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The Impact of Implementing International Safety Goals on Patient Safety Culture among Palestinian Healthcare Professionals

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Thesis approval

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Declaration

I hereby declare that this master's degree thesis entitled "The Impact of Implementing International Safety Goals on Patient Safety Culture among Palestinian Healthcare Professionals" was carried out by me for the master's degree in Quality Management and has been generated by me as a result of my own original research. No part of this thesis was previously submitted for other degrees or qualifications at this or any other university. Moreover, I have not used sources or means without declaring them in the text, and if so, they have been referenced.

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Abstract

Background: Medical care begins with risk and safety management. Good medicine prioritizes safety. IPSGs aim for affordable, high-quality healthcare.

Study objectives: This study aimed to investigate the impact of the application of the international patient safety goals IPSGs (1-identify patients correctly, 2-improve effective communication, 3-improve the safety of high-alert medications, 4-ensure safe surgery, 5-reduce the risk of health care-associated infections, and 6-reduce the risk of patient harm resulting from falls) to improve patient safety culture in Palestine. In this regard, this study is considered one of the few that have investigated this relationship and the only study in Palestine to the extent of the researcher's knowledge.

Methods: The quantitative approach was adopted in this study; the study instrument was a structured questionnaire developed to collect the primary data; the study population was all medical staff of the hospitals operating in the West Bank, including 10 governmental and private hospitals distributed all over geographical areas of the West Bank. A convenience sampling mechanism was used, and a total of 337 individuals were chosen to represent the study sample.

Results: The study reached several results, the most important of which was that the degree of implementation of the IPSGs in the Palestinian hospitals was high. The goals in order of implementation degree were "Identify patients correctly, reduce healthcare-associated infection, correct procedures and surgery, reduce the harm from falls, effective communication, and safety of the high alert medication," respectively.

Furthermore, the IPSGs were implemented the most in "Al-Najjah Hospital" and the least in "Al-Isra Hospital". Additionally, the degree of PSC in Palestinian hospitals is high, highest in "Al-Najjah Hospital" and lowest in "Al-Isra Hospital". The study also found that there is a significant positive effect between the implementation of the IPSGs (1–5), and PSC in Palestinian hospitals. The study

found that goal six had no significant impact on patient safety culture, while the study recommends that more Palestinian hospitals should work towards obtaining JCI accreditation and adhere more professionally to the IPSG's standards, as well as ensure that the techniques employed by different healthcare facilities to identify patients are consistent.

Conclusion: To conclude, the study discussed the impact of IPSGs on patient safety culture in Palestinian hospitals, as perceived by healthcare professionals. The study found a significant positive effect of IPSGs on PSC in Palestinian hospitals, in line with previous research conducted in the field. However, the study also found that despite the high application of goal number 6 in Palestinian hospitals, it did not impact PSC in the eyes of healthcare professionals, possibly due to cultural factors related to the role of family members in patient care.

Keywords: IPSGs, Patient Safety Culture, JCI accreditation, Health Care Institutions.

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List of Abbreviations

JCI	The Joint Commission International
IPSGs	The international patient safety goals
CQI	Continuous Quality Improvement
WHO	The World Health Organization
NPSGs	National Patient Safety Goals
HAMs	High alert medications
EML	Essential Medicines List
HCAIs	Healthcare-associated infections
HSOPSC	Hospital survey on patient safety culture
QuIC	Quality Interagency Coordination Task Force
PSC	Patient Safety Culture
AVE	Average Variance Extracted
R^2	The R-squared value
f^2	Assessment of Effect Size
Q^2	Predictive Relevance.
SEM	Structural Equation Models
CR	Composite Reliability
GoF	Goodness of Fit of the Model

Chapter One

Introduction

Overview

This chapter includes a brief background of the study, followed by discussions of the problem statement, aims, and objectives, the significance of the study, and hypothesis suggestions.

1.1 Background

Patient safety has become a crucial healthcare concern as medical organizations strive to prevent and mitigate the negative health impacts of medical errors. The implementation of international patient safety goals (IPSGs) is imperative for improving the patient safety landscape, thereby fostering global competition and augmenting the competitive edge of healthcare institutions at both national and international levels. The increased utilization of novel technologies and therapies in healthcare has led to a rise in efficiency and complexity, as noted by Abousallah (2018).

The Institute of Medicine (IOM) has defined patient safety as the non-occurrence of inadvertent injuries resulting from medical treatment or care. The issue of medical errors has garnered significant attention since the publication of the Institute of Medicine's 2000 report titled "To Err is Human: Building a Safer Health System" (Donaldson, Corrigan, & Kohn, 2000), as noted by King (2009). According to Donaldson's (2008) report, the primary objective is to mitigate fatalities and injuries resulting from medical errors, thereby necessitating the implementation of comprehensive systemic enhancements. As per the World Health Organization (WHO), patient safety pertains to the prevention of errors and unfavorable outcomes for patients during the course of their medical care. According to WHO (2019), it is imperative to incorporate the lessons learned from errors and adverse events into one's practice. The concept of patient safety encompasses a range of endeavors aimed at establishing organizational cultures, protocols, techniques, conduct, technologies, and settings within the healthcare sector that consistently and durably mitigate risks, reduce the probability of preventable

harm, minimize the likelihood of errors, and mitigate the consequences of errors in the event that they do occur (Zabin, Zaitoun, & Abdullah, 2022).

Each stage of the process of providing care entails certain inherent risks. According to the World Health Organization (2019), the promotion of enduring and significant advancements in healthcare safety necessitates the presence of unambiguous policies, robust leadership within the organization, employment of data to facilitate safety enhancements, the involvement of proficient healthcare personnel, and a comprehensive process for engaging patients and their families.

The endeavor to mitigate patient harm resulting from care delivery procedures is commonly known as "patient safety cultures", which are predicated on a shared set of beliefs and values (Nordin, 2015). As per the findings of Sammer, Lykens, Singh, Mains, & Lackan (2010), patient safety culture is distinguished by an acknowledgement of the hazardous nature of the setting and a dedication to allocating resources to the frