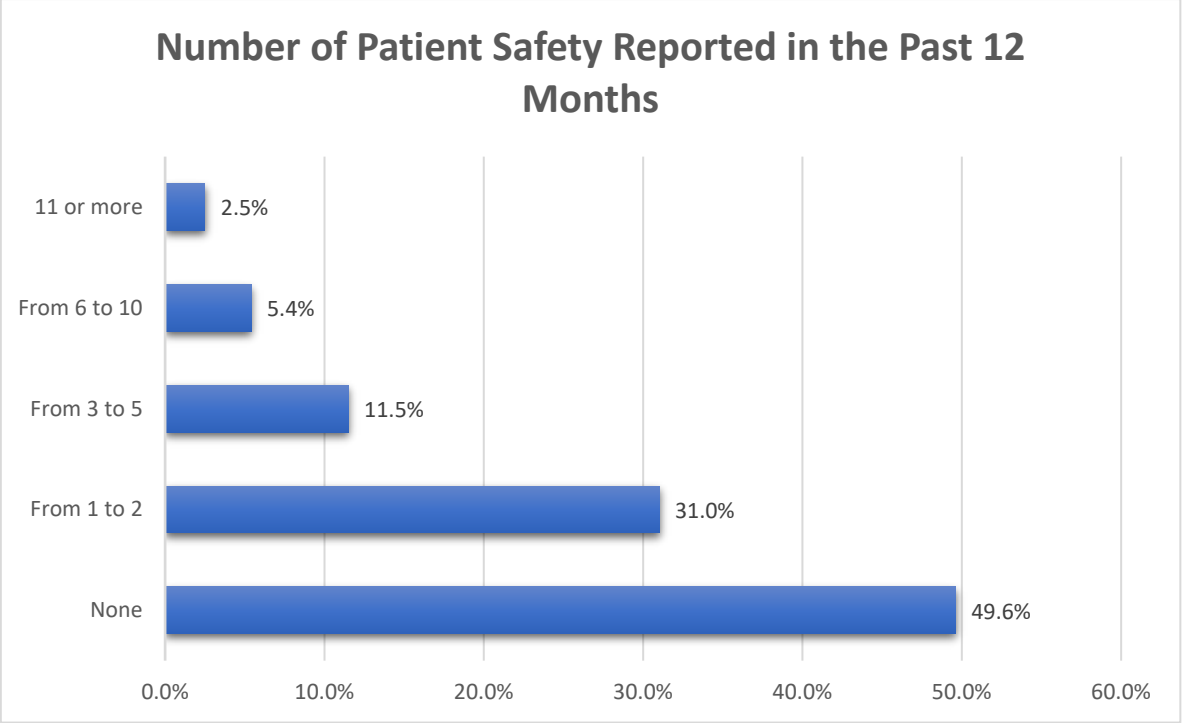

Figure 8 *Number of Patient Safety Events Reported in the Past 12 Months*

Moreover, 78.6% (n= 279) of the participants recommended treatment to their family members and loved ones in their current working hospital, while 21.4% (n= 76) did not recommend treating their families in their current working hospital.

In the current hospitals, most participants 82.3% (n= 292) mentioned that their hospitals had not performed activities for nurses to relieve job stress. In comparison, only 17.7% (n= 63) of them mentioned that their hospitals had performed activities for nurses to alleviate job stress. Moreover, 51.5% (n= 183) of them mentioned that their hospitals had performed activities to improve the PSC, and 48.5% (n= 172) of them mentioned that their hospitals had not performed activities to improve the PSC.

4.3 Perception of PSC

To answer research question number one, “What is the perception of PSC among nurses in North West Bank hospitals?” was measured using the positive average score of each

composite in the HSOPSC survey and the overall composite score. The number and percentage of positive responses were computed for each item and dimension following the AHRQ survey analysis guidelines (Sorra et al., 2021). Items were scored on a 5-point scale of agreement (from strongly disagree to strongly agree) and frequency (from never to always). The average percentage of positive responses on PSC was used to measure the composite scores. These were obtained by adding the positive score for each item and dividing them by the number of items in the same composite. The positive score is determined by the percentage of respondents who selected (strongly agree, agree; or always, most of the time) for a positively worded item and (strongly disagree, disagree; or rarely, never) for a negatively worded item. When measuring the positive percentages, the scores of negatively worded items were reversed.

The study found that the overall perception of PSC as perceived by the participants in the currently studied hospitals as measured by the average composite scores in the HSOPSC was 47.0%.

4.3.1 Composites Score

The composite score in this study ranged from 30.9% to 63.1%, and the overall composite score was 47.0%. Figure 9 shows the average positive scores of the ten composites. The highest composite score was “Teamwork”, with a percent of 63.1% positive score. Followed by the “Organizational Learning—Continuous Improvement” composite with a positive score of 55.8%, “Communication About Error” composite with a positive score of 52.3%, and “Supervisor, Manager, or Clinical Leader Support for Patient Safety” composite with a positive score of 50.8%. However, the lowest composite score was “Response to Error”, with a positive score of 30.9%, followed by the “Staffing and Work Pace” composite, with a positive score of 34.8%. The rest of the composite's positive scores

were: 47.1% for the "Handoffs and Information Exchange" composite, 46.8% for the "Hospital Management Support for Patient Safety" composite, 45.0% for the "Communication Openness" composite, and 43.7% for "Reporting Patient Safety Events" composite. The composite scores and their individual items scores are presented in detail in Appendix M.

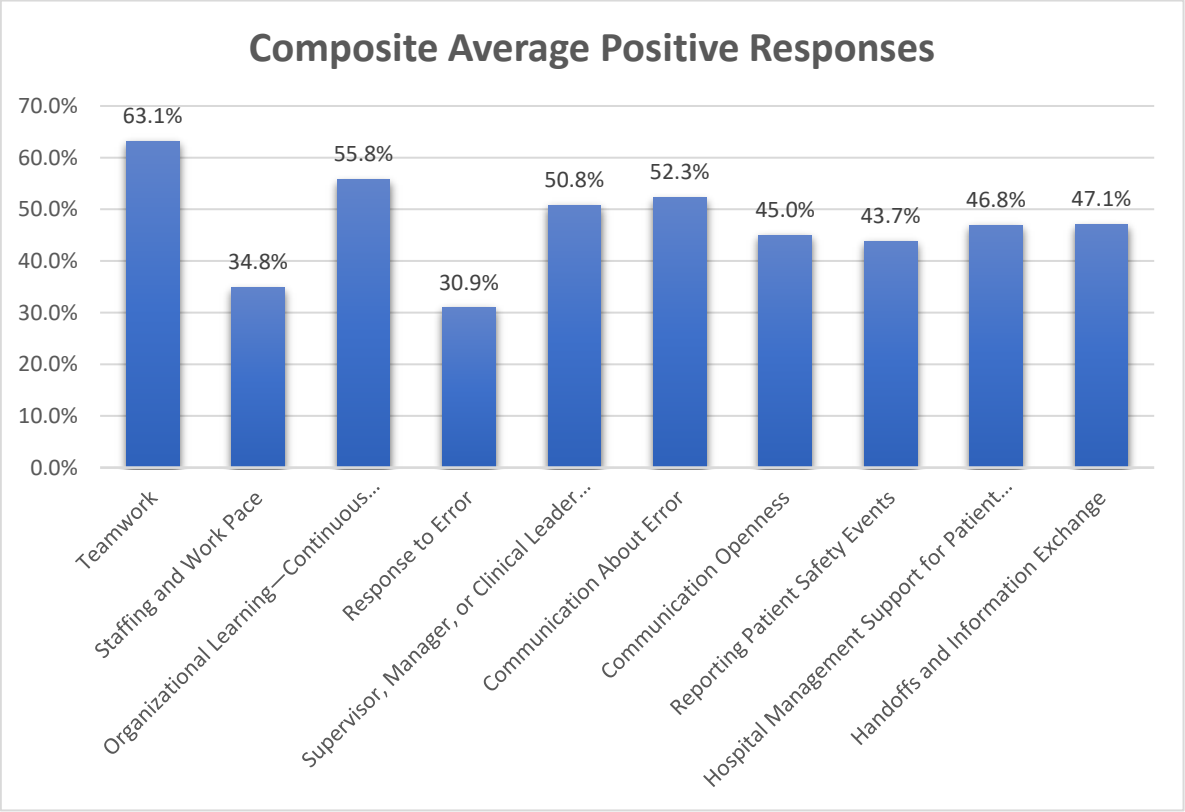

Figure 9 *Composite Average Positive Responses*

4.3.2 Inferential Analysis of HSOPSC

According to the Shapiro-Wilk normality test of HSOPSC data, the data was not normally distributed (*p-value* < 0.001). So, nonparametric tests (Mann-Whitney, Kruskal-Wallis) were used to answer research questions four and six "to test the association between participants' demographic and workplace characteristics and the total score of the perception of PSC."

4.3.3 Participants' Demographics and PSC

To answer the research question, "Are nurses' demographics (gender, age, income, and academic qualification) associated with their perception of PSC in North West Bank hospitals?" The Mann-Whitney test assessed the association between independent variables across two datasets and the total PSC score. Conversely, the Kruskal-Wallis test was employed for independent variables associated with more than two datasets. Table 4 shows a statistically significant association between the perception of PSC and income (*p-value* <0.05). Participants with income over 5000 NIS had a more positive perception of other participants with a lower income rate (Mean Rank 244.76, *p-value* <0.001), and those who had an income from 1000 to 3000 NIS had the least positive score of PSC (Mean Rank 161.24, *p-value* <0.001). The rest of the demographics -gender, age group, and academic level- had no significant association with the perception of PSC (*p-value* >0.05).

Table 4 *Association between PSC and Participant Characteristics*

Variable	**Categories**	**N**	**Mean Rank**	**Median [Q1–Q3]**	***P-value***
Gender	Male	196	174.63	101.00 [92.00–111.75]	0.492
	Female	159	182.16	100.00 [94.00–113.00]	
Age group	20 to 29 years	191	178.98	100.00 [93.00–113.00]	0.365
	30 to 39 years	143	172.54	100.00 [93.00–111.00]	
	40 years and above	21	206.24	102.00 [96.50–118.00]	
Income	From 1000 to 3000	78	161.24	97.50 [92.00–108.75]	<0.001*
	From 3100 to 5000	244	174.33	100.00 [93.00–111.00]	
	Over 5000 NIS	33	244.76	112.00 [102.00–124.50]	
Academic Level	Diploma	71	165.05	97.00 [94.00–111.00]	0.419
	Bachelor	258	180.14	101.00 [93.00–112.25]	
	Master	26	192.15	101.50 [93.00–118.50]	
Total Respondents		**355**			

N: Number (frequency), Q1-Q3: first quartile-third quartile
**Significance level p <0.05*

4.3.4 Participants' Workplace Characteristics and PSC

To answer the research question, “Are nurses’ workplace characteristics (tenure in the hospital, tenure in the work area, type of hospital, primary working unit, hours worked per week, whether the hospital performs activities for nurses to relieve job stress, whether the hospital performs activities to improve the PSC, the rating of unit/work area on patient safety, and night shifts) associated with their perceived job stress in North West Bank hospitals?” The same tests answered the previous questions were used. The results showed a statistically significant association between the perception of PSC and “hospital type, whether the hospital performs activities for nurses to relieve job stress, whether the hospital performs activities to improve PSC, and patient safety rating in the unit/working area” (*p-value* <0.05) (see Table 5). The rest of the workplace characteristics - tenure in the hospital, tenure in the work area, primary working unit, hours worked per week- had no significant association with the perception of PSC (*p-value* >0.05).

The study found that participants who work in academic hospitals had significantly (*p-value* <0.001) higher positive perceptions toward PSC than those working in non-governmental or governmental hospitals (Mean Rank 274.89, 175.02, and 153.88, respectively). Moreover, participants whose hospitals were conducting activities to relieve job stress for nurses perceived PSC more positively than those whose hospitals were not doing such activities (Mean Rank 207.48 & 171.64, respectively, *p-value* = 0.012). Also, participants whose hospitals were conducting activities to improve the PSC perceived PSC more positively than those whose hospitals were not doing such activities (Mean Rank 208.4 & 145.59, respectively, *p-value* <0.001).

The study also found that the patient safety rating in the unit/working area was significantly associated with staff perception of PSC (*p-value* <0.001). Participants who rated

their unit as very good and excellent on patient safety perceived PSC more positively (Mean Rank 210.39 & 233.12, respectively, *p-value* <0.001), while those who rated their unit/work area as poor and fair had the lowest positive perception of PSC (Mean Rank 74.04 & 100.37 respectively, *p-value* = 0.029).

Table 5 *Association between PSC and Workplace Characteristics*

Variable	Categories	N	Mean Rank	Median [Q1–Q3]	*P-value*
Hospital type	Governmental	172	153.88	98.00 [90.00–105.75]	<0.001*
	Non-Governmental	136	175.02	100.00 [94.00–110.75]	
	Academic	47	274.89	118.00 [109.00–128.00]	
Experience in the current hospital	< one year	43	184.14	99.00 [93.00–115.00]	0.622
	1 to 5 years	159	170.23	100.00 [92.00–112.00]	
	6 to 10 years	103	182.37	101.00 [93.00–116.00]	
	11 or more years	50	188.42	101.00 [94.75–111.50]	
Experience in the current unit	< one year	70	182.50	99.50 [93.00–113.50]	0.976
	1 to 5 years	183	176.10	100.00 [93.00–112.00]	
	6 to 10 years	67	178.99	101.00 [92.00–116.00]	
	11 or more years	35	177.04	99.00 [94.00–107.00]	
Working hours per week	< 30 hours per week	41	161.20	98.00 [91.00–106.50]	0.490
	30 to 40 hours per week	211	181.92	101.00 [93.00–113.00]	
	Over 40 hours per week	103	176.65	100.00 [94.00–112.00]	
Primary unit or work area in this hospital	Multiple Units, No specific unit	17	185.88	104.00 [88.00–115.50]	0.167
	Medical/ Surgical Units	101	156.82	98.00 [92.00–104.00]	
	Patient Care Units	194	181.53	101.00 [93.75–113.00]	
	Surgical Services	38	189.72	101.50 [95.50–113.00]	
Does the hospital perform activities for nurses to relieve job stress?	Yes	63	207.48	103.00 [94.00–117.00]	0.012*
	No	292	171.64	100.00 [92.00–111.00]	
Does the hospital perform activities to improve the PSC?	Yes	183	208.4	104.00 [95.00–117.00]	<0.001*
	No	172	145.59	96.50 [89.00–104.00]	

How would you rate patient safety in your unit/work area?	Poor	12	74.04	89.00 [79.75–94.75]	<0.001*
	Fair	51	100.37	91.00 [87.00–99.00]	
	Good	100	151.29	96.50 [92.00–104.00]	
	Very Good	119	210.39	104.00 [97.00–117.00]	
	Excellent	73	233.12	112.00 [99.50–123.00]	
Total Respondents		**355**			

N: Number (frequency), Q1-Q3: first quartile-third quartile, some numbers do not total 355 due to missing data.
**Significance level p <0.05*

4.4 Nursing Job Stress

To answer research question number two, "What are the perceived job stressors among nurses in North West Bank hospitals?" descriptive statistics, including frequencies, means, and standard deviations, were used along with Arithmetic Mean (AM) to arrange the order of subscales. The overall mean score for the NSS was 39.76 ± 15.16, ranging between 1 and 85 points. The highest perceived sources of job stress were in subscale VI, "Workload", with a mean score of 8.55 ± 3.54 (AM= 1.42), followed by subscale I, "Death and dying", with a mean score of 8.41 ± 3.52 (AM= 1.20). The lowest perceived sources of job stress were in subscale VII, "Uncertainty concerning treatment", with a mean score of 5.14 ± 3.03 (AM= 1.02), followed by subscale III, "Inadequate preparation", with a mean score of 3.19 ± 1.72 (AM= 1.06). (see Figure 10).

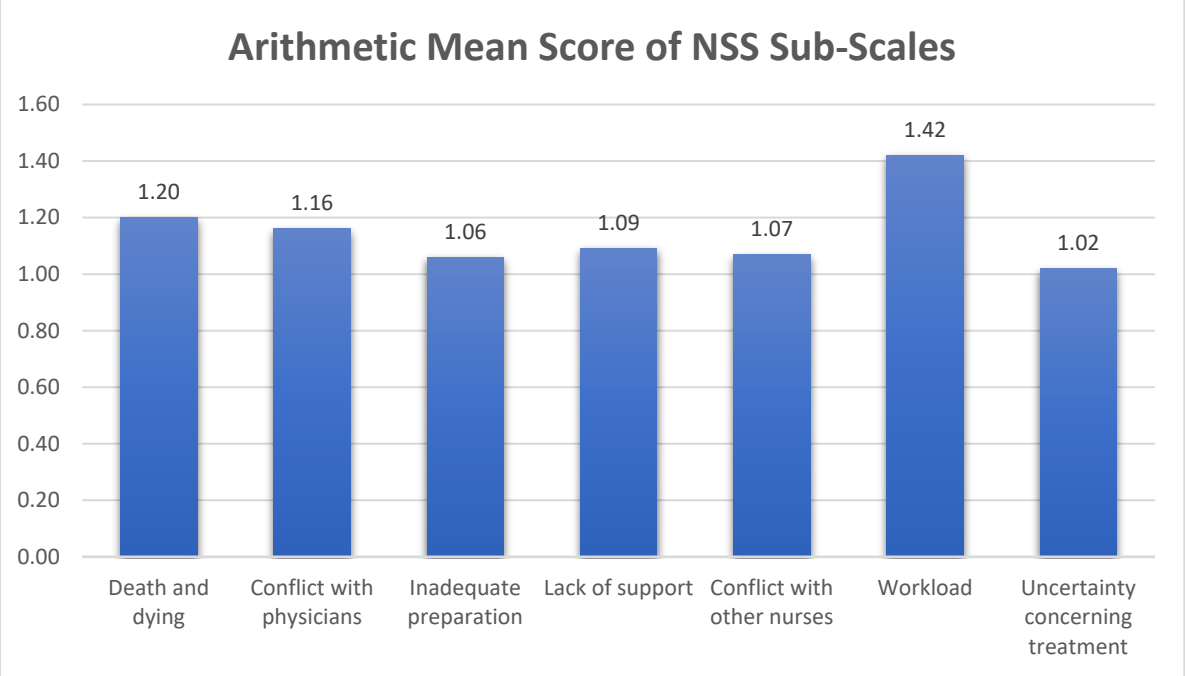

Figure 10 *The Arithmetic Mean Score of the NSS 7 Sub-Scales*

The rest of the job stress sources presented in the NSS subscales were Subscale II, "Conflict with physicians" with a mean score of 5.81 ± 2.78 (AM= 1.16), subscale IV, "Lack of support" with a mean score of 3.27 ± 1.80 (AM= 1.09), and subscale V "Conflict with other nurses" with a mean score of 5.36 ± 2.72 (AM= 1.07) (see Appendix N).

In subscale I, "Death and dying", the most stressful source was "*watching a patient suffer"* (M= 1.52 ± 0.82) and "*performing procedures that patients experience as painful"* (M= 1.42 ± 0.79). However, the least stressful source was "*listening or talking to a patient about his/her approaching death"* (M= 0.88 ± 0.85), followed by "*a physician not being present when a patient dies"* (M= 0.92 ± 0.90). Appendix N presents the score for each subscale along with their individual items score.

Moreover, "*criticism by a physician"* (M= 1.24 ± 0.79) was the most stressful source of stress in subscale II, "Conflict with physicians". In contrast, the least stressful stress source was "*disagreement concerning a patient's treatment*" (M= 1.10 ± 0.79). However, "*being*

asked a question by a patient for which I do not have a satisfactory answer" (M= 1.10 ± 0.76) was the most stressful condition in subscale III, "Inadequate preparation" and "*feeling inadequately prepared to help with the emotional needs of a patient*" was the least stressful condition (M= 1.03 ± 0.71).

In subscale IV, "Lack of support", the most stressful condition was the "*lack of an opportunity to talk openly with other unit personnel about problems in the unit*" (M= 1.16 ± 0.88). However, the "*lack of an opportunity to express my negative feelings toward patients to other unit personnel*" was the least stressful condition (M= 1.01 ± 0.77).

Furthermore, "*floating to other units that are short-staffed*" (M= 1.33 ± 0.99) was the most stressful condition in subscale V, "Conflict with other nurses". At the same time, "*criticism by a supervisor*" was the least stressful condition (M= 0.94 ± 0.76). Similarly, in subscale VI, "Workload", the most stressful source of stress was "*not enough staff to adequately cover the unit*" (M= 1.55 ± 0.94), followed by the "*breakdown of computers*" (M= 1.55 ± 0.91). However, the least stressful source of stress in subscale VI was "*not enough time to complete all of my nursing tasks*" (M= 1.21 ± 0.81).

Finally, the most stressful condition in subscale VII, "Uncertainty concerning treatment", was "*inadequate information from a physician regarding the medical condition of a patient*" (M= 1.09 ± 0.81), and the least stressful condition was "*uncertainty regarding the operation and functioning of specialized equipment*" (M= 0.97 ± 0.78).

4.4.1 Inferential Analysis of NSS

According to the Shapiro-Wilk normality test of NSS data, the data were normally distributed (*p-value*= 0.631). So, parametric tests (T-test, one-way ANOVA) were used to

answer research questions three and five “to test the association between participants' demographic and workplace characteristics and the total score of perceived job stress”.

4.4.2 Participants' Characteristics and Job Stress

To answer research question number three, “Are nurses’ demographics (gender, age, income, and academic qualification) associated with their perceived job stress in North West Bank hospitals?” a t-test was used to test the association between independent variables with two data sets and the total score of NSS. In comparison, one-way ANOVA was used to test the association for independent variables with more than two data sets. The study found a statistically significant association between perceived job stress and gender, income, and academic level (*p-value* <0.05) (see Table 6). T-test found significant differences between genders (F= 1.559, *p*= 0.001). Male participants had more job stress than females (M= 42.2 & 36.7, respectively, *p* <0.001). One-way ANOVA found statistically significant differences in income (F= 5.841, p= 0.003). Participants who had an income from 3100 to 5000 NIS had more job stress (M= 41.5, *p*= 0.003) than those who had an income from 1000 to 3000 NIS or those who had an income of over 5000 NIS (M= 36.3 & 34.4 respectively). Moreover, one-way ANOVA found statistically significant differences in the academic level of the participants (F= 5.184, *p*= 0.006). Participants with a master's degree perceived more job stress (M= 42.1, *p*= 0.006) than those with diplomas or bachelor's degrees (M= 34.6 & 40.9, respectively).

Table 6 *Association between NSS and Participant Characteristics*

Variable	Categories	N	Mean ± SD	F	*P-value*
Gender	Male	196	42.2 ± 15.6	1.559	<0.001*
	Female	159	36.7 ± 14		
Age group	20 to 29 years	191	38.7 ± 14.6	1.453	0.235
	30 to 39 years	143	41.3 ± 16		
	40 years and above	21	37.5 ± 13.4		
Income	From 1000 to 3000 NIS	78	36.3 ± 14.6	5.841	0.003*
	From 3100 to 5000 NIS	244	41.5 ± 15.1		
	Over 5000 NIS	33	34.4 ± 14.1		
Academic Level	Diploma	71	34.6 ± 15.5	5.184	0.006*
	Bachelor	258	40.9 ± 14.9		
	Master	26	42.1 ± 13.5		
Total Respondents		**355**			

N: Number (frequency), SD: Standard Deviation
**Significance level p <0.05*

4.4.3 Participants' Workplace Characteristics and Job Stress

To answer research question number five, "Are nurses' workplace characteristics (tenure in the hospital, tenure in the work area, type of hospital, primary working unit, hours worked per week, whether the hospital performs activities for nurses to relieve job stress, whether the hospital performs activities to improve the PSC, the rating of unit/work area on patient safety, and night shifts) associated with their perceived job stress in North West Bank hospitals?" A one-way ANOVA test was used. The analysis found a statistically significant association between perceived job stress and some workplace characteristics at *p-value* <0.05, as shown in Table 4.6. The study found that the perceived job stress was significantly associated with the hospital type (p <0.001). One-way ANOVA found statistically significant differences between types of hospitals (F= 22.058, p <0.001). Participants who work in governmental hospitals reported higher levels of job stress (M= 44.9) than those working in academic or non-governmental hospitals (M= 35.5 & 34.6, respectively). Moreover, one-way

ANOVA found statistically significant differences regarding participants' experience in their units or working areas (F= 3.875, p= 0.010). Participants with experience from 6 to 10 years in their current unit or working area perceived more job stress (M= 41.8, p= 0.010), while those with experience of 11 or more years perceived the lowest job stress (M= 33.6, p= 0.010) than their colleagues.

Moreover, the working unit/area was significantly associated with job stress (p <0.001). One-way ANOVA showed statistically significant differences between working areas (F= 9.222, p <0.001). Participants who worked in medical/surgical units experienced the highest level of job stress (M= 43.3, p <0.001), followed by those who worked in patient care units (M= 40.6, p <0.001). However, those who worked in multiple units (no specific unit) experienced the lowest level of job stress compared with other units (M= 27.6, p <0.001), followed by those who worked in surgical services units (M= 32.6, p <0.001).

T-test found statistically significant differences between participants whose hospitals conducted activities to relieve stress and those whose hospitals did not (F= 0.024, p <0.001). Participants whose hospitals were conducting activities to alleviate job stress for nurses experienced lower levels of job stress (M= 32.2, p <0.001) than those whose hospitals were not doing such activities (M= 41.3, p <0.001). Furthermore, the t-test found statistically significant differences between participants whose hospitals conducted activities to improve the perception of PSC and those whose hospitals did not (F= 1.749, p <0.001). Participants whose hospitals were conducting activities to improve the PSC experienced a lower level of job stress (M= 35, p <0.001) than those whose hospitals were not doing such activities (M= 44.7, p <0.001). Moreover, one-way ANOVA results showed statistically significant differences between participants who rated their working units regarding patient safety from poor to excellent (F= 13.442, p <0.001). Participants who rated their working unit or area as

poor on patient safety experienced the highest level of job stress (M= 58.3, p <0.001), while those who rated their working unit or area as excellent on patient safety experienced the lowest level of job stress (M= 33.1, p <0.001) (see Table 7).

Table 7 *Association between NSS and Workplace Characteristics*

Variable	**Categories**	**N**	**Mean ± SD**	**F**	***P-value***
Hospital type	Governmental	172	44.9 ± 14.5	22.058	<0.001*
	Non-Governmental	136	34.6 ± 14		
	Academic	47	35.5 ± 14.2		
Experience in the current hospital	< one year	43	37.3 ± 16.4	2.146	0.094
	1 to 5 years	159	39.7 ± 14.1		
	6 to 10 years	103	42.3 ± 15.2		
	11 or more years	50	36.5 ± 16.2		
Experience in the current unit	< one year	70	36.8 ± 15.2	3.875	0.010*
	1 to 5 years	183	41.2 ± 14		
	6 to 10 years	67	41.8 ± 17.9		
	11 or more years	35	33.6 ± 13.1		
Working hours per week	< 30 hours per week	41	43.6 ± 17.8	1.635	0.196
	30 to 40 hours per week	211	39 ± 14.4		
	Over 40 hours per week	103	39.7 ± 15.4		
Primary unit or work area in this hospital	Multiple Units, No specific unit	17	27.6 ± 15.2	9.222	<0.001*
	Medical/ Surgical Units	101	43.3 ± 16.2		
	Patient Care Units	194	40.6 ± 13.8		
	Surgical Services	38	32.6 ± 13.3		
Does the hospital perform activities for nurses to relieve job stress?	Yes	63	32.2 ± 14.1	0.024	<0.001*
	No	292	41.3 ± 14.9		

Does the hospital perform activities to improve the PSC?	Yes	183	35 ± 13.5	1.749	<0.001*
	No	172	44.7 ± 15.1		
How would you rate patient safety in your unit/work area?	Poor	12	58.3 ± 14.2	13.442	<0.001*
	Fair	51	46.4 ± 12		
	Good	100	41.9 ± 13.2		
	Very Good	119	37.2 ± 16		
	Excellent	73	33.1 ± 13.6		
Total Respondents		**355**			**100 %**

N: Number (frequency), SD: Standard Deviation. Some numbers do not total 355 due to missing data

**Significance level p <0.05*

4.5 Correlation Analysis

4.5.1 Relationship between Night Shifts and PSC and Job Stress

Pearson's correlation (r) coefficients were performed to examine the relationship between night shifts and the perception of PSC, which is a part of questions five and six (see (Table 8). The resulting r value represents a weak negative association (Cohen, 2013). It was found that the number of night shifts per week was significantly negatively correlated with PSC (r= - 0.192, p <0.001). However, Pearson's correlation coefficients found no statistically significant correlation between night shifts and perceived job stress (r= - 0.031, p= 0.559).

Table 8 *Pearson's Correlation Coefficients of Night Shifts and PSC and NSS*

	Number of night shifts per week	**Sig. (2-tailed)**
The total score of the NSS	-0.031**	0.559
Total score of PSC	-0.192**	<0.001

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

Relationship between Job Stress and PSC

Pearson's correlation coefficients were performed to answer the main research question, "What is the relationship between job stress and PSC among nurses working in Palestinian hospitals?" (see Table 9). Job stress was statistically significantly negatively correlated with PSC (r= - 0.352, p <0.001). According to Cohen (2013), the r value represents a negative moderate association. That is, the main aim of this study is to examine the relationship between job stress and PSC, and it is evident that increased job stress negatively affects the perception of PSC.

Table 9 *Pearson's Correlation Coefficients of NSS and PSC*

	Total score of PSC	**Sig. (2-tailed)**
The total score of the NSS	-0.352**	<0.001

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

4.6 Multiple Linear Regression

4.6.1 Predictors of PSC

Multiple linear regression was used to test if the significant variables found in the Mann-Whitney and Kruskal-Wallis tests (income, type of hospital, whether the hospital performs activities for nurses to relieve job stress, whether the hospital performs activities to improve the PSC, and unit/work area rating on patient safety) and the number of night shifts per week are significantly predicted the perception of PSC. The overall regression was statistically significant (R^2 = 0.336, F (6, 348) = 29.291, p <0.001) (see Table 4.9). However, the model only explains a 33% variance in nurses' perception of PSC. The table shows that income, type of hospital, whether the hospital performs activities to improve the PSC, unit/work area rating on patient safety, and the number of night shifts per week are significant predictors of PSC.

It was found that income significantly predicted the perception of PSC (β= 3.243, *p* = 0.010, VIF= 1.106). The regression also found that the type of hospital significantly predicted the perception of PSC (β= 2.789, *p*= 0.009, VIF= 1.314). It was also found that "whether the hospital performs activities to improve the PSC" significantly predicted the perception of PSC (β= -4.890, *p* <0.001, VIF= 1.271). Furthermore, it was found that the unit/work area rating on patient safety significantly predicted the PSC (β= 5.447, *p* <0.001, VIF= 1.165). Finally, night shifts also predicted the perception of PSC (β= -2.025, *p*= 0.001, VIF= 1.054). However, only the variable of "whether the hospital performs activities for nurses to relieve job stress" had no significant prediction on the perception of PSC (*p* >0.05) (see Table 10).

Table 10 *Predictors of PSC*

Predictor					**95.0% Confidence Interval**		
	B	***b***	**t**	***p-value***	**Lower**	**upper**	**VIF**
Constant	83.702		15.152	<.001	72.837	94.567	
Income	3.243	.119	2.599	.010*	.788	5.697	1.106
Hospital type	2.789	.132	2.643	.009*	.713	4.864	1.314
Whether the hospital performs activities for nurses to relieve job stress	-.125	-.003	-.066	.947	-3.840	3.590	1.247
Whether the hospital performs activities to improve the PSC	-4.890	-.165	-3.354	<.001*	-7.757	-2.023	1.271
Unit/work area rating on patient safety	5.447	.395	8.373	<.001*	4.168	6.727	1.165
Night shifts	-2.025	-.147	-3.274	.001*	-3.241	-.808	1.054

B and *b* = unstandardized and standardized coefficients, respectively; R = .579; R Square = .336; Adjusted R Square = .324, F = 29.291, df = 6, p <0.001
**Significance level p <0.05*

4.6.2 Predictors of Job Stress

Multiple linear regression was used to test if the significant variables found in the t-test and one-way ANOVA tests (gender, income, academic level, type of hospital, experience

in the current unit, primary working unit/area, whether the hospital performs activities for nurses to relieve job stress, whether the hospital performs activities to improve the PSC, the rating of unit/work area on patient safety, and night shifts) are significantly predicted the job stress. The overall regression was statistically significant (R^2 = 0. 255, F (9, 340) = 12.923, *p* <0.001) (see Table 4.10). However, the model only explains a 25% variance of nurses' perceived job stress. The table shows that gender, academic level, whether the hospital performs activities to relieve job stress, whether the hospital performs activities to improve the PSC, and the unit/work area rating on patient safety were significant in predicting job stress.

It was found that gender significantly predicted job stress (β= -3.227, *p* = 0.034, VIF= 1.148). The regression also found that academic level significantly predicted job stress (β= 4.465, *p* = 0.005, VIF= 1.250). It was also found that whether the hospital performs activities for nurses to relieve job stress significantly predicted job stress (β= 5.435, *p* = 0.010, VIF= 1.280), and whether the hospital performs activities to improve the PSC significantly predicted job stress (β= 5.441, *p* <0.001, VIF= 1.302). Moreover, it was found that the unit/work area rating on patient safety significantly predicted job stress (β= -3.713, *p* <0.001, VIF= 1.191). However, the rest of the examined variables, which include income, hospital type, experience in the current unit, and the primary working unit/area, did not show a significant prediction of job stress (*p* = >0.05) (see Table 11).

Table 11 *Predictors of Job Stress*

Predictor					**95.0% Confidence Interval**		
	B	***b***	**t**	***p-value***	**Lower**	**upper**	**VIF**
Constant	37.091		5.139	<.001	22.894	51.288	
Gender	-3.227	-.107	-2.123	.034*	-6.217	-.238	1.148
Income	.427	.015	.280	.780	-2.574	3.427	1.353

Academic Level	4.465	.149	2.856	.005*	1.390	7.540	1.250
Hospital type	-2.097	-.097	-1.802	.072	-4.386	.192	1.314
Experience in the current unit	.076	.004	.090	.929	-1.587	1.739	1.080
Primary unit or work area in this hospital	-1.203	-.057	-1.197	.232	-3.179	.773	1.042
Whether the hospital performs activities for nurses to relieve job stress	5.435	.137	2.581	.010*	1.293	9.578	1.280
Whether the hospital performs activities to improve the PSC	5.441	.180	3.376	<.001*	2.271	8.612	1.302
Unit/work area rating on patient safety	-3.713	-.265	-5.187	<.001*	-5.121	-2.305	1.191

B and *b* = unstandardized and standardized coefficients, respectively; R = .505; R Square = .255; Adjusted R Square = .235, F = 12.923, df = 9, p <0.001
**Significance level p <0.05*

4.7 Qualitative Data Analysis

The findings from the semi-structured interviews in the second phase of this study were presented. Seven interviews were conducted face-to-face and via Zoom on the Internet. Each interview lasted 30 to 40 minutes. This phase was conducted to gain an overview of the participants' perceptions of PSC and the most common job stressors among hospital nurses. It also gathered their insight into the relationship between both.

Nurses were recruited from the selected hospitals to conduct the semi-structured interviews. When saturation was reached, the interviews were stopped, and the total number of interviews was seven. The researcher selected a diverse group of nurses from various units to represent a variety of perspectives. Male participants represented 42.9% while females 57.1%. All participants were married; more than half of them (57.1%) held master's degrees in nursing fields, and most of them had experience of more than 11 years (71.4%). The rest of the participants' characteristics can be seen in Table 12. Interviews were conducted in the Arabic language and were transcribed verbatim.

Table 12 *Demographic Characteristics of Interviewed Nurses*

Variable	Categories	Number (N)	Percentage (%)
Gender	Male	3	42.9
	Female	4	57.1
Age group	20 to 29 years	1	14.3
	30 to 39 years	5	71.4
	40 years and above	1	14.3
Marital Status	Married	7	100
Resident	Nablus	2	28.6
	Tulkarm	2	28.6
	Jenin	2	28.6
	Salfit	1	14.3
Academic Level	Bachelor	3	42.9
	Master	4	57.1
Experience in Profession	1 to 5 years	1	14.3
	6 to 10 years	1	14.3
	11 or more years	5	71.4
Total Respondents		**7**	**100 %**

4.7.1 Themes on PSC

The interviews revealed eight main themes explained in depth in the following sections. Some interviewees' quotes were presented as examples to show the results and help the reader comprehend the interview data. Themes extracted from the semi-structured interviews, along with their sub-themes, are presented in Figure 11, which represents five themes about PSC, and Figure 12, which represents three themes about job stress.

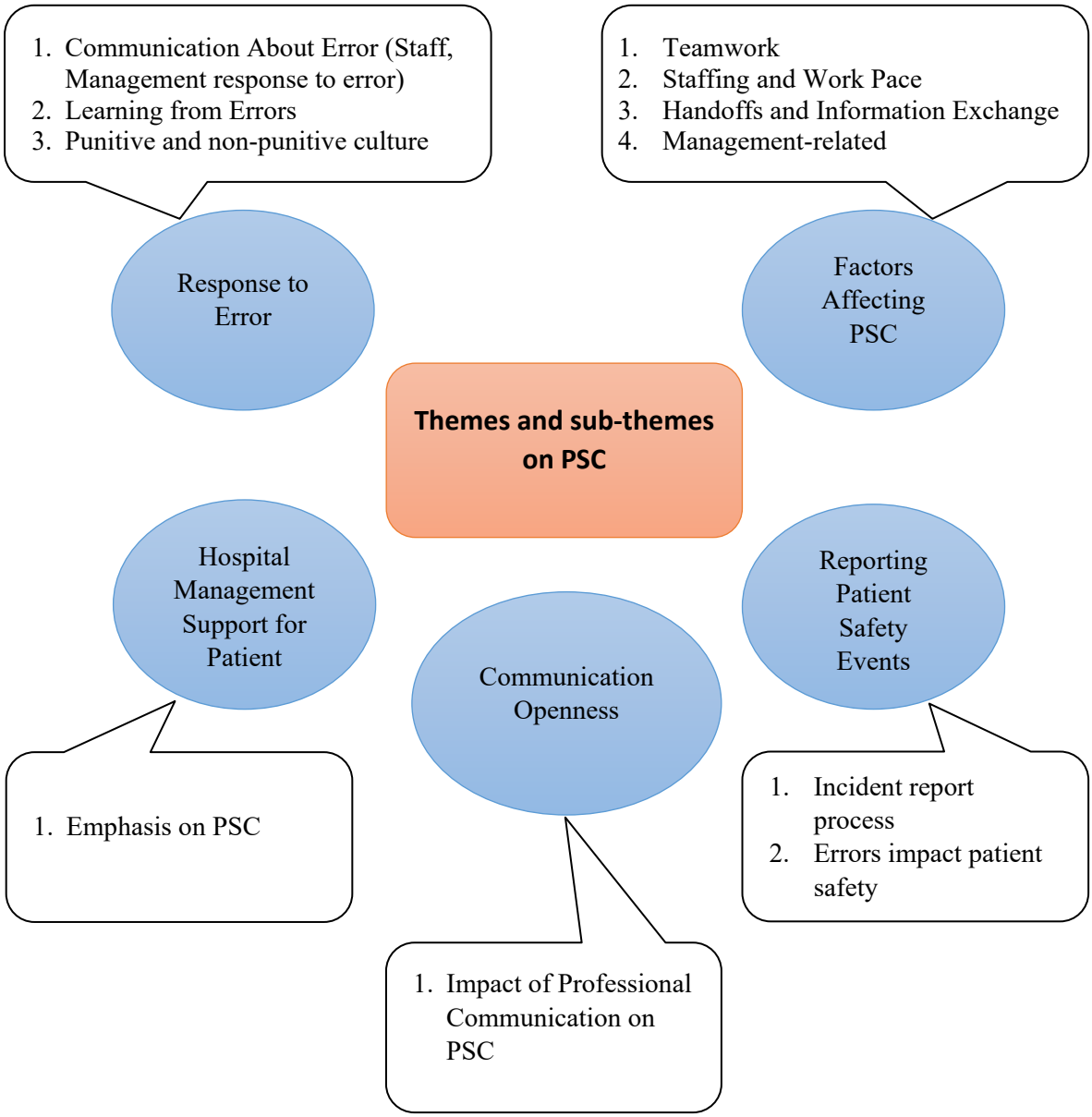

Figure 11 *Themes and Sub-Themes Related to PSC*

4.7.2 Theme 1: Factors the Nurse Faces that May Affect the PSC.

In this theme, participants mentioned the most common factors affecting nurses' perceptions of PSC, which are presented in four sub-themes.

4.7.2.1 Teamwork. Most interviewed participants agreed on the importance of teamwork to improve patient safety within and between the units. This reflects their perception of PSC regarding the domain of teamwork. One of the nurses stated:

> N 5 *"Teamwork decreases the workload on senior nurses that positively affects patient safety."*

Another senior nurse said:

> N1 *"The teamwork between departments provides more help as required to maintain patient safety."*

4.7.2.2 Staffing and Work Pace. The nurses agreed that an increase in the number of patients per nurse resulted in a higher workload, which led to more errors and compromised the safety of the patients; for example, one experienced nurse said:

> N1 "*When staff ratio decreases, patient safety is affected negatively, and if nurses' number increases, it is better regarding patient safety; it helps prevent falling events and medication time delays."*

Another nurse said:

> N3 *"...when nurses' numbers decrease, that increases workload and puts patients at risk, such as bed sores. As a result, you do not have time to change positions, so this factor is very important for patient safety."*

4.7.2.3 Handoffs and Information Exchange. Nurses expressed their perspectives on the importance of a good and uninterrupted handoff process. They noted that these interruptions might lead to missing information. A nurse said:

> N1 "*When new admissions arrive at the ward at the time of nursing handover, this causes interruptions and makes the nurses transform information fast, leading to missed data that may affect patient safety."*

Information missing could also occur between physicians and nurses when communicating information on a patient's condition. Physicians may also interrupt the nursing handover process to do a round or to check a patient and make new orders. A nurse said:

> N3 *"...doctors sometimes interpret us while handover causes incomplete handover."*

Another nurse said:

> N5 "*In my ward, the specialist mostly delays in patient's care in case of emergency and sometimes interrupts the handover. Also, some doctors are not competent, which affects patient safety."*

4.7.2.4 Managers-related factors. Most participants believed that the head of the unit plays a vital role in PSC. The attitude and communication skills of the head nurse may affect how nurses behave and work in their unit. For example, a nurse said:

> N4 *"...inappropriate behavior and stress of the head nurse led to staff stress and affect their work negatively which may affect patient safety."*

Another nurse said:

> N1 "*If the head nurse was stressed, that may affect the nurses and put them under stress, which may lead to errors and may cause medication errors."*

This also applies to nursing managers. Participants believed that the leadership style of their nurse leaders and matrons may affect their work, which in turn may affect the safety of patients. One nurse said:

> N1 *"...if the matron is more assertive and restricted regarding nurse-patient ratio this increases nurses' fear resulted in a negative effect that increases the possibility of errors."*

Another nurse said

> N2 *"The actions of the nursing managers affect the safety of the patient, such as not assessing the situation of patients in the department correctly, keeping one nurse on duty, or giving additional tasks that tire the nurse and affect him/her psychologically, which may affect the safety of the patient."*

4.7.3 Theme 2: Response to Error.

In this theme, participants expressed how they communicate errors, respond to mistakes, learn from them, and how the management deals with errors that happen or are reported. Their viewpoints were presented in four sub-themes.

Communication About Errors (Staff and Management Response to Errors). Communication about errors was different between hospitals; however, they all agreed that they report critical errors that affect patient safety. They report them to their managers or supervisors either verbally or in writing. They also agreed that they must discuss it with their colleagues to benefit from them and to take care of it so that it does not happen again. One nurse said:

N1 *"If any nurse faces an error, we alert other nurses in the department during handover and WhatsApp groups to take care of it to avoid reoccurrences of the same error."*

Another one said:

N4 *"The important errors that affect patient safety reported to administration."*

On the other hand, some participants mentioned that staff may fear punishment when reporting errors, which may affect the communication process of mistakes. One nurse said:

N6 *"...if incident reported to the administration, they may punish the nurse sometimes nurses may not report correctly, because we fear punishment."*

However, some participants believed that the manager's positive response to errors when communicated to them would help staff communicate about errors more effectively. For example, a participant said:

N2 *"In our hospital, there is a committee for incidents; my head nurse also gives us feedback regarding mistakes and recommendations to improve our practice."*

Another nurse said:

N1 *"Generally, the administration supports the person reporting the errors."*

4.7.3.1 Learning from Errors. The majority of participants mentioned that there is a learning opportunity taken from each reported error. Some mentioned that the administration supports and coaches the learning process. A nurse said:

> N7 *"After a patient falls, we have a policy and recommendations to keep the patient with a companion and not to close the bathroom door with lock, and our hospital provided the ward with a wheelchair."*

Another one said:

> N1 *"After the incident, a committee meeting is conducted, and, in some cases, they meet the nurse involved in the error. Based on the type of error, they recommend competency or training to maintain the patient's safety."*

4.7.3.2 ***Punitive and Non-Punitive Culture.*** Most participants believed that staff negatively communicates errors through departments when an error is reported. They also thought that it was taken personally and that they may be blamed. One nurse said:

> N7 "*I worry about the personal repercussions when writing an incident report, and in my work environment, they consider writing an incident report undesirable."*

Another one said:

> N5 *"In our hospital, they turn the reporting of the event into personal reasons that are far from professional, and the culture of blame exists."*

4.7.4 Theme 3: Communication Openness.

Interviewees expressed the importance of professional communication during work. They noted that it is one tool that helps prevent errors and improve patient safety.

4.7.4 .*1 Impact of Professional Communication on PSC.* Professional communication, especially when exchanging patient information, such as in the nursing handover process, helps prevent errors.

A nurse said:

> N4 *"Professional communication prevents missed data or inappropriate handover."*

Another said:

> N7 *"It is important that the communication with the patient's information be professional and clear, which certainly affects the patient's safety. The more effective the communication, the better we can maintain the patient's safety."*

4.7.5 **Theme 4: Reporting Patient Safety Events.**

This theme presented the incidents reporting process and what happens after, with examples of incidents that affected patient safety.

4.7.5.1 ***Incident Report Process.*** The process of reporting incidents differs in Palestinian hospitals but usually reported by writing an incident report and referring it to the hospital administration as a nurse said:

> N4 *"In our hospital, the incident report is sent to the quality committee and administration."*

Another one said:

> N1 *"When an error occurs, it is referred to the quality office and then to the committee. The committee provides recommendations to the nursing director, who mostly follows them and requires actions from the nurse. Sometimes, it may be*

referred to the HR department if the incident is major and causes harm to the patient."

4.7.5.2 ***Errors' Effect on Patient Safety.*** Some of the events had minor effects or no effect on patient safety. While others could harm the patient. However, these incidents are reported so that staff can learn from them and prevent their occurrences. One nurse said:

N7 *"I faced an event of falling off the patient with no harm."*

Another said:

N6 *"...unclear handover led to duplication of medication doses. For example, when transferring a patient, an incident happened between the ER and pediatric ward."*

On the other hand, some of the errors had a severe effect on patient safety, as a nurse said:

N6 *"I know an error happened; a nurse administered a D/W 50% instead of D/W 5% for a child, which led to brain oedema and death."*

4.7.6 Theme 5: Hospital Management Support for Patient Safety.

The participants presented how their hospital management emphasized the importance of PSC.

4.7.6.*1 Emphasis on PSC.* Some hospitals have a policy and training programs to prevent errors, and corrective actions are considered if they occur. One of the nurses said:

N6 *"...in my hospital, after the reported error, they do a policy to address it. For example, high alert medications are used to avoid further patient harm."*

Another one said:

> N2 *"Our hospital focuses on matters related to patient safety. It conducts courses and performance indicators and pays attention to correcting mistakes and learning from them, etc. For example, the patient at high risk of falling wears a yellow bracelet."*

4.7.7 *Themes on Job Stress*

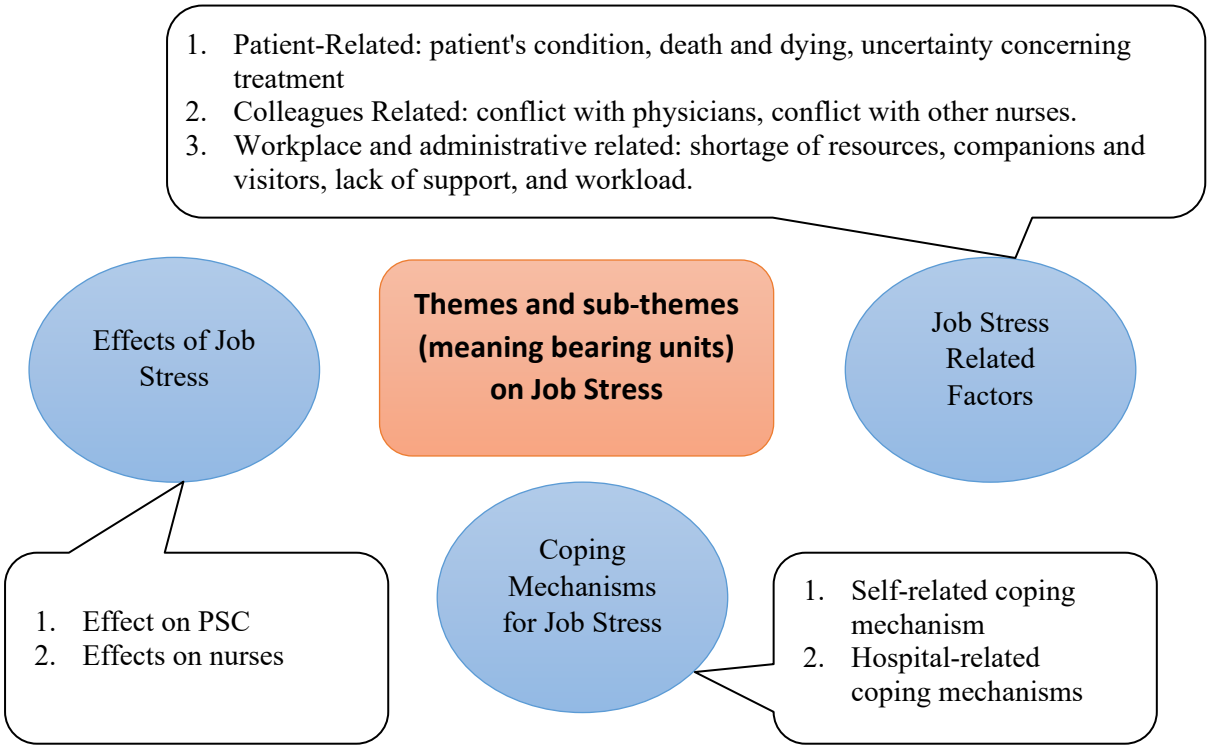

Figure 12 *Themes and Sub-Themes Related to Job Stress*

4.7.8 Theme 1: Factors of Job Stress among Nurses.

As the participants mentioned, many job-related factors increase their stress. The following sub-themes present these.

4.7.8.*1 Patient Related.* Nurses become stressed while they are on duty because some of the patients' conditions are bad, and their companions frequently ask the nurses about their patient's status; as an example, a nurse said:

> N3 *"...patient's conditions sometimes stressed me and patients' companions and visitors."*

Moreover, if the patient died, the nurse felt sad, as a nurse said:

> N6 *"...if a child died in my ward, my emotions were affected, and I became stressed."*

4.7.8.2 *Colleagues Related.* In workplaces, nurses may face conflicts with their colleagues of nurses and doctors that increase their stress and affect their duties. One nurse said:

> N5 "*Some doctors put me under stress if they delay in emergencies, for example, when an incompetent doctor is unable to do an urgent intubation."*

> N6 *"When I face conflicts with other nurses, I become angry, confused, and stressed, and my concentration on patient care is affected too."*

4.7.8.3 *Workplace & Administrative Related.* Nurses' stress is affected by a Shortage of resources, Companions, Visitors, Lack of support, and Workload. One nurse said:

> N5 *"If we have urgent admission while no preparation besides lack of equipment caused me stressed."*

Another said:

> N3 *"... the administration does not support us regarding the nurse-patient ratio, which increases our stress and affects our schedule, road condition, and transportation."*

Another example:

N4 *"Increased workload in my ward and unfair patient-nurse ratio increases the nurse's stress."*

N3 *"...my head nurse gives me assignments behind my word that increased my stress."*

Companions and visitors stress the staff because they frequently ask and interrupt their duties.

N5 *"...the visitors caused me to stress and interrupted my work."*

4.7.9 Theme 2: Effects of Job Stress.

Participants agreed that job stress affects both PSC and nurses. This is illustrated in the following examples.

Job stress negatively affects the nurses' work. It affects how they concentrate on their tasks with patients. One nurse said:

N6 *"...stress affects my concentration in providing patient care."*

Another one said:

N4 "*Job stress lowers my concentration and leads me not to do the procedures correctly, which may increase the occurrence of errors."*

Work stress affects the psychological status of the nurses and their performance. One nurse said:

N3 "…*I feel tired, frustrated, and not satisfied*."

Another said:

N4 "*Stress affects me negatively, and I try to be positive to accomplish my important tasks."*

4.7.10 Theme 3: Coping Mechanisms for Job Stress.

Nurses try to cope with job stress with different approaches. However, hospital administrations need to investigate their staff's stressors and help them cope.

Self-Related Coping Mechanism. Nurses try to cope with their stress by self-produced techniques such as debriefing, tourism, deep breathing, smoking, and others. For example, one nurse said:

> N7 *"Taking a rest and talking with my colleagues make me comfortable and decreases my stress related to work pressure."*

Another one said:

> N1 *"I do breathe exercise to decrease stress."*

4.7.10.1 ***Hospital-Related Coping Mechanisms.*** Some hospitals are concerned about stress management for their employees, while others are not. For example, a nurse said:

> N1 "*Our hospital instructed the nursing staff and required training, reflection, and reinforcement to cope with stresses."*

Another said:

> N4 *"...no support from my administration and no recreations."*

> N5 *"...no hospital-related strategies to relieve our stress."*

4.8 Summary

The chapter summarized both quantitative and qualitative findings on job stress and PSC. The quantitative analysis used HSOPSC and NSS data, revealing a general perception of PSC below 50%, indicating a need for improvement. Positive aspects were noted in "teamwork", "organizational learning-continuous improvement", "communication about the

error", and "supervisor, manager, or clinical leader support for patient safety", but issues like underreporting of safety events and communication were highlighted. The NSS identified workload and emotional stress from death and dying as significant stressors for nurses.

Statistical tests found five factors that predicted the perception of PSC, including income, hospital type, night shifts, activities performed to improve PSC, and unit rating on patient safety. However, activities to relieve nurse stress did not significantly predict PSC. Job stress was predicted by five demographic and workplace characteristics, including gender, academic level, hospital activities to improve PSC, hospital activities to relieve job stress, and unit rating on patient safety. Moreover, the analysis revealed a negative correlation between nurses' job stress and their perception of PSC, as measured by Pearson's r. This means that as job stress decreases, nurses' positive views on PSC tend to increase.

The qualitative data supported the quantitative findings, identifying eight key themes related to PSC and job stress. Notable nurse stressors included interactions with patients and their companions, the work environment, and conflicts with colleagues. Critical aspects of PSC highlighted were teamwork, staffing, communication, handoffs, punitive culture, response to errors, and management support. Nurses also recognized that job stress could negatively impact their performance and potentially compromise patient safety. The chapter emphasizes the need for targeted interventions to enhance PSC and reduce job stress among nurses.

Chapter Five

Discussion

5.1 Introduction

This study utilized a mixed-method approach to explore the connection between job stress and the perception of PSC within a hospital in the North West Bank of Palestine. The study was conducted on a convenient sample of 355 nurses working in 16 hospitals. This might be the first study of its kind in Palestine to investigate these two particular concepts in tandem. The mixed-method approach allowed an in-depth examination of nurses' views. Extensive data using a sequential explanatory technique provides support and legitimacy for the overall strategy (Creswell, 2009). This chapter aims to thoroughly analyze the significant findings derived from the quantitative survey data and the qualitative interview data. The main findings of the two phases are discussed and connected to the literature identifying the significant issues that increase job stress and affect the perception of PSC in Palestinian hospitals located in the North West Bank. The findings from the survey phase presented an overview of the perception of PSC in Palestinian hospitals in the North West Bank and the working conditions that might affect that perception. The findings also presented an overview of job stressors and the most common ones affecting employee performance and well-being. Interview findings are integrated with the survey findings to address the research questions.

5.2 Discussion of the Main Findings

5.2.1 Nurses' Perception of PSC

This study showed relatively low average positive responses to PSC. The overall perceived positive score in this study was 47%. Compared to other studies, the overall perception of PSC in our study was lower than the result of (Abu-El-Noor et al., 2019;

Alrasheadi et al., 2022; Bahri et al., 2023; Ballangrud et al., 2012; Fassi et al., 2023; Hamdan, 2013; Hao et al., 2020; Malak et al., 2022; Zabin et al., 2022) studies. Contrary, the overall perception of PSC in our study was higher than the results of (Ali Ali et al., 2022; Kakemam, Gharaee, et al., 2021; Ribeiro et al., 2022; Sosa-Palanca et al., 2022) studies. However, our result is relatively low compared to the average positive score in the AHRQ database report 2022, which was 70% (Hare et al., 2022). The result is congruent with a study conducted in Saudi Arabia to assess the effect of accreditation on PSC. The study reported a score of 45% for the overall perception of PSC (Al-Awa et al., 2012). The result of the present study is also similar to Mohammed et al. (2021), who reported a 44.8% overall perception of PSC. The results are similar to those of another study conducted in China, which showed an overall perception of PSC of 45% (Zhao et al., 2017).

Furthermore, our overall perception of PSC was almost similar to Oweidat et al. (2023); they reported a 49.2% positive score of PSC. The diversity of participants from public, non-public, and academic-accredited hospitals may contribute to this positive perception. In the present study, only one hospital has JCI accreditation in which nurses follow policies and procedures to provide safe and high-quality services. However, the rest of the hospitals have no national or international accreditations. Moreover, a possible explanation for the low result could be that patient safety initiatives are relatively new compared to other countries. The first published study in the literature about PSC in Palestine was in 2013. Furthermore, not very old, a limited number of hospitals in Palestine have actively engaged in patient safety initiatives, including the implementation of the PSFHI. Additionally, most of the interviewed nurses in our study reported that no activities on PSC were carried out at their hospitals, which may contribute to this overall score. However, this finding suggests that more initiatives and strategies with more hospitals to participate should be implemented to improve PSC in North West Bank hospitals.

5.2.2 The Highest Positive Composites of PSC.

The highest perceived positive composite in the present study was “Teamwork” and “Organizational Learning—Continuous Improvement”. These composites were the most reported with high positive scores in many studies (Alshammari et al., 2019; Alswat et al., 2017; Hamdan & Saleem, 2013; Kiaei et al., 2016; Zabin et al., 2022). The results from the interviews supported these findings. Nurses reported good teamwork in their hospitals and noted that “teamwork” is among the most critical factors that affect the perception toward PSC and improve the quality of care. They. One nurse mentioned, “*When we are working together as a team, each nurse does his/her task and completes the other nurse’s work to avoid any missed care for the patient*”. Another one mentioned, “*Achieving teamwork has a positive effect on the quality of work and patient’s safety too*”.

According to the AHRQ database report, the composites “Teamwork” and “Supervisor, Manager, or Clinical Leader Support for Patient Safety” had the highest positive scores. This is almost the same in our study. The “Teamwork” was the highest positive measured composite with an average positive score of 63.1%, while the average positive score, according to the AHRQ report, was 82%. This suggests an opportunity for improvement, focusing on staff working together as an effective team, helping each other during busy times, and being respectful. The result in the present study is also congruent with a review study conducted by Azyabi et al. (2021) to assess PSC and identify its components. They found that “Teamwork” was the highest positive reported composite using the HSOPSC tool; suggesting that these findings demonstrate how much the healthcare sector depends on multidisciplinary teams of experts with the skill sets required to carry out specific duties. Furthermore, studies showed how teams integrated, communicated, and exercised effective leadership impacted their clinical outcomes (Kozlowski, 2018). Similar results were found in

studies conducted in Egypt, Iran, and Palestine, which showed that “Organizational Learning—Continuous Improvement” and “Teamwork” composites had the highest positive scores (Aboul-Fotouh et al., 2012; Davoodi et al., 2013; Zabin et al., 2022).

Moreover, according to the AHRQ report, the second composite with a high positive score was “Supervisor, Manager, or Clinical Leader Support for Patient Safety”, with an average positive score of 80%. However, this composite was ranked third in the present study with an average positive score of 50.8%. The second-ranked composite in the present study was “Organizational Learning—Continuous Improvement”, with an average positive score of 55.8%. In comparison, it was ranked the sixth composite in the AHRQ report with a score of 70%. Nevertheless, the gap between the study findings and the AHRQ report suggests that improvements should be made to enhance the perception of PSC in the studied hospitals.

Furthermore, the result in the current study was congruent with a study conducted among Jordanian nurses, which found that the composite “Organizational Learning—Continuous improvement” was the second highest positive composite with an average score of 51% (Oweidat et al., 2023). This was also similar to the results of Güneş et al. (2016), Hamdan and Saleem (2013), and Alswat et al. (2017), who reported that composite “Organizational Learning—Continuous improvement” was the second-highest perceived positive score. Organizational learning is an essential element that impacts patient safety. Developing pertinent staff members' abilities and expertise based on event analysis can improve PSC (Azyabi et al., 2021). Furthermore, regular workplace procedures and events might lead to continuous improvement. Another way of regular learning and progress is through the most experienced employees working with the junior ones (Singer et al., 2007). The concept of continuous nursing education is evolving in Palestinian hospitals; only one hospital in this study, academic-accredited, has a special department for continuous nursing

education. This department works hard to improve nurses' competencies, especially concerning patient safety and professional development. Some of the interviewed nurses in this study reported that their hospitals take the opportunities for improvement and learning when a mistake is reported. One nurse noted, "*After the incident is reported, a committee meeting is conducted and, in some cases, they meet with the nurse involved in the error, and they recommend competency or training to maintain patient's safety depending on the type of the error*".

5.2.3 The Lowest Positive Composites of PSC.

The lowest average positive score in this study was in the "Response to Error" composite, which scored 30.9%, followed by the "Staffing and Work Pace" composite, with a score of 34.8%. This is almost congruent with the reported numbers in the AHRQ database. According to the AHRQ report, the lowest two composites were "Staffing and Work Pace" and "Response to Error", with 51% and 63% scores, respectively. This is similar to a study conducted in Saudi Arabia aimed to assess PSC, which found the lowest positive response rates were in the composites of non-punitive responses to errors (22%) and staffing (31%) (Aljabri, 2012). Another study conducted by Hamdan and Saleem (2013) in Palestinian public hospitals found that "Non-punitive responses to errors", "frequency of error reporting", "communication", "management support", and "staffing" had the lowest positive scores.

Staffing was the lowest perceived composite in more than half of the studies reviewed in a systematic review conducted by Azyabi et al. (2021). These studies showed that the staff felt overwhelmed and overworked by their regular tasks. Staffing was also the lowest-scored positive composite in a study conducted in China to assess the perception of PSC among healthcare staff (Nie et al., 2013). As a result, this problem affects the staff's ability to offer

high-quality care (Amarapathy et al., 2013). Furthermore, because the staff's concentration may be affected by overload and the presence of sufficient staffing, the staff's perception of PSC may be affected (Azyabi et al., 2021). Hospitals in Palestine suffer from staff shortages and limited resources, which can increase workload and the ability to deliver high-quality and patient-safety care. This was mentioned in the interviews of the current study. One nurse noted that "*the shortages are not only in the equipment; we have staff shortages*". Another mentioned, *"...when nurse's number decrease, that increases workload and take risks on patients as bed sore as a result you do not have time to do change position so this factor significant on patient safety*". Therefore, hospitals should focus on improving staffing, decreasing workload, and improving the working environment.

"Response to Error" and "Reporting Patient Safety Events" composites also received low positive scores in this study. Consistent with these findings in the present study, Hamdan and Saleem (2013), Güneş et al. (2016), Zabin et al. (2022), and El-Jardali et al. (2014) found that composites of " non-punitive response to errors" and "reporting patient safety events" were among the lowest perceived scores. A systematic review of PSC in Arab countries showed that the composite "non-punitive response to errors" was among the weakest areas that need enhancement (Elmontsri et al., 2017). The low score of these two composites may be rationalized by the absence of a well-organized incident reporting system and the fear of punishment in Palestinian hospitals. This was mentioned in the interviews in the present study. Some nurses mentioned that they fear reporting events because of punishment, while others noted that they only report serious events, even verbally. One nurse mentioned, "*...no incident report system is available in our hospital, and there is a negative response from the incident and personal issues and blaming culture*". This low score was explained by El-Jardali et al. (2014), who suggested that many participants said they do not notify their superiors or supervisors of events. Staff members may conceal problems due to such a

culture, which could ultimately affect how well patient safety is carried out. Therefore, hospital managers should encourage a culture of non-punitive responses to events (Feng et al., 2012).

Furthermore, Azyabi et al. (2021) suggested that more efficient reporting methods must be implemented. Reporting offers pertinent data regarding the frequency of incidents that may harm patient safety. The study also indicated that hospitals should implement and encourage ease in reporting to increase the chance to enhance their strategy, level of dedication, and the overall effectiveness of PSC.

5.2.2 Participants' Demographics and PSC

Income was the only variable significantly associated with PSC in the present study. Income was found to be a positive predictor of the perception of PSC, which means that higher income levels were associated with higher scores on the PSC. This association was not thoroughly discussed in the literature. However, this outcome could be taken into account when putting any patient safety improvement programs into action. One study in the literature conducted in Jordanian-accredited hospitals aimed to assess the perception of PSC among emergency nurses found a positive association between income and PSC; those with higher incomes perceived PSC more positively (Malak et al., 2022). Hospitals with better financial status generally tended to have better quality and safer care (Akinleye et al., 2019). Staff income was reported to affect their job motivation and performance (Darmawan, 2021; Deshwal, 2016). This may affect their attitudes, behaviors, and performance related to patient safety.

Furthermore, Income may influence the availability and quality of resources, the motivation and satisfaction of nurses, and the communication and teamwork among staff (Malak et al., 2022). In Palestine, hospitals face instability in terms of resources and salaries.

Due to Israeli deductions of Palestinian clearance revenues, staff may receive only 60% to 80% of their salaries. Given the rise in prices of vital goods, this is the government's most significant source of money. This may explain the association between income in Palestinian hospitals and staff attitude and perception toward PSC, which should be considered when improving PSC.

5.2.3 Participants' Workplace Characteristics and PSC

According to the results found in the multiple linear regression, “hospital type”, “performing activities to improve PSC in the hospitals”, “unit rating of patient safety”, and “night shifts” were predictors of the perception of PSC. The current study had three types of hospitals: governmental, non-governmental, and academic. The type of hospital positively predicted the perception of PSC. Participants working in the academic hospital had a higher positive perception of PSC. The only academic hospital in this study was accredited by JCI. Accredited and academic hospitals that work on professional development and medical student training focusing on safety culture and competency-based training. Hospital accreditation provides several conceivable advantages for enhancing performance in a medical context; it encourages patient safety and performance improvements (Hussein et al., 2021). JCI accreditation focuses on patient safety and risk management measures. A longitudinal study conducted in US hospitals concluded that culturally competent hospitals have a better PSC than other hospitals. The study results indicate that hospitals with higher levels of engagement in diversity programs had higher perceptions of management support for safety, teamwork across units, and nonpunitive responses (Upadhyay et al., 2022).

Furthermore, a study conducted in Lebanon aimed to assess the perception of PSC among healthcare staff in hospitals found that staff working in accredited hospitals and small hospitals had higher positive perceptions toward PSC (El-Jardali et al., 2010). Another study

conducted in Saudi Arabia found that accreditation significantly improved the perception of PSC (Al-Awa et al., 2012). The impact of accreditation on the perception of PSC is noteworthy, as Al-Surimi et al. (2021) highlighted. Furthermore, the current study findings indicate a generally low overall perception of PSC, which may be associated with hospital type. Notably, this relationship becomes more apparent when considering that only one hospital in the study was accredited. Remarkably, this accredited hospital demonstrated the most positive perception of PSC.

Moreover, hospitals that perform activities to improve PSC had a higher positive perception of PSC. Enhancing PSC is most effectively achieved through a comprehensive approach that integrates leadership, teamwork, and behavior change interventions (Mistri et al., 2023). Promoting a just culture environment is one of the key concepts for promoting patient safety (Kim & Yu, 2021). Based on a conducted comprehensive review, healthcare institutions play a crucial role in acknowledging the value of a just culture as a driver for patient safety. Implementing targeted interventions to enhance this culture, fostering increased reporting of errors and near-misses, and creating robust learning environments are essential steps (Barkell & Snyder, 2021). In a study conducted in Palestine to assess the changes in PSC after implementing the patient safety initiatives in public hospitals, the researchers found a positive effect of these initiatives on the overall safety culture (Hamdan & Saleem, 2018).

Moreover, implementing safety huddles has been shown to enhance the healthcare staff's perception of PSC, as noted by (Lai et al., 2023). Additionally, conducting regular surveys or assessments to measure and monitor the current state of PSC, identify strengths and areas for improvement, and evaluate the impact of interventions is essential in promoting safety culture (Agency for Healthcare & Quality, 2022). A study reviewed 66 studies on PSC

in hospitals found that accurate measurement of PSC is essential to improving patient safety (Azyabi et al., 2021). Furthermore, it was revealed that PSC improved when management supported multimodal interventions to promote teamwork, coordination, and communication within safe healthcare settings (Schram et al., 2022). Implementing strategies to improve teamwork and communication between healthcare staff can improve service quality, reduce errors, and promote a safety culture (Wieke Noviyanti et al., 2021). Based on that, in the present study, the accredited hospital that performs such activities had a higher positive perception toward PSC. However, most hospitals did not address a "just culture" enough, according to the interviewed nurses. This may be explained by the fact that their hospitals are not accredited, especially in light of the shortage of resources. Therefore, Hospitals can establish initiatives that strengthen teamwork and promote a just culture to improve the quality of services provided and enhance the perception of PSC.

Night shifts were a negative predictor of the perception of PSC. The more night shifts per week a nurse works, the more negative perception of PSC is reported. The result is congruent with a study conducted in Japan among healthcare workers, which aimed to assess the relationship between PSC and working conditions. The study found that extended work hours, several nights worked, and limited vacation days were linked to a low positive perception of PSC (Hayashi et al., 2020). The study also suggests that increased night shifts increased the reported incidents. Another study conducted among nurses in public hospitals in Saudi Arabia found that nurses working night shifts have reported experiencing physiological effects and problems with patient safety, which emphasizes the necessity for at-risk nurses to have assistance and psychological services (Alsharari et al., 2021). Furthermore, research has demonstrated that nurses who work night shifts are more susceptible to exhaustion and cognitive impairment, which can be dangerous for both the nurses and the patients they are caring for. (Schneider et al., 2020). In Palestinian hospitals,

the presence of the political situation and difficulties in transportation due to checkpoints and insecurity, nurses, especially those young, tend to work evening and night shifts. Therefore, and according to the previously presented studies, this may explain the negative relationship found in the present study. Thus, healthcare organizations should set priorities for measures to lessen the adverse effects of night shifts and extended working hours on the well-being of staff and patient outcomes (Hayashi et al., 2020). Managing the working environment and implementing plans to deal with the difficulties of working night shifts can help enhance the PSC.

The multiple linear regression analysis did not show a predictive relationship between "hospitals conducting stress-relief activities for nurses" and the perception of PSC. In contrast, the univariate analysis did reveal an association. It indicated that participants whose hospitals performed activities to relieve job stress tend to have a higher positive perception toward PSC. Some of the interviewed nurses reported that their hospitals do not perform activities to reduce stress, and the experienced job stress may affect their concentration, increase the chances of errors, and thus affect patient safety. This is supported in the quantitative part, where most participants reported that their hospitals did not perform activities to relieve job stress. Other nurses did not find that performing such activities can affect patient safety and their perception of PSC. The staff shortage and limited resources in Palestinian hospitals could explain this. Asefzadeh et al. (2017) pointed out that PSC is significantly associated with job stress. Therefore, hospital managers must consider performing activities and initiatives to reduce job stress to improve the working environment and increase the quality of care delivered, thus improving staff attitude toward PSC (Zabin et al., 2023). Furthermore, since job stress might affect nurses' performance and psychological well-being, increase the chances of errors, and decrease the quality of care provided (Dighe,

2020), nurses should be trained on coping mechanisms to reduce the effect of job stressors on their performance and attitude toward patient safety (Abdian et al., 2022).

5.2.4 Unit Rating on Patient Safety and Frequency of Event Reporting

Most nurses rated patient safety in their unit/working area as excellent and very good (54.1%). However, 17.8% of nurses rated their units on patient safety as fair and poor. In the multiple linear regression, the unit rating on patient safety predicted PSC. The higher the rating, the higher the positive perception of the PSC. Previous studies showed similar results. Mrayyan (2022) Found that about half of the participants rated patient safety as very good. Ejajo et al. (2017) Found that 20.1% of the participants rated patient safety in their units as fair and 2.5% as poor. Hamdan and Saleem (2013) Reported that 63.5% of the participants rated patient safety in their units as excellent or very good, while 9.5% rated it as poor or failing.

Moreover, the study results were similar to the AHRQ results reported in their database. The report mentioned that 66% of staff rated their unit/work area as excellent and very good for patient safety. On the other hand, 10% rated their unit as fair and poor in patient safety (Hare et al., 2022). Furthermore, different studies found a relationship between unit rating on patient safety and the perception of PSC. For instance, Najjar et al. (2018) found that the overall grade on patient safety was associated with the different composites of PSC, namely “supervisor/manager expectations and actions promoting safety”, “teamwork across hospital units”, “hospital handoffs and transitions”, “organizational learning–continuous improvement”, and “non-punitive response to error”. These composites were a significant predictor of overall grade on patient safety.

Another study by Ali et al. (2018) found that overall patient safety grade was significantly associated with six PSC composites. Other studies had similar results (Alswat et

al., 2017; Danielsson et al., 2019). Based on these results and the current study, healthcare leaders should prioritize hospital initiatives that improve the overall PSC. Despite nurses in Palestine reporting good patient safety ratings in their units, their perception of PSC was relatively low. This paradoxical situation can be described as a discrepancy between the reported patient safety ratings and the perceived PSC among nurses in Palestinian hospitals. Despite the positive ratings on patient safety, the underlying perception of the safety culture may be poor due to factors such as inadequate communication, lack of managerial support, or insufficient resources. This suggests that while patient safety outcomes may seem favorable, the foundational aspects of the safety culture require significant improvement to ensure these outcomes are sustainable and rooted in genuine safety practices.

In their study, Lee and Dahinten (2020) emphasized that effective leadership involves creating safety awareness, fostering a blame-free environment, and collaborating closely with nurses. These efforts significantly impact how patient safety is perceived and positively affect outcomes. Hospital administrators and leaders are pivotal in cultivating a safety culture that benefits nurses, patients, and staff. Although prior research has highlighted a strong relationship between patient safety ratings and specific elements of PSC, this study focused solely on the overall perception of PSC, not its individual composites. Future research should explore the relationship between patient safety ratings and the various composites of PSC.

Furthermore, this study found that 49.6% of nurses did not report any patient safety event in the past 12 months. At the same time, 31.0% reported from 1 to 2 events. This is congruent with the findings from a previous study conducted in Palestinian public hospitals. The study reported that 53.2% of the participants did not report any patient safety event in the past 12 months (Hamdan & Saleem, 2013). These numbers are similar to those reported in the AHRQ database report. The AHRQ reported that 55% did not report any patient safety

event in the past 12 months. Azyabi et al. (2021) Pointed out that many respondents refrain from reporting incidents to their supervisors due to fear of reprimand and a lack of safety awareness. This culture of non-reporting may lead to hidden issues that impact patient safety effectiveness. Nurses in the present study revealed insufficient reporting and fear of punishment. One nurse mentioned that "*when I faced an error, I did corrective measurements immediately as needed for the patients, but we do not write an incident report and keep the error a secret*". Another one mentioned, "*No incident report system is available in our hospital, and there is a negative response from the incident and personal issues and blaming culture*". These are connected with the low positive perception reported in the composite of "reporting patient safety events" and the composite "response to error" in the quantitative part of the current study.

Moreover, the manager's response to errors is very important. Some of the interviewed nurses reported that they face a punitive response to reported events from their managers. For example, one nurse mentioned, "*When I write incident, they take it as a personal issue with no professional handling with the incident in our hospital, not as a JCIA accredited hospital*". Encouraging non-punitive responses to errors can be fostered by managers, supervisors, and colleagues (Feng et al., 2012). Based on these findings, the low number of reports in the current study can be explained. These findings demonstrate a strict interpersonal environment between hospital managers and nurses. Thus, a lackadaisical attitude toward disclosing unfavorable incidents (Boughaba et al., 2019). This indicates an absence of privacy, oversight, and concern for possible consequences (Pattison & Kline, 2015). The construction of more trustworthy healthcare systems and organizational development relies heavily on the prompt and accurate reporting of adverse incidents (Cullati et al., 2019; Wang et al., 2020).

Furthermore, PSC is based on shared beliefs about a safe workplace, adequate communication, cooperation, learning, and improvement, the pledges made by healthcare executives, and the presence of a non-punitive framework for handling the occurrence of adverse event reporting (Kakemam, Hajizadeh, et al., 2021; Lee & Kim, 2020). Therefore, it would be essential to create a culture of safety where adverse events can be reported without identifying specific people. This would allow staff members to benefit from their errors and, if feasible, make enhancements to avoid similar mistakes in the future (Pattison & Kline, 2015; Smits et al., 2008).

5.3 Nursing Job Stress

Job stress can happen due to various sources in the workplace. These sources include workload, role conflict, unfavorable working circumstances, a lack of control, strained relationships with coworkers or superiors, and job instability (Vallasamy et al., 2023). These elements contribute to the high-stress levels among nurses, which have detrimental effects like tardiness or absence from work, depression, exhaustion, and poor job performance, all of which lower the standard of care (Rajabi et al., 2018). A study conducted in Namibia among registered nurses discovered that almost 95% of nurses were subjected to high stress levels. They found that the most frequent stressors were heavy workloads, insufficient staff, poor decision-making abilities, poor relationships with coworkers, a lack of stress-reduction resources, a lack of managerial assistance, and unfavorable working circumstances (Karodia et al., 2016). In the present study, “workload”, “insufficient staffing”, and “emotional stressors” are among the most perceived job stressors. However, most interviewed nurses reported that their hospitals do not have enough strategies to alleviate these stressors. One nurse mentioned, *“…no hospital-related strategies to relieve our stress*”. Some reported that their supervisors only listen to them, trying to help them relieve their stress.

5.3.1 Workload

The current study found that "Workload" was the highest perceived source of job stress among nurses in North West Bank hospitals. Workload and job stress were among the most frequently identified sources leading to high levels of stress at work (Macdonald, 2018). It was reported as the most common source of stress in different studies (AbuRuz, 2014; AIS, 2019; Alenezi et al., 2018; Hamaideh et al., 2008; Kwiecien-Jagus et al., 2018). The workload is linked to sleep disorders, emotional and physical health issues, and issues with families and individuals (Saedpanah et al., 2022). The result of this study is congruent with a study conducted in Oman among nurses that aimed to assess sources of job-related stress and found that workload was the highest perceived source of stress (Al-Yaqoubi & Arulappan, 2023).

Furthermore, a study conducted among nurses in Goa, India found that the workload subscale was the highest perceived source of stress (Pai Vernekar & Shah, 2018). Another study conducted among nurses in Nigeria found that workload was the most frequent source of stress (Faremi et al., 2019). Moreover, nurses interviewed in the present study mentioned that workload was the most common cause of stress in their work. One nurse noted, *"Workload in my ward is the main cause of job stress."* Another one mentioned, *"increased workload in my ward and the unfair patient-nurse ratio increases the nurse's stress"*. Increased workload increases job stress, as Erat et al. (2017) described. It was also found that heavy workplace stress levels among nurses were correlated with heavy workloads (Kokoroko & Sanda, 2019).

Moreover, increasing job demands increase job strains on nurses, according to the strain hypothesis (Karasek, 1990). The stressful setting in Palestinian hospitals, where nurses work with limited resources, may be a contributing factor to their job stress. Given its impact

on physical and psychological health, it is unsurprising that the study's findings indicate that workload predicts the stress that nurses experience at work. Nurses are the backbone of the healthcare system in Palestine. They are the ones who care for patients and their families, especially during emergencies. However, there is a shortage of nurses and resources in Palestinian hospitals with increasing job demands, which makes their jobs even harder. As nurses with heavy workloads are prone to high levels of job stress (Keykaleh et al., 2018), recruiting more nurses can help decrease the workload on existing nurses. Furthermore, providing nurses with clear roles, autonomy, and support from supervisors can assist in managing their workload (Kokoroko & Sanda, 2019). Moreover, the elevated workload observed in this study aligns with the JD-R model adopted in this study. Specifically, the combination of high workload and escalating job demands contributes to increased job strain and stress among nurses.

The three most stressful events in the subscale "workload" were "*not enough staff to adequately cover the unit"*, the "*breakdown of the computer"*, and "*too many non-nursing tasks required, such as clerical work"*. The workload is associated with insufficient staffing levels, leading to various unfavorable patient outcomes, including low survival rates (Lee et al., 2017) and poor nursing outcomes (MacPhee et al., 2017). Hospitals in Palestine have challenged circumstances and a lack of supplies, including staff, medications, and equipment (Hamdan & Hamra, 2017). Shortages of staff were mentioned in the interviews with nurses. One nurse noted, "*There is a shortage of nurses in our hospital and unit*". Another nurse mentioned, "*Increased workload in my ward and the unfair patient-nurse ratio increases the nurse's stress*". A study conducted in Nigeria by Faremi et al. (2019) found similar results that the most stressful event was "*not having enough staff to adequately cover the load of the ward".*

Another longitudinal mixed-method study conducted among nurses found that workload was the most frequent stressful condition and insufficient staffing was the most stressful issue (Halpin et al., 2017). Inadequate staffing levels per shift can occasionally lead to an incorrect skill mix and an individual taking command of the shift before they feel competent to perform so (Halpin et al., 2017). As the largest group in the medical profession, nurses play a crucial role in providing care. Globally, there is an ongoing problem with a shortage of nurses. The nursing field is still experiencing shortages due to insufficient prospective teachers, high turnover, growing patient acuity, a technological and knowledge surge, and an uneven workforce distribution (Haddad et al., 2023; Tamata et al., 2021). Njovu (2017) Raised concern about the influence of nurse shortages on workload and the quality of care. The impact of a shortage of nurses affects their performance, leading to stress and moral distress due to heavy workloads and long shifts. These challenges, in turn, have repercussions on nurses' physical health, psychological well-being, social interactions, family relationships, and leadership support (Tamata et al., 2021). Given the significance of the nurses' function in the healthcare system, addressing their shortages and improving their working environment is imperative to fulfill demand better and provide everyone with high-quality healthcare services.

Moreover, breaking down the computers puts an extra load on the staff by doing paperwork and breaking the communication channel through departments, including the pharmacy and laboratory. Breaking down hospital communication and computers and too many non-nursing tasks done as clerical work were among the most stressful aspects for nurses (Faremi et al., 2019). Al-Yaqoubi and Arulappan (2023) Also found that too many non-nursing tasks are required, such as clerical work, which is among the most stressful aspects of nursing work. Higher levels of job stress among nurses are linked to an abundance of non-nursing responsibilities (Bekker et al., 2015; Park & Hwang, 2021).

Furthermore, job stress among nurses, rendered by non-nursing activities, has a detrimental impact on the standard of nursing care, raises the risk of medical mistakes, and impacts job performance (Dighe, 2020). In the present study, one nurse in the interviews mentioned that *"…my head nurse gives me assignments behind my work duties that increased my stress"*. Shortages of staff and limited resources in Palestinian hospitals may increase the number of non-nursing tasks for nurses, which might explain the high perceived stress. Therefore, lowering the workload associated with non-nursing activities is essential to reducing workplace stress and enhancing nurses' well-being. Recognizing and reorganizing duty overlaps and tasks nurses complete, not from their duties, is critical to utilizing support services effectively.

5.3.3 Death and Dying

The current study's second highest source of job stress was the "Death and Dying" subscale. This is congruent with previous studies (AbuRuz, 2014; Dagget et al., 2016; Justine et al., 2018). A study conducted among nurses in Australia found that the primary sources of job stress were in the domains of "Death and Dying" and "Workload" (Peters et al., 2013). Many studies reported that dealing with issues of death and dying was a common source of stress (Al-Yaqoubi & Arulappan, 2023; Alenezi et al., 2018; Hamaideh et al., 2008; Kwiecien-Jagus et al., 2018). Moreover, a study conducted in Palestine among nurses working in public hospitals found that the most common sources of job stress were dealing with "death and dying" and "workload" (Ayed et al., 2015).

Furthermore, a study conducted in Greece looked at the relationship between a nurse's health-related quality of life, patient-caring behaviors, and work-related stress and found that the most frequent sources of stress for nurses included inadequate knowledge of dealing with death and dying; ambiguity about the management's therapeutic efficacy; dispute with the

supervisor; and inability to support patients' and families' emotional demands (Sarafis et al., 2016). Dealing with suffering patients and patients about to die can put enormous emotional strains on the caring nurses. One of the interviewed nurses mentioned that *"our patients are familiar with us and frequently visit us in oncology clinics. When a patient dies, we feel sad, and this puts stress on us"*. Additionally, Kostka et al. (2021) mentioned that observing patients who are dying causes intense emotions and a significant amount of job stress among nurses. Even skilled nurses may encounter depressing, upsetting, and emotional circumstances when providing care for dead or about-to-die patients and their family members (Sangan, 2016).

One explanation for nurses often experiencing stress related to their job when dealing with patients who are seriously ill or facing the end of life in Palestinian hospitals could be because of a mix of sociocultural factors, compassion for patients, and emotional reactions to witnessing suffering. This aspect of their job can be inherently stressful, even in routine situations. The emotional issues that nurses in the present study were experiencing in response to the patient's death or dying could have been brought on by their cultural and humanitarian sympathies. Dealing with suffering and dying patients and feeling helpless contributes to more anxiety and stress that impact nurses' physical, psychological, and social well-being (Iverach et al., 2014). Another explanation for the high level of stress in the subscale of death and dying may be the result of the medical staff's insufficient preparedness for the intense mental stress that comes with dying (Galvin et al., 2020; Steinhauser et al., 2001). Sarafis et al. (2016) pointed out that the aspect of dying that caused the most stress was not dying but instead dealing with the idea that people suffer in real life before they pass away. This is consistent with other findings that suggest that unfulfilled expectations and remorse over failing to be able to stop an unavoidable death can be significant sources of

stress that impair the ability of nurses to perform their duties well (Gelinas et al., 2012; Sherman, 2004).

Furthermore, the growing workload of nurses may leave them with little time to assist others with their feelings, particularly those about death and dying (Hamaideh et al., 2008). The previous results emphasize how crucial it is to give nurses caring for sick patients enough resources and assistance to help them manage and lessen the stress associated with their jobs. Since dealing with death while carrying out job duties might elicit strong emotions, it is essential to have healthy coping mechanisms for challenging circumstances.

The most stressful events in the subscale "death and dying" were "*watching a patient suffer* and *performing procedures that patients experience as painful"*. Al-Yaqoubi and Arulappan (2023) Reported similar results, as they found that "*watching a patient suffering"* was the most stressful event, followed by "*performing procedures that the patients experience as painful*" and "*feeling helpless in case of a patient who fails to improve"*. Watching a patient suffer might make nurses and other healthcare professionals feel more stressed at work (Gerhart et al., 2018; Pich, 2018). An explanation might be that healthcare workers, including nurses, may experience helplessness, frustration, and guilt when they watch suffering and fail to act appropriately, thus exacerbating job stress. Nursing duties depend on collaboration and communication with one another, patients, and their families, which requires much emotional engagement (Kwiecien-Jagus et al., 2018). So, it is essential to support nurses and prepare them to deal with terminally ill patients who are about to die and after-dying scenarios to alleviate emotional strains that would increase their stress. The absence of support can intensify the strain experienced by nurses, potentially impacting their performance. This observation aligns with the study's conceptual framework.

5.3.4 Participants' Demographics and Job Stress

The multiple linear regression showed that gender predicted nurses' perceived job stress. This result is congruent with previous studies that found that gender was associated with job stress (Babapour et al., 2022; Lee & Cho, 2016; Sani et al., 2024; Tsegaw et al., 2022). However, these results contradict the results from other studies that found no association between gender and perceived job stress (Al-Yaqoubi & Arulappan, 2023; Ayed et al., 2015; Faraji et al., 2019; Sayeed et al., 2017; Tristanti Puspitasari et al., 2020). According to Faraji et al. (2019), work stress affects men and women equally. However, the present study showed that male nurses had a higher level of job stress than female nurses. This is similar to a study conducted among nurses in Korea, which found that male nurses had noticeably greater overall job stress levels than female nurses (Lee & Cho, 2016). This may be due to their personal and professional obligations (Mudallal et al., 2017). Another study conducted by Sani et al. (2024) found that male nurses perceived higher levels of job stress than female nurses.

However, other studies found that female nurses had higher job stress levels than males. For instance, Tsegaw et al. (2022) found that female nurses perceived higher levels of job stress in hospitals. The discrepancy in the results in these studies may be from variations in the study locations, scoring methodology, and, most likely, sample size. The high level of job stress among males compared to females in the current study could be the increased social demand and family responsibilities on males in light of the financial situation, the lack of wages, and their interruption in Palestine. Another possible reason could be the differences between males and females in responding to job stress and coping strategies.

Another predictor found in the multiple linear regression was the educational level. The higher the educational level, the higher the level of stress perceived. Different studies

reported that educational level predicted nurses' job stress (Amarneh, 2017; Ghahremani & Ghorbani, 2011; Hamaideh et al., 2008; Mrayyan, 2009; Mrayyan et al., 2021; Tsegaw et al., 2022). Mrayyan et al. (2021) Assessed nurses' job stressors in different hospitals in Jordan and found that education level was one of the significant predictors of nurses' job stress. Tsegaw et al. (2022) Found that educational level was associated with job stress; however, their result indicated that higher educational levels had less job stress than diploma nurses, which contradicts our result where a higher level of education was associated with higher levels of job stress.

However, the current study result contradicts other studies that found no association between educational level and job stress (Ayed et al., 2015; Babapour et al., 2022; Keykaleh et al., 2018; Safarpour et al., 2018). Ayed et al. (2015) Conducted a study among Palestinian nurses in governmental hospitals; they reported that no significant association was found between educational level and perceived job stress. Individuals with more education often have better job resources like income, decision-making freedom, and diverse tasks. However, they also face higher job demands, such as longer work hours, pressure, intense tasks, and tight deadlines. These demands can lead to more stress and less job satisfaction, which somewhat balances out the benefits of having more resources (Solomon et al., 2022).

Moreover, a possible explanation of why nurses with high education levels experience higher levels of job stress could be because of role conflict and role ambiguity (Nabirye et al., 2011). It is also possible that high expectations are required from these nurses. In Palestine, nurses with bachelor's degrees, especially master's degrees, had no defined responsibilities or service plans. These issues could contribute to more job stress for nurses. Nevertheless, since the present study did not investigate organizational factors associated with job stress,

additional research is necessary to pinpoint stressors affecting nurses with different educational levels.

5.3.5 Participants' Workplace Characteristics and Job Stress

The multiple linear regression revealed that “performing activities to relieve job stress”, “performing activities to improve PSC in the hospitals”, and “unit rating on patient safety” were predictors of nurses’ job stress.

Implementing stress relief activities helps reduce job demand and stress (Bakhuys Roozeboom et al., 2020). Job/task-level interventions like job redesign and enhanced job control can reduce stressors (Gumm, 2014). When dealing with job stress, tackling the root causes is most effective (Srinivasan, 2022). Prioritizing prevention and addressing root causes of job-related stress is crucial in the management approach, as it prevents negative impacts from the beginnings (Health and Safety Executive, 2019). Organizational changes have a more significant impact than individual changes. While individual efforts can help people feel better, organizational changes address the root causes of stress and can lead to lasting improvements for individuals and the organization (Bakhuys Roozeboom et al., 2020).

However, many different approaches to interventions or programs enhance work organization and lessen the adverse effects of stressful employment on our health. Modifications might be implemented at the work level, organizational level, more personal level, or externally through rules (Landsbergis, 2018). The interviewed nurses reported that most of the stress relief activities are carried out on an individual level; hospitals do not provide activities on an organizational level to relieve job stress. One nurse mentioned, *“…no hospital-related strategies to relieve our stress.”* Another one mentioned that his supervisor listens to him when he is stressed and tries to calm him. However, this is still on an individual level. Although most of the participants in the quantitative phase reported that their hospitals

did not perform activities to reduce job stress, individual strategies such as supervisor support were noted to provide some relief. This indicates that while institutional measures are lacking, personal and immediate interventions by colleagues and supervisors play a critical role in managing stress in the workplace. The reliance on individual-level support highlights a gap in organizational responsibility and suggests a need for systemic changes to address job stress comprehensively. It underscores the importance of developing and implementing hospital-wide initiatives to provide nursing staff with more structured and effective stress management support. Thus, Palestinian hospitals must implement strategies and initiatives that effectively mitigate and address the primary sources of stress perceived by nurses.

Moreover, performing activities to improve PSC, as reported by nurses, predicted job stress. Nurses whose hospitals perform activities to improve PSC perceived lower levels of job stress. Introducing initiatives to enhance the PSC can alleviate job-related stress for nurses (Mabruroh et al., 2023). A similar result was found by Jung and Choi (2017), who reported a negative relationship between patient safety activities and job stress. Furthermore, Bahrami Azar et al. (2023) suggest that enhancing the safety culture may reduce job stress and increase employee satisfaction.

Furthermore, addressing safety and health concerns will ultimately boost job satisfaction while mitigating job stress. The aim of fostering a positive safety culture within the organization is to establish an environment where workers are well-informed about workplace risks and equipped with strategies to mitigate them (Al Ali, 2022). When the organization works on prioritizing safety and fostering a positive safety environment, it not only boosts employees' happiness at work but also ensures a safe and healthy workplace (Bahrami Azar et al., 2023). Moreover, Zabin et al. (2023) suggested in a systematic review study conducted to examine the relationship between job stress and PSC that focusing on

safety culture initiatives to reduce job stress positively affects nurses' well-being and patient outcomes. Furthermore, (Kim & Lee, 2019) pointed out that promoting patient safety nursing activities requires a good job atmosphere, organizational culture, appropriate treatment and rewards, a well-organized nursing team, and effective communication. Therefore, when healthcare organizations focus on enhancing PSC, they create a workplace where nurses feel supported and safe. This, in turn, reduces their stress and contributes to better patient outcomes.

Additionally, the study demonstrates that nurses' rating of patient safety in their work units predicts their levels of job stress, aligning with the observed effect of PSC activities on job stress. Those rating their unit's patient safety as subpar experienced heightened job stress. This result may reflect nurses' view to improve the PSC in order to reduce the level of job stress. Notably, this study is among the first to explore the direct correlation between 'unit rating on patient safety' and job stress, marking a significant contribution to the field and setting a precedent for future research.

Moreover, the study's findings reveal a relationship between nursing years of experience and job stress. While the univariate analysis identified a significant association between job stress and factors such as income, hospital type, and experience in the current unit, the multiple linear regression did not confirm these as predictors of job stress. Interestingly, in our sample, nurses with 11 years or more of experience in their units had lower mean stress scores than their colleagues. However, they are still relatively young in their careers, particularly notable as only 21 participants aged 40 or older in the study. Contrastingly, the literature suggests that increased experience correlates with higher job stress. For instance, Safarpour et al. (2018) observed a positive relationship between job stress and years of experience. Similarly, Aktharsha and Anisa (2011) reported that more

experienced nurses in India faced higher job stress. However, other studies, such as those by Al-Yaqoubi and Arulappan (2023), Hamaideh et al. (2008), and Keykaleh et al. (2018), found no correlation between the two variables. The discrepancy in findings could be attributed to differences in study settings and organizational types.

Moreover, it has been generally observed that more experienced staff tend to have lower job stress levels than their younger counterparts (Osei-Mireku et al., 2020; Sani et al., 2024; Tsegaw et al., 2022). This is similar to the present study's result, which showed nurses with 11 or more years of experience in their unit had lower stress levels than their colleagues. These results suggested that since professional advancement is no longer a top priority for the older staff, many aspects of their jobs that could stress out younger staff—who still have a long way to go in their careers—do not stress out older staff (Osei-Mireku et al., 2020). Additionally, this could have to do with the highly experienced workers' capacity to assign work, deal with different problems, and stressed emotions (Sani et al., 2024). Furthermore, since more years of experience are linked to age, more aged staff can handle stressful situations better (Shukla et al., 2016). This may be related to one's capacity for stress management.

Moreover, income was also associated with job stress in our study. This result was congruent with a previous study conducted to assess the association between job stress, working experience, and income, which found that working experience and income were associated with job stress (Badil & Ur-Rehman, 2018). Income, as well as other factors like workload, unclear job, and poor supervision, can affect staff's psychological well-being (Badil & Ur-Rehman, 2018; Garrosa et al., 2010), which in turn affects their performance, increases their job stress, and decreases the quality of care delivered (Moustaka & Constantinidis, 2010). Income can be a critical factor affecting nurses’ satisfaction (Lephalala

et al., 2008). It can affect the outcomes of the nurses (McHugh & Ma, 2014). One nurse in the present study mentioned in the interview that "*salary-related factors cause stress*". Nurses in Palestine face difficult situations in terms of salaries. Due to Israeli occupation and their deduction of clearance revenue from Palestinian authorities, nurses and other employees might take from 60% to 80% of their salaries each month, which makes it challenging to fulfill their family requirements. However, salaries alone are not the only factor that, if improved, the nurses become more relaxed at work. Improving salaries and other workplace factors contributing to job stress and dissatisfaction, like workload, role ambiguity, and supervision, could improve nurses' stress and care outcomes.

The working unit was also associated with job stress during our study. This result is congruent with a study conducted in Iran, which found a significant association between job stress and the type of unit/ward (Safarpour et al., 2018). Another study found similar results; Tsegaw et al. (2022) found that the working unit was associated with nurses' job stress. However, this result contradicts a previous study conducted in Oman, which found no correlation between the working unit and job stress (Al-Yaqoubi & Arulappan, 2023). Similarly, Hamaideh et al. (2008) found no correlation between the type of working unit and nurses' job stress.

Given that every unit has a unique setting and requires different skills and responsibilities, it is reasonable to infer that some units experience higher levels of job stress than others, especially areas like ICUs and ORs that need more experience (Safarpour et al., 2018). Tsegaw et al. (2022) Explained that the lack of time off, the hectic nature of the ICU job, and the stress that comes with caring for seriously ill patients could all be contributing factors. In addition, nurses with experience in the OR and ICU must put forth more effort to guarantee patient safety than nurses in other units.

Furthermore, the results of the current study showed an association between the type of hospital and nurses' job stress. Nurses working in governmental hospitals had higher job stress levels than those working in non-governmental and academic hospitals. This result is congruent with a study conducted in Dessie City in Ethiopia, which found that nurses who worked in public hospitals had higher levels of job stress than those who worked in private hospitals (Tsegaw et al., 2022). A similar result was also found in a study conducted in Uganda, which pointed out that job stress among nurses working in public hospitals was higher than that of those working in private hospitals (Nabirye et al., 2011).

However, previous studies found different associations between the type of hospital and overall job stress in different subscales (Amarneh, 2017; Mrayyan et al., 2021). These studies found that teaching hospitals —like the academic hospitals in our research— had higher overall nurses' job stress than public hospitals. For instance, Amarneh (2017) found that nurses working at teaching hospitals scored higher levels of stress in three subscales, namely in "uncertainty concerning treatment", "inadequate preparation", and "lack of support", than in nonteaching hospitals, including private hospitals. A possible explanation for the current result might be the shortage of nurses and resources and the increased workload in public hospitals in Palestine. Public hospitals had high patient flow, fewer resources (both human and medical), and a lack of activities to relieve stress among the staff, as mentioned by the interviewed nurses. Therefore, MOH must put efforts and initiatives into improving nurses' workplaces and implement job stress relief activities to enhance their nurses' well-being and performance.

5.4 The Relationship between Job Stress and Patient Safety Culture

This study examined the relationship between job stress and PSC. The study results found a significant relationship, indicating that increased job stress levels negatively affect

the perception of PSC. This finding validates the conceptual framework adopted in the study, which is based on the JD-R model. Specifically, as nurses experience higher levels of strain and stress coupled with inadequate support, their perception of PSC tends to become more negative. The result aligns with a study conducted in Malaysia to examine the prevalence of nurses' job stress and the PSC, which found a negative relationship between job stress and PSC (Paneerselvam et al., 2022). Another study conducted to assess the relationship between job stress, burnout, and PSC found that healthcare workers who had high levels of job stress and burnout appeared to have more negative perceptions of PSC, which may have an impact on the standard of care given (Suptitz Carneiro et al., 2021).

Furthermore, a study conducted in Brazil to assess the relationship between job stress, burnout, and PSC among healthcare staff in perioperative units found a noteworthy inverse relationship between the safety culture and the prevalence of burnout and job stress (Munhoz et al., 2021). Moreover, a recent study aimed to assess the influence of job stress on PSC among nurses in a tertiary hospital found a negative relationship between job stress and PSC, suggesting that job stress is one of the common factors that lead to reduced PSC and quality of nursing care (Sani et al., 2024).

According to Chatzigianni et al. (2018), The effects of stress at work on nurses' performance impact both nurses and the organization. Thus, moderate to high levels of stress have an impact on nurses' professional attitudes. Job stress makes nurses more likely to communicate poorly with colleagues, which lowers the standard of nursing care (Werke & Weret, 2023). Therefore, job stress shapes professional attitudes, which impact nurses' and organizational performance, breaking the PSC. Recognizing enhanced safety cultures within healthcare organizations is becoming increasingly important to boost the quality of care (Reis et al., 2018). Nurses in the interviews pointed out that workload and job stress may decrease

their concentration and lead them not to perform well, which could increase errors, putting patient safety at risk. Staff who are burned out and have heavy workloads are more likely to perceive PSC negatively (Suptitz Carneiro et al., 2021). Those staff often encounter fatigue, decreased motivation, exhaustion, negative interactions with coworkers, mental anguish, increased turnover, and lower productivity (Schooley et al., 2016). Patient safety, therefore, may be jeopardized when there is a lack of desire to work, satisfaction, and positive things that encourage workers to improve their performance. Thus, ensuring patient safety requires that nurses have a better safety culture. Briefly, lowering job stress levels among nurses may improve PSC and care quality.

The findings indicate a correlation with and endorsement of the JD-R model. Within nursing, the demands placed on nurses and the need to deliver high-quality patient care are substantial. However, the scarcity or absence of essential job resources in hospitals—such as adequate staffing, managerial support, and access to clinical resources—creates an imbalance between job demands and available resources. To address workplace demands, hospital management or leadership should ensure nurses receive adequate job resources and support.

The JD-R model plays a crucial role in achieving equilibrium between the demands placed on healthcare professionals and the available resources within hospital environments. Mitigating the adverse impact of job-related stress on nurses and hospitals enhances employee well-being and overall organizational outcomes. Hospital administrators should recognize job demands that may lead to work-related stress among nurses. They should proactively address these demands by providing relevant resources such as sufficient staffing, clear role definitions, managerial support, access to clinical resources, training opportunities, and stress management strategies. This approach aims to enhance the nurses' work environment, boost motivation, and foster more substantial job commitment. Furthermore,

hospital administrators should focus on supporting their staff to alleviate the burden of high job demands. Support from coworkers, superiors, and the organization is crucial for nurses to lower their stress levels and increase job satisfaction (Tuckett et al., 2015). Hospital administrators should recognize job demands that may lead to job-related stress among nurses. They should proactively address these demands by providing relevant resources such as sufficient staffing, clear role definitions, managerial support, access to clinical resources, training opportunities, and stress management strategies. This approach aims to enhance the nurses' workplace, boost motivation, and foster more substantial job commitment. This will promote a positive attitude and values for nurses toward patient safety.

5.5 Strengths and Limitations

This might be the first study conducted in Palestine and the region investigating the relationship between job stress and PSC. The study used the mixed-methods approach to improve the validity and reliability of the findings and produce rigorous outcomes. This study aims to collect qualitative and quantitative data to provide a more comprehensive picture of the relationship between job stress and PSC in 16 hospitals in Palestine's North West Bank. One advantage of utilizing a mixed method approach was that it offered a more comprehensive grasp of the study questions compared to quantitative or qualitative techniques alone. It minimizes the drawbacks of each method while maximizing the benefits of both approaches (Creswell & Creswell, 2017).

Another strength of this study was the response rate and surveying different hospitals with different settings and geographical areas. The response rate was relatively high in the selected sample for the quantitative part. Thus, generalizations of the findings might be possible in other Palestinian hospitals.

The purpose of the qualitative part of the study was to gather more detailed information about the survey results to comprehend how nurses perceived job stress and the culture of patient safety. The inquiries during the interviews diverged from those posed in the questionnaire. The interview insights supplemented the questionnaire data, enriching our understanding and adding depth to the results.

However, the study has some limitations. First, the insights drawn from both methods were constrained by collecting data from two distinct groups of individuals. Nevertheless, employing these two methods yielded distinct data sets that complemented each other, resulting in a more cohesive understanding of nurses' perceptions of job stress and PSC. Second, the study used a convenience sample of 355 nurses; this may affect the generalizability and representativeness of the study results. However, the study was conducted in 16 different public, private, and NGO hospitals in the North West Bank in Palestine. Additionally, the researcher tried hard to select a diverse group of nurses from various units. Third, the study utilized a nonexperimental cross-sectional design, which can affect the results regarding the relationship between study variables and give only correlations or associations, not a causal relationship. However, this design was the most suitable for answering the research questions. Fourth, the nurses filled out the questionnaires themselves, which could increase the bias while answering the questions. The nurses might misinterpret some questions, be confused about a question, or answer the questions in a distracted environment. Using self-reported data was much more feasible due to the large number of hospitals distributed in different cities with transportation difficulties due to checkpoints. However, the researcher tried as much as possible to clarify the questions to many nurses and ask them if anything was unclear; sometimes, a new questionnaire was given to some nurses to fill it again.

5.6 Conclusion

This mixed-method study explored the relationship between nurses' perceived job stress and their perception of PSC. The findings indicate a negative association between job stress and PSC. It was observed that perceptions of both job stress and PSC are influenced by various factors, including gender, income, type of hospital, academic level, unit rating of patient safety, and the implementation of activities aimed at stress relief or PSC enhancement. The study identified several areas within PSC that require strengthening, with PSC scores falling below those reported in the AHRQ database. To cultivate a culture of safety and continuous improvement, healthcare organizations need to move away from a blame-oriented culture and fear of reporting towards an environment that encourages open communication and ease of reporting. Additionally, the study suggests that improvements in PSC can be achieved by enhancing the work environment and job demands, which include reducing workload and job stress, improving staffing levels, and offering psychological support to nurses.

To the best of our knowledge, this dissertation was the first in Palestine to thoroughly understand nurses' perceptions and experiences about job stress and PSC. The findings are helpful and can inform enhancements in organizational training and professional education, aiming to better the work environment and PSC. Additionally, these findings will aid in formulating effective strategies to reduce job stress within healthcare settings and bolster PSC, ultimately elevating the quality and safety of patient care. With this, the discussion chapter and the study are brought to a close.

5.7 Recommendations

5.7.1 Recommendations for Practice

The study's findings and the reviewed literature offer valuable recommendations for nurses' workplaces and PSC. These recommendations have significant implications for hospital administration, nurse managers, nurses, and the healthcare system. These key recommendations are:

1. **Non-Punitive and Supportive Environment:** Hospital leaders should actively foster a non-punitive and supportive environment. When nurses feel safe to report errors without fear of reprisal, it enables the hospital to identify system failures and opportunities for improvement. Encouraging open communication is crucial.
2. **Training and Effective Leadership:** Hospitals should invest in training programs that equip nurses with the necessary skills and knowledge related to patient safety. Additionally, strong and effective leadership plays a pivotal role in promoting a culture of safety. Leaders should champion patient safety initiatives and set the tone for the organization.
3. **Awareness Workshops and Meetings:** Conducting workshops and meetings to raise awareness about patient safety and error reporting. These forums allow healthcare professionals to stay informed and contribute to a culture of safety.
4. **Frequent Assessment:** Regular assessment of PSC within hospitals. Identifying areas for improvement ensures that necessary initiatives are promptly implemented.
5. **Robust Reporting System:** Establishing a robust system for reporting, evaluating, and providing error feedback. Confidentiality is paramount to encourage open reporting.

6. **Learning from Mistakes:** Prioritizing learning from mistakes. Each error presents an opportunity for improvement. By analyzing incidents, hospitals can enhance patient safety practices.
7. **Just Culture:** Implementing a “just culture” strategy. This approach balances accountability with understanding, encouraging error reporting without fear of punitive measures.
8. **Education Curriculum:** Universities should incorporate PSC into nursing education. Equipping future nurses with these principles ensures a safer healthcare environment.

Hospitals' PSC must align with their mission and vision. Nurses must receive adequate training and expertise to achieve predetermined goals. By implementing these recommendations, hospitals can enhance patient safety, support nurses’ well-being, and create a more resilient healthcare system.

Moreover, nurses commonly encounter job stress related to their workload. This stress often stems from staff shortages, increased patient loads, and non-nursing tasks. To mitigate this burden, the following strategies could be considered:

1. **Recruiting Additional Nurses:** Hiring more nurses can help distribute the workload effectively.
2. **Assigning Aid Nurses:** Assigning aid nurses specifically for vital sign monitoring and assisting with routine patient care tasks can alleviate the workload on primary nurses. This approach ensures that nurses can focus more on critical responsibilities while maintaining patient safety.
3. **Clerical Personnel for Non-Nursing Tasks:** Employ clerical personnel to handle administrative duties, freeing up nurses’ time.

However, hiring new nurses can be challenging due to political situations and resource shortages. To address this, hospitals and healthcare authorities like MoH should implement strategic measures such as:

- **Organizational Coping Mechanisms:** Develop creative organizational coping mechanisms to manage nursing stress.
- **Supportive Environments:** Foster supportive work environments that prioritize nurses' well-being.
- **Counseling Services:** Offer counseling services to help nurses navigate stress and burnout.

Additionally, nurse leaders could play a crucial role in supporting their teams by implementing:

- **Effective Communication:** Establishing efficient communication channels to clarify roles and expectations.
- **Conflict Resolution:** Addressing conflicts pragmatically to maintain a positive work atmosphere.
- **Shift Work Policies:** Creating policies to reduce stress related to irregular shift schedules.
- **Support Groups:** Establishing support groups for nurses to share experiences and coping strategies.
- **Observational Skills:** Training leaders to recognize signs of heightened stress and burnout.

Persistent stress related to work among nurses serves as an early warning sign for compromising PSC and the quality of nursing care. The MOH and hospital managers must work together to create stress management plans for nurses that incorporate early

detection and assessment of sources of stress in the workplace. By minimizing stressful circumstances, nursing managers and all hospitals must assume accountability for the health and well-being of their employees. Therefore, comprehending the essential factors for alleviating job stress among nurses is invaluable in supporting those on the frontline of delivering safe patient care.

5.7.2 Recommendations for Future Research

These could be a helpful recommendation for future research:

1. **Wider Geographic Scope:** It is recommended that further investigations be conducted in other Palestinian hospitals across different geographic areas using a larger sample size. This comprehensive approach will enhance our understanding of nurses' perceptions and increase the robustness of study results, thereby improving their generalizability.
2. **Beyond Self-Reporting:** While self-report tools are valuable for capturing participants' perspectives, consider using additional measures beyond self-reporting. Direct observations of actual behaviors provide deeper insights into how various variables relate to job stress.
3. **Qualitative Exploration:** Enrich future research using a larger qualitative sample. Involve other experts beyond nurses to gain a comprehensive understanding of the psychological impact of job stress on staff members.
4. **Causal Relationships:** Investigating the causal relationship between job stress and PSC. Understanding how these factors influence each other can inform targeted interventions.
5. **Identifying Specific Stressors:** Exploring the relationship between different sources of job stress and PSC. Identifying specific stressors will guide interventions and

highlight areas for improvement. The nurse-patient ratio is one of the important stressors that need investigation and was not covered in this dissertation.

6. **Individual-Level Factors:** Examining individual-level factors that contribute to job stress. Understanding how these factors affect job performance is essential for supporting frontline healthcare providers.

Addressing these research recommendations can enhance patient safety, improve nursing care quality, and effectively support healthcare professionals.

5.8 Implications of the Study

To the best of our knowledge, this study is the first to examine the relationship between perceived job stress and PSC among nurses in Palestine. Notably, the literature chapter revealed that no prior research has explicitly connected these two concepts within the Palestinian or global context, underscoring the significance of this investigation. The absence of data specific to Palestine and cultural variations in attitudes underscores the necessity of thoroughly exploring nurses' perspectives on job stress and PSC in this unique setting.

Key contributions of this dissertation include:

1. **Corroboration of the JD-R Model:** This study validates the JD-R model through statistical analysis. It reveals how heightened job demands and diminished job resources adversely impact PSC. These findings enhance our understanding of the factors influencing job stress and safety culture.
2. **Empowering Nurses:** The results emphasize the need to bolster job resources and empower nurses to contribute to a positive PSC. Additionally, enhancing nurses' well-being and quality of life is crucial. Granting them more authority and autonomy can positively impact patient care.

3. **Methodological Advancement:** This study breaks new ground by employing a mixed-method approach. Insights from the literature review informed the selection of surveys and interview questions, allowing for a comprehensive exploration of job stress sources and nurses' perceptions of PSC.
4. **Efficient Problem-Solving:** The findings encourage managers and administrators to address nurses' challenges proactively. Understanding the factors contributing to job stress allows for more effective problem-solving.
5. **Stress-Coping Mechanisms:** The study findings will be valuable for hospital administrators and nursing managers in developing programs to enhance working conditions and alleviate the most common sources of job stress perceived by nurses. Implementing stress-coping mechanisms at the organizational level will support stressed nurses and contribute to a healthier work environment.

This study highlights the prevalent job factors impacting nurses' well-being and PSC. It also underscores the necessary efforts to enhance both of these critical areas. This research underscores the need to prioritize nurses' health and safety, ultimately benefiting patient care outcomes.

5.9 Summary

This study sheds light on nurses' perspectives regarding job stress and PSC in hospital settings within the North West Bank. Key findings indicate that nurses experiencing job stress may exhibit decreased performance and productivity, ultimately negatively impacting PSC. Stress has far-reaching consequences for nurses, patients, and the hospital.

Stress reduction measures are essential to enhance nursing working conditions and improve PSC. Addressing these critical issues can elevate the overall quality of care. This

dissertation offers a comprehensive analysis and substantial recommendations for tackling these challenges.

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Appendices

Appendix A *Participants Demographics Sheet*

العلاقة بين الضغط الناتج عن العمل ومستوى إدراك ثقافة سلامة المريض بين ممرضي المستشفيات في شمال فلسطين

The Relationship between Job Stress and the Perception of Patient Safety Culture Among Hospital Nurses in North West Bank Hospitals

هذا الاستبيان يهدف الى التعرف على آرائكم في القضايا المتعلقة بالضغط الناتج عن العمل ومستوى إدراك ثقافة سلامة المريض لدى التمريض، ويحتاج من بين 10 الى 15 دقيقة لتعبئته. يتكون الاستبيان من ثلاثة اقسام (المعلومات الشخصية، مقياس الشعور بالضغط للتمريض، مقياس سلامة المريض في المستشفيات) يرجى تعبئتها جميعها.

- **القسم الأول: المعلومات الشخصية**

يرجى الإجابة على الأسئلة التالية عبر **ملئ الفراغات او وضع إشارة** √ عند الخيار المناسب:

العمر (بالأرقام فقط): _____	**الجنس:** ☐ **ذكر**	☐ **أنثى**		
الحالة الاجتماعية	☐ أعزب/عزباء	☐ متزوج/ة	☐ مطلق/ة	☐ أرمل/ة
منطقة السكن	☐ نابلس	☐ طولكرم	☐ جنين	☐ قلقيلية
	☐ رام الله	☐ بيت لحم	☐ الخليل	☐ سلفيت
	☐ طوباس	☐ القدس	☐ أخرى: _____	
معدل الدخل الشهري (بالشيقل)	☐ 3000-1000	☐ 5000 - 3100	☐ أكثر من 5000	
الشهادة الجامعية	☐ دبلوم	☐ بكالوريوس	☐ ماجستير	☐ دكتوراه
التخصص (شهادات عليا)	☐ تمريض عناية مكثفة	☐ تمريض تخدير	☐ تمريض طوارئ	☐ تمريض اطفال
	☐ تمريض اداري	☐ لا يوجد	☐ اخرى: _____	

مكان العمل	☐ مستشفى النجاح الجامعي	☐ مستشفى رفيديا الجراحي	☐ المستشفى الوطني
	☐ المستشفى العربي التخصصي	☐ المستشفى الانجيلي	☐ مستشفى الهلال الأحمر - نابلس
	☐ مستشفى نابلس التخصصي	☐ مستشفى ثابت ثابت الحكومي	☐ مستشفى الاسراء الطبي
	☐ مستشفى جنين الحكومي	☐ مستشفى الرازي	☐ مستشفى الامل
	☐ مستشفى الشفاء الجراحي	☐ مستشفى ابن سينا	☐ مستشفى درويش نزال
	☐ مستشفى طوباس التركي	☐ مستشفى الاتحاد	
عدد سنوات الخبرة في المهنة ككل (بالأرقام فقط)		عدد الشفتات **الليلية** اسبوعيا: _____	
هل يقوم المستشفى بنشاطات للممرضين لتخفيف الضغوط الناتجة عن العمل؟		☐ **نعم**	☐ **لا**
هل يقوم المستشفى بنشاطات لتحسين ثقافة سلامة المرضى في المستشفى؟		☐ **نعم**	☐ **لا**

Appendix B *Hospital Survey on Patient Safety Culture (HSOPSC) Version 2.0*

المركز السعودي لسلامة المرضى
SAUDI PATIENT SAFETY CENTER

AHRQ Agency for Healthcare Research and Quality

القسم الثالث: إستبيان سلامة المرضى في المستشفيات (الإصدار 2.0)

هذا الاستبيان يهدف الى التعرف على آرائكم في القضايا المتعلقة بسلامة المرضى، الخطأ الطبي، والإبلاغ عن الحوادث في المستشفى الذي تعمل فيه ويحتاج منك حوالي 10 إلى 15 دقيقة لتعبئته. إذا كان هناك أي سؤال لا ينطبق عليك أو على المستشفى أو كنت لا تعرف الإجابة، فيرجى تحديد "لا ينطبق أو لا أعلم".

- تُعرَّف "سلامة المرضى" على أنها تجنُّب أو منع وقوع الأذى على المريض أو الأحداث العارضة الناتجة عن تقديم الرعاية الصحية للمريض.
- "حوادث سلامة المرضى" هي أي نوع من الأخطاء / الأحداث المرتبطة بالرعاية الصحية بغض النظر إذا ما تسبب في أذى للمريض أو لم يتسبب.

المسميات الوظيفية

1. **ما هو مسماك الوظيفي بالمستشفى؟**

أختر أحد الإجابات التالية:

التمريض

☐1 تمريض (أخصائي، أخصائي أول، استشاري)
☐2 فني تمريض
☐3 مساعد تمريض
☐4 مدرب تمريض
☐5 قبالة

الأطباء

☐6 طبيب تحت التدريب (امتياز/زمالة/ مقيم متدرب)
☐ 7 طبيب مقيم
☐ 8 طبيب (أخصائي/ أخصائي أول)
☐ 9 طبيب استشاري

الوظائف السريرية الأخرى (أخصائي -فني)

☐ 10 تغذية علاجية، تغذية
☐ 11 صيدلي سريري، صيدلي
☐ 12 علاج طبيعي، علاج وظيفي، أطراف صناعية، نطق وتخاطب
☐ 13 أخصائي نفسي غير طبيب
☐ 14 معالج تنفسي
☐ 15 أخصائي اجتماعي
☐ 16 وظائف تقنيه (مثل: تخطيط القلب، تروية قلبية، تخطيط أعصاب، قسطرة المختبرات الطبية، الأشعة ...)
☐ 17 مكافحة العدوى
☐ 18 مسعف
☐ 19 مساعد صحي

المدراء، المشرفين، قائد الفريق (الفنية-الإكلينيكية)

☐ 20 مدير تنفيذي، مدير عام، قيادي
☐ 21 مشرف، مدير، رئيس قسم، مدير إدارة، مسؤول وردية
☐ 22 الجودة/ سلامة المرضى / المخاطر / المراجعة السريرية/ تحسين الأداء

الخدمات / الكوادر المساندة

☐ 23 كاتب وحدة، سكرتير، موظف استقبال
☐ 24 تجربة المريض/ علاقات المرضى / إدارة الأسرة والحالات

أخرى

☐ 25 أخرى، يرجى التحديد:

6

المركز السعودي لسلامة المرضى
SAUDI PATIENT SAFETY CENTER

AHRQ Agency for Healthcare Research and Quality

الوحدة / منطقة عملك

2. فكّر في "وحدتك" على أنها منطقة العمل أو القسم أو المنطقة السريرية بالمستشفى حيث تقضي فيها معظم وقت عملك. ما هي الوحدة أو القسم الأساسي الذي تعمل به في هذا المستشفى؟

أختر أحد الإجابات التالية:

وحدات متعددة، لا توجد وحدة معينة
☐1 العديد من وحدات المستشفى المختلفة، لا توجد وحدة معينة

الوحدات الباطنية /الجراحية
☐2 قسم باطني / جراحي مشترك
☐3 قسم باطنية
☐4 قسم جراحة

وحدات رعاية المرضى
☐5 أمراض وجراحة القلب والقسطرة (بما في ذلك عناية القلب الحرجة)
☐6 أقسام الطوارئ
☐7 أمراض الجهاز الهضمي
☐8 الأمراض العصبية
☐9 العناية المركزة (جميع تخصصات العناية المركزة للكبار)
☐10 أمراض النساء والولادة
☐11 الأورام وأمراض الدم
☐12 أقسام الأطفال (بما في ذلك العناية المركزة للأطفال، العناية المركزة لحديثي الولادة)
☐13 الطب والتأهيل النفسي والسلوكي
☐14علاج الإدمان
☐15 الأمراض الصدرية
☐16 إعادة التأهيل والعلاج الطبيعي
☐17 المراقبة الطبية عن بعد
☐ 18 الطب الاتصالي
☐ 19 العيادات الخارجية
☐ 20 الغسيل الكلوي
☐ 21 زراعة الأعضاء

الخدمات الجراحية
☐22 التخدير
☐23 المناظير
☐24 العمليات
☐25 جراحة وإجراءات اليوم الواحد

الخدمات السريرية
☐26 المختبر
☐27 خدمات الرعاية الصيدلانية
☐28 الأشعة
☐29 العلاج التنفسي
☐30 الخدمة الاجتماعية /إدارة الأسرة والحالات/تجربة المريض/ علاقات المرضى
☐31 التغذية العلاجية
☐32 النقل الطبي الطارئ
☐33 مكافحة العدوى

الأقسام الإدارية
☐34 الجودة، إدارة المخاطر، سلامة المرضى المراجعة السريرية، تحسين الأداء
☐35 الإدارات الطبية (الفنية-الإكلينيكية)

الخدمات المساندة
☐36 قسم الدخول والتسجيل
☐37 خدمات التغذية
☐38 التعقيم

أخرى
☐39 أخرى، يرجى التحديد:

6

الوحدة / منطقة عملك

2. فكّر في "وحدتك" على أنها منطقة العمل أو القسم أو المنطقة السريرية بالمستشفى حيث تقضي فيها معظم وقت عملك. ما هي الوحدة أو القسم الأساسي الذي تعمل به في هذا المستشفى؟

أختر أحد الإجابات التالية:

وحدات متعددة، لا توجد وحدة معينة

☐1 العديد من وحدات المستشفى المختلفة، لا توجد وحدة معينة

الوحدات الباطنية /الجراحية

☐2 قسم باطني / جراحي مشترك
☐3 قسم باطنية
☐4 قسم جراحة

وحدات رعاية المرضى

☐5 أمراض وجراحة القلب والقسطرة (بما في ذلك عناية القلب الحرجة)
☐6 أقسام الطوارئ
☐7 أمراض الجهاز الهضمي
☐8 الأمراض العصبية
☐9 العناية المركزة (جميع تخصصات العناية المركزة للكبار)
☐10 أمراض النساء والولادة
☐11 الأورام وأمراض الدم
☐12 أقسام الأطفال (بما في ذلك العناية المركزة للأطفال، العناية المركزة لحديثي الولادة)
☐13 الطب والتأهيل النفسي والسلوكي
☐14علاج الإدمان
☐15 الأمراض الصدرية
☐16 إعادة التأهيل والعلاج الطبيعي
☐17 المراقبة الطبية عن بعد
☐ 18 الطب الاتصالي
☐ 19 العيادات الخارجية
☐ 20 الغسيل الكلوي
☐ 21 زراعة الأعضاء

الخدمات الجراحية

☐22 التخدير
☐23 المناظير
☐24 العمليات
☐25 جراحة وإجراءات اليوم الواحد

الخدمات السريرية

☐26 المختبر
☐27 خدمات الرعاية الصيدلانية
☐28 الأشعة
☐29 العلاج التنفسي
☐30 الخدمة الاجتماعية /إدارة الأسرة والحالات/تجربة المريض/ علاقات المرضى
☐31 التغذية العلاجية
☐32 النقل الطبي الطارئ
☐33 مكافحة العدوى

الأقسام الإدارية

☐34 الجودة، إدارة المخاطر، سلامة المرضى المراجعة السريرية، تحسين الأداء
☐35 الإدارات الطبية (الفنية-الإكلينيكية)

الخدمات المساندة

☐36 قسم الدخول والتسجيل
☐37 خدمات التغذية
☐38 التعقيم

أخرى

☐39 أخرى، يرجى التحديد:

القسم (أ): الوحدة / منطقة عملك

ما مدى موافقتك أو عدم موافقتك على العبارات التالية حول وحدتك / منطقة عملك؟

فكّر في موقع عملك / وحدتك	لا أوافق بشدة	لا أوافق	محايد	أوافق	أوافق بشدة	لا ينطبق، لا أعلم
أ1. في هذه الوحدة/القسم، نعمل معًا كفريق فعال	1☐	2☐	3☐	4☐	5☐	9☐
أ 2 .في هذه الوحدة/القسم، لدينا عدد كافٍ من الموظفين يتناسب مع عبء العمل	1☐	2☐	3☐	4☐	5☐	9☐
أ3. يعمل الموظفون في هذه الوحدة/ القسم لساعات أكثر مما يجب وهذا ليس في صالح رعاية المرضى	1☐	2☐	3☐	4☐	5☐	9☐
أ4. في هذه الوحدة/القسم يتم مراجعة إجراءات العمل بانتظام لتحديد الحاجة إلى اجراء تغييرات لتحسين سلامة المرضى	1☐	2☐	3☐	4☐	5☐	9☐
أ5. تعتمد هذه الوحدة/القسم بشكل كبير على القوى العاملة المؤقتة أو المتنقلة أو التي يتم استدعاؤها عند الضرورة	1☐	2☐	3☐	4☐	5☐	9☐
أ6. في هذه الوحدة/القسم يشعر الموظفون بأن الأخطاء التي يرتكبونها تستخدم ضدهم	1☐	2☐	3☐	4☐	5☐	9☐
أ7. عند الإبلاغ عن حدث ما في هذه الوحدة/القسم، يكون هناك شعور بأن الإبلاغ تم تجاه الشخص وليس تجاه المشكلة	1☐	2☐	3☐	4☐	5☐	9☐
أ8. عندما يكون هناك زيادة في ضغط العمل، يتعاون الموظفون في هذه الوحدة / القسم ويساعد بعضهم البعض.	1☐	2☐	3☐	4☐	5☐	9☐
أ9. نعاني من مشكلة التعامل بسلوكيات غير لائقة من العاملين في هذه الوحدة/ القسم	1☐	2☐	3☐	4☐	5☐	9☐
أ10. عندما يرتكب الموظفون أخطاءً، فإن هذه الوحدة / القسم تقوم بالتركيز على التعلّم من هذه الأخطاء بدلاً من إلقاء اللوم عليهم.	1☐	2☐	3☐	4☐	5☐	9☐
أ11. إن وتيرة العمل في هذه الوحدة/القسم متسارعة جداً بحيث تؤثر سلبًا على سلامة المرضى	1☐	2☐	3☐	4☐	5☐	9☐
أ12. في هذه الوحدة/القسم يتم تقييم التغييرات التي تمت بهدف تحسين سلامة المرضى لمعرفة مدى فعاليتها	1☐	2☐	3☐	4☐	5☐	9☐
أ13. في هذه الوحدة/القسم لا يوجد دعم كافي للموظف الذي ساهم في ارتكاب أخطاء تتعلق بسلامة المرضى	1☐	2☐	3☐	4☐	5☐	9☐
أ14. في هذه الوحدة/القسم يتم السماح بتكرار حدوث نفس المشاكل المتعلقة بسلامة المرضى	1☐	2☐	3☐	4☐	5☐	9☐

القسم (ب): الدعم المقدم من المشرف، المدير، قائد الفريق (الفني-الإكلينيكي) لسلامة المرضى

ما مدى موافقتك أو عدم موافقتك على العبارات التالية المتعلقة ب رئيسك/مشرفك المباشر، مديرك أو قائد الفريق؟

	لا أوافق بشدة	لا أوافق	محايد	أوافق	أوافق بشدة	لا ينطبق، لا أعلم
ب 1. مشرفي/مديري / قائد الفريق يأخذ بجدية اقتراحات الموظفين لتحسين سلامة المرضى.	1☐	2☐	3☐	4☐	5☐	9☐
ب 2. عندما تكون هناك زيادة في ضغط العمل يطلب مني مشرفي/ مديري / قائد الفريق أن نعمل بشكل أسرع حتى وإن تطلب ذلك تجاوز / اختصار بعض السياسات/الإجراءات المطلوبة	1☐	2☐	3☐	4☐	5☐	9☐
ب 3. مشرفي/مديري / قائد الفريق يتخذ الإجراءات اللازمة لمعالجة المخاوف/ الملاحظات المتعلقة بسلامة المرضى والتي تم التنويه ولفت الانتباه إليها	1☐	2☐	3☐	4☐	5☐	9☐

8

القسم (ج): التواصل

كم مرة تحدث الأشياء التالية في وحدتك / منطقة عملك؟

فكّر في موقع عملك / وحدتك	أبداً	نادراً	أحياناً	معظم الوقت	دائماً	لا ينطبق، لا أعلم
ج1. يتم إبلاغنا عن الأخطاء التي تحدث في هذه الوحدة/القسم	☐1	☐2	☐3	☐4	☐5	☐9
ج2. عند حدوث أخطاء في هذه الوحدة/القسم فإننا نناقش طرق تفادي حدوثها مرة أخرى	☐1	☐2	☐3	☐4	☐5	☐9
ج3. في هذه الوحدة/القسم يتم إعلامنا بالتغييرات التي وضعت بناءا على تقارير الأحداث	☐1	☐2	☐3	☐4	☐5	☐9
ج4. في هذه الوحدة/القسم يتحدث ويعبر الموظفون في حال رأوا شيئاً قد يؤثر سلباً على رعاية المرضى.	☐1	☐2	☐3	☐4	☐5	☐9
ج5. يتحدث ويعبر الموظفون في هذا الوحدة/القسم عندما يرون شخصا ذو سلطة أعلى يقوم بأفعال غير آمنه للمرضى.	☐1	☐2	☐3	☐4	☐5	☐9
ج6. في هذه الوحدة/القسم عندما يتحدث ويعبر الموظفون عن مخاوفهم/ملاحظاتهم المتعلقة بسلامة المرضى فإن أصحاب السلطة الأعلى يتقبلون ذلك.	☐1	☐2	☐3	☐4	☐5	☐9
ج7. في هذه الوحدة/القسم يخشى الموظفون طرح الأسئلة عندما يبدو أن هناك شيء يتم بشكل غير صحيح	☐1	☐2	☐3	☐4	☐5	☐9

القسم (د): الإبلاغ عن الأحداث المتعلقة بسلامة المرضى

فكّر في موقع عملك / وحدتك	أبداً	نادراً	أحياناً	معظم الوقت	دائماً	لا ينطبق، لا أعلم
د1. عند اكتشاف خطأ وتصحيحه قبل أن يصل إلى المريض، ماهي احتمالية / وتيرة الإبلاغ عن ذلك؟	☐1	☐2	☐3	☐4	☐5	☐9
د2. عند وصول الخطأ الى المريض والذي من الممكن أن يتسبب له بالضرر، ولكنه لم يحدث، ماهي احتمالية / وتيرة الإبلاغ عن ذلك؟	☐1	☐2	☐3	☐4	☐5	☐9

د3. خلال ال 12 شهرًا الماضية، كم عدد البلاغات التي قدمتها والمتعلقة بحوادث سلامة المرضى؟

☐أ. لا يوجد
☐ب. 1 إلى 2
☐ج. 3 إلى 5
☐د. 6 إلى 10
☐هـ. 11 أو أكثر

القسم (هـ): تقييم مستوى سلامة المرضى

1. ما هو تقييمك لسلامة المرضى في القسم / الوحدة التي تعمل بها؟

ضعيف	مقبول	جيد	جديد جداً	ممتاز
▼	▼	▼	▼	▼
☐1	☐2	☐3	☐4	☐5

9

القسم (و): عن المستشفى الذي تعمل به

ما مدى موافقتك أو عدم موافقتك على العبارات التالية المتعلقة بالمستشفى؟

عن المستشفى الذي تعمل به	لا أوافق بشدة	لا أوافق	محايد	أوافق	أوافق بشدة	لا ينطبق، لا أعلم
و1. الاجراءات التي تتخذها إدارة المستشفى تبين أن سلامة المرضى على قمة اولوياتها	☐1	☐2	☐3	☐4	☐5	☐9
و2. ادارة المستشفى توفر الموارد الكافية لتحسين سلامة المرضى	☐1	☐2	☐3	☐4	☐5	☐9
و3. تولي إدارة المستشفى اهتماماً بسلامة المرضى بعد وقوع الأحداث العارضة فقط	☐1	☐2	☐3	☐4	☐5	☐9
و4. عند تحويل المرضى / نقلهم من وحدة الى أخرى، فغالبا ما يتم تجاهل/ فقدان معلومات هامه	☐1	☐2	☐3	☐4	☐5	☐9
و5. أثناء تبديل الورديات / المناوبات، فإنه غالبا ما يتم تجاهل /فقدان معلومات هامه متعلقة برعاية المريض	☐1	☐2	☐3	☐4	☐5	☐9
و6. اثناء تبديل الورديات / المناوبات، هنالك وقت كافي لتبادل كامل المعلومات الأساسية المتعلقة برعاية المريض	☐1	☐2	☐3	☐4	☐5	☐9

القسم (ز): إضافات

1. هل تنصح أفراد عائلتك أو أحبائك بالعلاج في هذا المستشفى؟
☐أ. نعم
☐ب. لا

القسم (ح): معلومات أساسية

1. منذ متى وانت تعمل في هذا المستشفى؟
☐أ. أقل من سنة
☐ب. 1 - 5 سنوات
☐ج. 6 - 10 سنوات
☐د. 11 سنة أو أكثر

2. في هذا المستشفى، منذ متى وأنت تعمل في وحدتك/ قسمك / منطقة عملك الحالية؟
☐أ. أقل من سنة
☐ب. 1 - 5 سنوات
☐ج. 6 - 10 سنوات
☐د. 11 سنة أو أكثر

3. عادةً كم ساعة في الأسبوع تعمل في هذا المستشفى؟
☐أ. أقل من 30 ساعة في الأسبوع
☐ب. 30 - 40 ساعة في الأسبوع
☐ج. أكثر من 40 ساعة بالأسبوع

4. في منصبك الحالي، هل لك تعامل مباشر أو تواصل مع المرضى؟
☐أ. نعم، في العادة لدي تعامل مباشر أو تواصل مع المرضى
☐ب. لا، في العادة ليس لدي تعامل مباشر أو تواصل مع المرضى

10

القسم (ط): الملاحظات والتعليقات

الرجاء عدم التردد في كتابة ملاحظاتك وتعليقاتك عن الكيفية التي تُنجز فيها الأعمال في المستشفى أو التي من الممكن إتباعها ولها تأثير على سلامة المرضى

شكرا لك لإتمامك هذا الاستبيان

Appendix C *SOPS Hospital Survey 2.0 Patient Safety Culture Composite Measures*

Patient safety culture composite measures	Definition: The extent to which…	Number of items
Communication About Error	Staff are informed when errors occur, discuss ways to prevent errors, and are informed when changes are made.	3
Communication Openness	Staff speak up if they see something unsafe and feel comfortable asking questions.	4
Handoffs and Information Exchange	Important patient care information is transferred across hospital units and during shift changes.	3
Hospital Management Support for Patient Safety	Hospital management shows that patient safety is a top priority and provides adequate resources for patient safety.	3
Organizational Learning—Continuous Improvement	Work processes are regularly reviewed, changes are made to keep mistakes from happening again, and changes are evaluated.	3
Reporting Patient Safety Events	Mistakes of the following types are reported: (1) mistakes caught and corrected before reaching the patient and (2) mistakes that could have harmed the patient but did not.	2
Response to Error	Staff are treated fairly when they make mistakes and there is a focus on learning from mistakes and supporting staff involved in errors.	4
Staffing and Work Pace	There are enough staff to handle the workload, staff work appropriate hours and do not feel rushed, and there is appropriate reliance on temporary, float, or PRN staff.	4
Supervisor, Manager, or Clinical Leader Support for Patient Safety	Supervisors, managers, or clinical leaders consider staff suggestions for improving patient safety, do not encourage taking shortcuts, and take action to address patient safety concerns.	3
Teamwork	Staff work together as an effective team, help each other during busy times, and are respectful.	3

Appendix D *Nursing Stress Scale*

3

- **القسم الثاني: مقياس ضغوط التمريض (NNS)**

هو مقياس يبين عدد مرات تعرض الممرضين للضغوطات خلال اداء واجباتهم التمريضية.

في مكان عملك او قسمك، لكل عنصر من العناصر، حدد كم مرة وجدت في وحدتك الحالية أن المواقف كانت ضاغطة. (الرجاء وضع دائرة واحدة حول الخيار المناسب لكل عنصر).

		كم مرة في وحدتك الحالية وجدت الموقف ضاغطا لك؟			
الرقم	**العناصر**	**أبداً**	**أحياناً**	**كثيراً**	**كثيرا جداً**
.1	تعطل كمبيوتر القسم	0	1	2	3
.2	الانتقاد من قبل الطبيب	0	1	2	3
.3	القيام بإجراءات يعتبرها المرضى مؤلمة	0	1	2	3
.4	الشعور بالعجز في حالة المريض الذي لا تتحسن حالته	0	1	2	3
.5	الاختلاف مع مشرف التمريض	0	1	2	3
.6	الاستماع او التحدث الى مريض مشخص بمرض خطير (مثل السرطان) عن كيفية موته	0	1	2	3
.7	قلة الفرص للتحدث بانفتاح مع اشخاص اخرين من اقسام أخرى عن المشاكل في القسم	0	1	2	3
.8	موت المريض	0	1	2	3
.9	الاختلاف مع الطبيب	0	1	2	3
.10	الخوف من ارتكاب خطأ خلال علاج المريض	0	1	2	3
.11	قلة الفرص لمشاركة الخبرات والمشاعر مع الأشخاص من نفس القسم	0	1	2	3
.12	موت مريض طورت معه علاقة ودية	0	1	2	3
.13	عدم وجود الطبيب عند وفاة المريض	0	1	2	3
.14	عدم الرضا فيما يتعلق بعلاج المريض	0	1	2	3
.15	الشعور بعدم الاستعداد الكافي للمساعدة في الحاجات العاطفية لأسرة المريض	0	1	2	3
.16	قلة الفرص للتعبير لأشخاص في نفس القسم عن مشاعري السلبية اتجاه المرضى	0	1	2	3
.17	المعلومات غير كافية من الطبيب للحالة الطبية للمريض	0	1	2	3
.18	كوني أُسأل سؤالا من المريض لا أجد له إجابة مرضية	0	1	2	3
.19	اتخاذ قرار يتعلق بالمريض عند عدم وجود الطبيب	0	1	2	3
.20	الانتقال الى اقسام أخرى بسبب نقص الطاقم	0	1	2	3
.21	ملاحظة معاناة المريض	0	1	2	3

4

.22	صعوبة العمل مع ممرض/ة (او ممرضين) من اقسام أخرى	0	1	2	3
.23	الشعور بعدم الاستعداد الكافي للمساعدة في الحاجات العاطفية للمريض	0	1	2	3
.24	الانتقاد من قبل مشرف التمريض	0	1	2	3
.25	جداول العمل غير المتوقعة	0	1	2	3
.26	وصفات الطبيب التي تبدو غير ملائمة للمريض	0	1	2	3
.27	الكثير من المهام غير التمريضية المطلوبة مثل العمل الكتابي	0	1	2	3
.28	لا يوجد وقت كافي لتقديم دعم معنوي للمريض	0	1	2	3
.29	صعوبة العمل مع ممرض/ة (او ممرضين) في نفس القسم	0	1	2	3
.30	لا يوجد وقت كافي لإنهاء واجباتي التمريضية	0	1	2	3
.31	عدم وجود الطبيب في حالات الطوارئ الطبية	0	1	2	3
.32	عدم معرفة ما يجب اخباره للمريض او اسرته بخصوص حالة المريض وعلاجها	0	1	2	3
.33	عدم التأكد من تشغيل وإدارة بعض الأجهزة الطبية المتخصصة	0	1	2	3
.34	عدم وجود طاقم كاف لتغطية حاجات القسم	0	1	2	3

Appendix E *Semi-Structured Interview Questions*

- What impact does teamwork within your unit have on patient safety?
- What impact does teamwork between units have on patient safety?
- How does the number of workers or workload at your hospital or unit impact patient safety?
- How does your unit or the hospital assist you in learning from your errors or errors made by your colleagues?
- When reporting an error in your institution, are you or the medical staff workers worried about personal repercussions? Please clarify
- How do you believe management's actions (like the nursing director, head nurse, or hospital chief) affect patient safety?
- What comments does your management make after you report an error? What happens when you or your colleague report an incident or mistake?
- What impact does professional communication have on patient safety in your hospital?
- What steps are taken in your hospital when a mistake is made? How did the error impact the patient in your unit?
- Can you tell me how much emphasis your hospital's administration places on patient safety? If so, please give an example.
- How is patient safety affected, or has it ever been jeopardized, in your unit by the handoff procedure between shifts, when a patient is transferred to your unit, or at the time of admission?
- Have you ever been under tense circumstances at work?
- In your opinion, what factors contribute to job stress among nurses in your hospital?
- Can you describe your experiences as a nurse regarding the stressors you encounter in your job?
- How do you believe job stress affects your ability to provide safe patient care?
- Can you provide specific examples of how job stress has influenced your perception of patient safety culture?
- How do you cope with job stress in your daily work as a nurse?
- Can you describe any personal or organizational strategies that have effectively reduced job stress and improved among nurses?
- What ideas or measures did you take to lessen your stress?

Appendix F *University Ethics Committee Approval (IRB)*

Arab American University- Palestine
Deanship of Scientific Research
IRB committee
Tel: 04-241-8888, ext 1196
E-mail: irb.aaup@aaup.edu

الجامعة العربية الامريكية- فلسطين
عمادة البحث العلمي
لجنة أخلاقيات البحث العلمي
تلفون: 04-241-8888 1196 ext
البريد الالكتروني: irb.aaup@aaup.edu

IRB Approval Letter

Study Title: The Relationship between Job Stress and the Perception of Patient Safety Culture Among Hospital Nurses in Palestine

Submitted by: Loai Muawya Nimer Zabin

Date received: 13th May 2023

Date reviewed: 12th June 2023

Date approved: 12th June 2023

Your Study titled "**The Relationship between Job Stress and the Perception of Patient Safety Culture Among Hospital Nurses in Palestine**" With archived number 2023/A/114/N was reviewed by the Arab American University IRB committee and was approved on 12th June 2023

Reham Khalaf-Nazzal, MD, PhD
IRB committee chairman
Arab American University of Palestine

General Conditions:

1. Valid for 8 months from date of approval.
2. It is important to inform the committee with any modification of the approved study protocol.
3. The committee appreciates a copy of the research when accomplished.

لجنة أخلاقيات البحث العلمي في الجامعة العربية الامريكية

IRB at Arab American University

Appendix G *Letter of Facilitating the Research Mission 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:.................

الرقـــم: ٢٠٢٣/١٠٣٤/١٦٢
التــاريخ: ٢٠٢٣/٥/٢٩

الأخ مدير عام الادارة العامة للمستشفيات المحترم،،،

تحية واحتـرام...

<u>الموضــوع: تسهيل مهمة بحث</u>

يرجى التكرم بتسهيل مهمة الطالب: **لـؤي زبـن، برنـامج دكتـوراه التمـريض- الجامعة العربية الامريكية**، لعمل بحث بعنوان:

" The Relationship between Job Stress and the Perception of Patient Safety Culture Among Hospital Nurses in Palestine: Insights from a Large Mixed-Method Study "

حيث سيقوم الطالب بجمع معلومات من خلال عمل مقابلات لتعبئة استبانة، مع العلم أن مشرف الدراسة: د. جمال قدومي.

وذلك في: - **مستشفى الوطني - مستشفى رفيديا** - **مستشفى قلقيلية**

- مستشفى جنين - مستشفى طولكرم - مستشفى طوباس

على ان يتم الالتزام باساليب واخلاقيات البحث العلمي.

على ان يتم تزويد الوزارة بنسخة PDF من نتائج البحث، التعهد بعدم النشر الا بعد الحصول على موافقة وزارة الصحة على النتائج.

مع الاحترام...

د. عبد الله القواسمي

مدير التعليم الصحي والبحث العلمي

نسخة: مشرف الدراسة المحترم/ الجامعة العربية الامريكية

Appendix H *Letter of Facilitating the Research Mission for Private and NGO Hospitals*

Arab American University
Faculty of Graduate Studies

الجامعـــة العربيـــة الأمريكيـــة
كلية الدراسات العليا

2023/حزيران/5

الى من يهمه الأمر

تسهيل مهمة بحثية

تحية طيبة وبعد،

تُهديكم كلية الدراسات العُليا في الجامعة العربية الأمريكية أطيب التحيات، وبالإشارة الى الموضوع أعلاه، تشهد كلية الدراسات العليا في الجامعة أن الطالب **لؤي معاوية نمر زين** والذي يحمل الرقم الجامعي 202012396 هو طالب دكتوراه في برنامج التمريض ويعمل على أطروحة الدكتوراه بعنوان: العلاقة بين ضغوط العمل وإدراك ثقافة سلامة المريض بين ممرضي المستشفيات في فلسطين: رؤى من دراسة كبيرة متعددة الأساليب" تحت إشراف الدكتور جمال قدومي والدكتور ساجد غوادرة.

نأمل من حضرتكم الإيعاز لمن يلزم لمساعدته للحصول على المعلومات التالية للدراسة، علماً أن المعلومات ستستخدم لغاية البحث فقط وسيتم التعامل معها بغاية السرية، وقد أُعطي هذه الرسالة بناءً على طلبه.

وتفضلوا بقبول فائق الاحترام

عميد كلية الدراسات العليا

د. نوار قطب

كلية الدراسات العليا
FACULTY OF GRADUATE STUDIES

Jenin Tel: +970-4-2418888 Ext.:1471,1472 Fax: +970-4-2510810 P.O. Box:240
Ramallah Tel: +970-2-2941999 Fax: +970-2-2941979 Abu Qash - Near Alrehan
E-mail: FGS@aaup.edu ; PGS@aaup.edu Website: www.aaup.edu

Appendix I *Permission to use the Arabic Version of HSOPSC 2.0*

Re: HSOPSC Arabic version 2 CRM:00730232
1 message

Safety Culture Surveys <SafetyCultureSurveys@westat.com> Fri, Jun 10, 2022 at 9:02 PM
To: "loai.zabin@najah.edu" <loai.zabin@najah.edu>
Cc: "Howard.Holland@ahrq.hhs.gov" <howard.holland@ahrq.hhs.gov>

Dear Loai Zabin,

Thank you for the information about your use of the Surveys on Patient Safety Culture™ (SOPS®). Westat, the AHRQ contractor for the Surveys on Patient Safety Culture program (SafetyCultureSurveys@westat.com) are authorized to respond on behalf of the Agency for Healthcare Research and Quality (AHRQ) by Mr. Howard Holland, Director, AHRQ's Office of Communications. We handle the majority of permissions for these tools and their related documents in English, and notify AHRQ of requests for permission to translate these documents.

Based on the description you provided of your project, AHRQ grants you permission to use the Hospital Survey 2.0 using Anas Amr's Arabic translation. We understand that this research will be carried out at An-najah National University Hospital in Palestine. AHRQ requests that you note on the survey forms that the form is "reprinted/translated with permission from the Agency for Healthcare Research and Quality (an Agency of the United States Department of Health and Human Services); Rockville, Maryland USA." Additionally, all reports, professional publications, graduate theses, or Web site postings should properly credit AHRQ using the following citation:

Surveys on Patient Safety Culture™. Agency for Healthcare Research and Quality, Rockville, MD USA.
https://www.ahrq.gov/sops/index.html

The AHRQ SOPS survey and related materials may be found on the AHRQ website at: https://www.ahrq.gov/sops/index.html. For technical questions, please contact us. We can also put you in touch with other non-U.S. users of the survey (go to https://www.ahrq.gov/sops/international/index.html for more information).

If you have questions about permissions issues, please feel free to contact Mr. Holland (copied on this email).

Sincerely,
Aisha Marsono

****

AHRQ Surveys on Patient Safety Culture™ (SOPS®)Technical Assistance
Westat | 1700 Research Blvd | Rockville, MD 20850
phone: 1-888-324-9749 | fax: 1-888-852-8277 | email: SafetyCultureSurveys@westat.com

Sign up for SOPS updates, news, and events and select "Surveys on Patient Safety Culture" under Quality and Safety topics: https://public.govdelivery.com/accounts/USAHRQ/subscriber/new

How are we doing? To help us assess the quality of technical assistance we provide, we are asking that you please answer a brief questionnaire about the technical assistance you received from your recent inquiry about SOPS. Your participation in this questionnaire is voluntary. Your responses will be confidential and only reported in the aggregate. The questionnaire should take no more than a minute or two.

Thank you for your feedback! Click here to take the questionnaire: https://www.research.net/r/XZYYX3F

Appendix J *Permission to use the Arabic Version of the NSS*

Loai Zabin <loai.zabin@najah.edu>

Re: Request permission for using NSS questionnaire from Dr. Bashir thesis

1 message

Chris Todd <Chris.Todd@manchester.ac.uk> Mon, Sep 19, 2022 at 10:25 AM
To: Loai Zabin <loai.zabin@najah.edu>

Dear Loai Zabin

I was Bashir Alhajjar's PhD supervisor.

I am happy to give permission for you to use Bashir's translation of NSS on the simple condition that you acknowledge Bashir's work in translating the instrument in your thesis.

Bashir and his brother were together in a UN marked car in Gaza when they were murdered by an Israeli air strike.

With best wishes for your research

Chris Todd

Sent from my iPhone

Appendix K *Informed Consent Form*

Arab American University
Scientific Research Deanship
Ethical Review Committee

الجامعـــة العربيـــة الأمريكيـــة
عمادة البحث العلمي
لجنة اخلاقيات البحث العلمي

نموذج موافقة على المشاركة في دراسة بحثية

AAUP-IRB Code No.: 2023/A/114/N
AAUP-IRB Date: 12/6/2023

عزيزي الممرض/الممرضة

يسرنا دعوتك للمشاركة في الإجابة عن أسئلة الاستبيان المرفق والذي هو جزء من بحث بعنوان " العلاقة بين ضغوط العمل ومفهوم ثقافة سلامة المرضى لدى ممرضي المستشفيات في فلسطين "
حيث يهدف هذا الاستبيان لقياس مستوى العلاقة بين ضغوط العمل و ثقافة سلامة المريض لدى الممرضين العاملين في مستشفيات شمال الضفة الغربية في فلسطين والعوامل المرتبطة التي من الممكن ان تؤثر على هذه العلاقة.
حيث ستنتج توصيات للعاملين والإدارة في المستشفيات لتحسين ثقافة سلامة المرضى وتحسين العوامل التي من الممكن ان تؤثر سلبا على هذه الثقافة بالإضافة لتحسين وتقليل ضغوطات العمل التي من الممكن ان تؤثر على ثقافة سلامة المرضى.

هذه الدراسة هي جزء من متطلبات تخصص الدكتوراة في التمريض في الجامعة العربية الامريكية.

حيث تم شرح الدراسة والهدف منها والنتائج المرجوة والاجابة على استفساراتك. فانه بموافقتك على هذه الورقة يعتبر موافقة على مشاركتك في الاستبيان.
علما ان المشاركة طوعية وانه يحق لك عدم الموافقة على المشاركة او الانسحاب من المشاركة في أي وقت ترغب به دون ابداء أسباب ودون أدني مسؤولية. كما ان مشاركتك في الاستبيان ليس لها أي ضرر يذكر، علما انه لن يتم تسجيل أي بيانات شخصية وان أي معلومات ستدلي بها في هذا الاستبيان ستستخدم لغرض الدراسة فقط ولا يوجد اطلاع لاحد عليها غير الباحث.

وعليه ارجو البدء بالإجابة على الأسئلة المرفقة في حال موافقتك على المشاركة من رغبتك الحرة.

في حال وجود أي استفسار اخر لديك يمكنك التواصل مع الباحث:
لؤي الزبن
0592444303
l.zabin@student.aaup.edu

Appendix L *Participants' Information Sheet*

Arab American University
Scientific Research Deanship
Ethical Review Committee

الجامعـــة العربيـــة الأمريكيـــة
عمادة البحث العلمي
لجنة اخلاقيات البحث العلمي

PARTICIPANT INFORMATION SHEET

AAUP-IRB Code No.: 2023/A/114/N
AAUP-IRB Date: 12/6/2023

Study Title: The Relationship between Job Stress and the Perception of Patient Safety Culture Among Hospital Nurses in Palestine: Insights from a Large Mixed-Method Study

We want to invite you to participate in a research study. Before you decide whether to participate, you need to understand why the research is being done and what it would involve. Please read the following information carefully, and if you wish, talk to others about the study.

Ask us if anything is unclear or if you would like more information. Then, take your time to decide whether or not you wish to take part.

1. **What is the purpose of this study?**

The current study aims to examine the relationship between job stress and patient safety culture among nurses working in Palestinian hospitals and to identify demographic factors that affect the relationship between job stress and patient safety culture.

2. **Why is this study important?**

Measuring work stressors and their effect on patient safety culture can help healthcare institutions identify the most common job stressors that may affect the staff and the safety of their patients and develop strategies to minimize these stressors. It also helps to measure staff perceptions of safety culture to improve areas of weakness as seen by the staff.

3. **What is the procedure that is being tested?** *(If applicable)*

Not Applicable

4. **Why have I been invited to participate in this study?**

You have been invited because you are an important part of the healthcare system in Palestine. Your opinion will add to this country, which could improve the health services provided to the patients.

5. **Who should not participate in the study?**

All licensed nurses working in North West Bank Palestinian hospitals can participate in this study.

6. Can I refuse to take part in the study?

Of course, you have the complete choice to refuse to participate in this study or withdraw at any time if you participate.

7. What will happen to me if I take part?

You must complete the survey that will be sent to you via your work email. It will take 15 to 20 minutes to complete.

8. How long will I be involved in this study?

It will take only 15 to 20 minutes of your time to complete the survey.

9. What are the possible disadvantages and risks?

There are no disadvantages or risks involved in this study.

10. What are the possible benefits to me?

Your participation will benefit healthcare organizations and the country's health system. However, no financial benefit will be given to any participants.

11. Who will have access to my medical records and research data?

Your research data will be secured on an external hard drive with the researcher only; no one will have access to this data. Moreover, no information that could identify you or any other participant will be collected.

12. Will my records/data be kept confidential?

Your data from this survey will be confidential. It will be kept for this study purpose only with the researcher and in a safe place, not accessible to anyone.

13. What will happen to any samples I give? *(If applicable)*

Not Applicable

14. What will happen if I do not want to continue the study?

Nothing will happen; you have the right to withdraw at any time.

15. What will happen to the results of the research study?

The research results will be shared with the hospital administrations to improve what is needed and published to benefit others.

16. Will I receive compensation for participating in this study?

No compensation will be provided to any participant.

17. Who should I contact if I have additional questions/problems during the study?

Researcher contact details:

Loai M. Zabin, Email: / Mobile:

18. Who should I contact if I am unhappy with how the study is being conducted?

Ethical Review Committee
Deanship of Scientific Research
Arab American University-Palestine (AAUP)
Email: src@aaup.edu

Appendix M *Composite Item Responses for PSC*

Item #	Composite	Positive Score (Strongly agree/Agree) (%)	Neither (%)	Negative score (strongly disagree/disagree) (%)	Average % of positive response
Composite 1: Teamwork					**63.1**
A1	In this unit, we work together as an effective team	79.0	11.3	9.6	79.0
A8	During busy times, staff in this unit help each other.	69.1	17.7	13.1	69.1
A9	There is a problem with disrespectful behavior by those working in this unit. (Negatively worded)	36.4	22.4	41.2	41.2
Composite 2: Staffing and Work Pace					**34.8**
A2	In this unit, we have enough staff to handle the workload.	35.9	18.6	45.5	35.9
A3	Staff in this unit work longer hours than is best for patient care. (Negatively worded)	50.6	20.3	29.1	29.1
A5	This unit relies too much on temporary, float, or PRN staff. (Negatively worded)	36.5	23.2	40.2	40.2
A11	The work pace in this unit is so rushed that it negatively affects patient safety. (Negatively worded)	38.0	28.0	34.0	34.0
Composite 3: Organizational Learning—Continuous Improvement					**55.8**
A4	This unit regularly reviews work processes to determine if changes are needed to improve patient safety.	57.5	23.1	19.4	57.5
A12	In this unit, changes to improve patient safety are evaluated to see how well they worked	58.0	24.3	17.7	58.0
A14	This unit lets the same patient safety problems keep happening. (Negatively worded)	30.1	18.2	51.7	51.7
Composite 4: Response to Error					**30.9**
A6	In this unit, staff feel like their mistakes are held against them. (Negatively worded)	51.7	23.2	25.1	25.1
A7	When an event is reported in this unit, it feels like the person is being written up, not the problem. (Negatively worded)	52.8	23.0	24.1	24.1
A10	When staff make errors, this unit focuses on learning rather than blaming individuals.	47.0	22.7	30.3	47.0

A13	In this unit, there is a lack of support for staff involved in patient safety errors. (Negatively worded)	41.7	31.1	27.1	27.1
Composite 5: Supervisor, Manager, or Clinical Leader Support for Patient Safety					**50.8**
B1	My supervisor, manager, or clinical leader seriously considers staff suggestions for improving patient safety.	56.7	22.7	20.7	56.7
B2	My supervisor, manager, or clinical leader wants us to work faster during busy times, even if it means taking shortcuts. (Negatively worded)	45.5	21.5	33.1	33.1
B3	My supervisor, manager, or clinical leader takes action to address patient safety concerns that are brought to their attention.	62.6	21.8	15.6	62.6
Composite 6: Communication About Error					**52.3**
C1	We are informed about errors that happen in this unit.	50.1	30.0	19.8	50.1
C2	When errors happen in this unit, we discuss ways to prevent them from happening again.	52.4	27.8	19.8	52.4
C3	In this unit, we are informed about changes that are made based on event reports.	54.4	27.2	18.4	54.4
Composite 7: Communication Openness					**45.0**
C4	In this unit, staff speak up if they see something that may negatively affect patient care.	52.8	30.4	16.8	52.8
C5	When staff in this unit see someone with more authority doing something unsafe for patients, they speak up.	47.7	30.6	21.7	47.7
C6	When staff in this unit speak up, those with more authority are open to their patient safety concerns.	39.0	33.7	27.3	39.0
C7	In this unit, staff are afraid to ask questions when something does not seem right. (Negatively worded)	27.4	32.3	40.3	40.3
Composite 8: Reporting Patient Safety Events					**43.7**
D1	When a mistake is caught and corrected before reaching the patient, how often is this reported?	37.9	29.3	32.8	37.9
D2	When a mistake reaches the patient and could have harmed the patient, but did not, how often is this reported?	49.6	26.9	23.5	49.6
Composite 9: Hospital Management Support for Patient Safety					**46.8**
F1	The actions of hospital management show that patient safety is a top priority.	62.3	20.8	16.9	62.3
F2	Hospital management provides adequate resources to improve patient safety.	55.8	21.0	23.2	55.8
F3	Hospital management seems interested in patient safety only after an adverse event happens. (Negatively worded)	54.3	23.4	22.3	22.3
Composite 10: Handoffs and Information Exchange					**47.1**
F4	When transferring patients from one unit to another, important information is often left out. (Negatively worded)	35.1	24.6	40.3	40.3
F5	During shift changes, important patient care information is often left out. (Negatively worded)	33.4	26.3	40.3	40.3
F6	During shift changes, there is adequate time to exchange all key patient care information.	60.8	17.6	21.6	60.8
Overall perception					**47.0%**

Appendix N *NSS Subscales and Item Score*

Item #	Items/Factors	0 (never)	1 (occasionally)	2 (frequently)	3 (very frequently)	Mean (AM)	SD
Factor I: Death and dying						**8.41 (1.20)**	**3.52**
3	Performing procedures that patients experience as painful	32	176	113	34	1.42	0.79
4	Feeling helpless in the case of a patient who fails to improve	54	158	117	26	1.32	0.82
6	Listening or talking to a patient about his/her approaching death	140	127	77	11	0.88	0.85
8	The death of a patient	59	154	109	33	1.33	0.86
12	The death of a patient with whom you developed a close relationship	119	141	68	27	1.01	0.91
13	Physician not being present when a patient dies	139	124	72	20	0.92	0.90
21	Watching a patient suffer	28	159	122	46	1.52	0.82
Factor II: Conflict with physicians						**5.81 (1.16)**	**2.78**
2	Criticism by a physician	53	190	86	26	1.24	0.79
9	Conflict with a physician	55	196	86	18	1.19	0.75
10	Fear of making a mistake in treating a patient	69	191	70	25	1.14	0.81
14	Disagreement concerning the treatment of a patient	74	193	67	21	1.10	0.79
19	Making a decision concerning a patient when the physician is unavailable	80	174	71	30	1.14	0.86
Factor III: Inadequate preparation						**3.19 (1.06)**	**1.72**
15	Feeling inadequately prepared to help with the emotional needs of a patient's family	81	190	66	18	1.06	0.78
18	Being asked a question by a patient for which I do not have a satisfactory answer	72	187	83	13	1.10	0.76
23	Feeling inadequately prepared to help with the emotional needs of a patient	75	203	68	9	1.03	0.71
Factor IV: Lack of support						**3.27 (1.09)**	**1.80**

7	Lack of an opportunity to talk openly with other unit personnel about problems in the unit	84	159	83	29	1.16	0.88
11	Lack of an opportunity to share experiences and feelings with other personnel on the unit	76	182	80	17	1.11	0.79
16	Lack of an opportunity to express to other personnel on the unit my negative feelings toward patients	92	178	74	11	1.01	0.77
Factor V: Conflict with other nurses						**5.36 (1.07)**	**2.72**
5	Conflict with a supervisor	99	164	72	20	1.04	0.84
20	Floating to other units that are short-staffed	78	137	84	56	1.33	0.99
22	Difficulty in working with a particular nurse (or nurses) outside the unit	81	179	82	13	1.08	0.78
24	Criticism by a supervisor	106	174	66	9	0.94	0.76
29	Difficulty in working with a particular nurse (or nurses) on the unit	101	177	61	16	0.98	0.79
Factor VI: Workload						**8.55 (1.42)**	**3.54**
1	Breakdown of computer	36	157	94	68	1.55	0.91
25	Unpredictable staffing and scheduling	58	144	117	36	1.37	0.87
27	Too many non-nursing tasks are required, such as clerical work	54	138	103	60	1.48	0.95
28	Not enough time to provide emotional support to a patient	56	151	94	54	1.41	0.93
30	Not enough time to complete all of my nursing tasks	66	170	99	20	1.21	0.81
34	Not enough staff to adequately cover the unit	42	146	97	70	1.55	0.94
Factor VII: Uncertainty concerning treatment						**5.14 (1.02)**	**3.03**
17	Inadequate information from a physician regarding the medical condition of a patient	84	174	78	19	1.09	0.81
26	A physician ordering what appears to be inappropriate treatment for a patient	102	178	60	15	0.97	0.79
31	A physician not being present in a medical emergency	104	156	64	31	1.06	0.91
32	Not knowing what a patient or a patient's family ought to be told about the patient's condition and its treatment	83	184	73	15	1.06	0.78
33	Uncertainty regarding the operation and functioning of specialized equipment	99	181	62	13	0.97	0.78
	The overall mean score of NSS					**39.76**	**15.16**

AM: Arithmetic Mean, SD: Standard Deviation

الملخص

المقدمة: تعد سلامة المرضى مصدر قلق عالمي، حيث يتم الإبلاغ عن معدلات عالية من الأخطاء الطبية سنويًا. إن فهم العلاقة بين ضغوط العمل لدى الممرضين والممرضات وثقافة سلامة المرضى أمر بالغ الأهمية. على الرغم من دورهم المحوري في مجال الرعاية الصحية، يواجه الممرضون والممرضات ضغوطًا بسبب الأدوار الوظيفية الشاقة ونظام الرعاية الصحية الصعب في فلسطين. وقد تناولت هذه الدراسة مدى تأثير ضغوط العمل على ثقافة سلامة المرضى في المستشفيات الفلسطينية، بهدف تحسين نتائج الرعاية الصحية ودعم العاملين في مجال الرعاية الصحية.

المنهجية: استخدمت الدراسة منهجاً تفسيرياً متسلسلاً مختلطاً ومتتابعاً. تم جمع البيانات في الفترة من يونيو إلى سبتمبر 2023. واستخدمت الدراسة استبيانات تعبئ ذاتياً، بما في ذلك استبيان ثقافة سلامة المرضى في المستشفيات, ومقياس ضغط العمل التمريضي، والتي أجريت على 355 ممرضة وممرضاً يعملون في 16 مستشفى في شمال الضفة الغربية في فلسطين. بالإضافة إلى ذلك، أُجريت مقابلات شبه منظمة مع ممرضين وممرضات من ذوي الخبرة. تم تحليل البيانات الكمية التي تم جمعها باستخدام التحليل الوصفي والاستدلالي، في حين تم تحليل البيانات النوعية من المقابلات باستخدام التحليل الموضوعي.

النتائج: كان التصور العام للممرضين والممرضات ثقافة سلامة المريض 47%. وكانت أكثر المجالات التي تم إدراكها إيجابية هي "العمل الجماعي" و"التعلم التنظيمي - التحسين المستمر" و"التواصل بشأن الأخطاء". علاوة على ذلك، كانت أكثر مصادر ضغط العمل شيوعًا التي أدركها الممرضون والممرضات هي "عبء العمل" والتعامل مع "الموت والاحتضار". كشفت الاختبارات الإحصائية عن ستة عوامل مرتبطة بشكل كبير بتصورات ضغط العمل. من بين هذه العوامل، برز الدخل، ونوع المستشفى، وأنشطة تحسين الإجهاد الوظيفي، وتقييمات سلامة المرضى في مناطق العمل، والنوبات الليلية الأسبوعية كعوامل تنبؤ بتصورات ثقافة سلامة المريض.

واظهرت التحاليل الاحصائية ايضا تسعة عوامل مرتبطة بشكل كبير بالضغط الوظيفي. من بين هذه العوامل، برز الجنس والمستوى التعليمي والمشاركة في أنشطة تخفيف ضغط العمل والمشاركة في أنشطة تحسين مستوى ثقافة سلامة المريض وتقييمات سلامة المريض كعوامل تنبئ بضغط العمل. علاوة على ذلك اظهرت نتائج الجزء النوعي من الدراسة خمسة محاور تتعلق بثقافة سلامة المرضى

وثلاثة محاول تتعلق بضغوطات العمل. كما أكدت الدراسة على وجود ارتباطات سلبية بين ضغوط العمل وثقافة سلامة المرضى.

الخلاصة: حددت الدراسة الحاجة إلى سياسات وتدخلات مصممة خصيصًا لمعالجة الضغوطات الخاصة بالممرضين والممرضات ثقافة سلامة المرضى في المستشفيات. علاوة على ذلك، سلطت الدراسة الضوء على التحديات الفريدة التي يواجهها الممرضون والممرضات في فلسطين، مثل محدودية الموارد، ومخاوف البطالة، ونقص الممرضين، ومشاكل النقل، مما أدى إلى تفاقم مستويات ضغط العمل واحتمال تعريض سلامة المرضى للخطر. إن فهم هذه العوامل السياقية أمر بالغ الأهمية لتطوير التدخلات المستهدفة وأنظمة الدعم التي تعطي الأولوية للرفاهية الشاملة للممرضات والممرضين وجودة تقديم الرعاية للمرضى.

التوصيات: توصي الدراسة بالاستثمار في برامج التدريب التي تزود الممرضين والممرضات بالمهارات والمعرفة اللازمة المتعلقة بسلامة المرضى، وعقد ورش عمل واجتماعات لزيادة الوعي بسلامة المرضى والإبلاغ عن الأخطاء، وتقييم سلامة المرضى بانتظام داخل المستشفيات وتحديد مجالات التحسين؛ وإنشاء نظام قوي للإبلاغ عن الأخطاء وتقييمها وتقديم الملاحظات بشأنها؛ وتنفيذ استراتيجية "الثقافة العادلة"؛ وإدراج سلامة المرضى في مناهج تعليم التمريض في الجامعات.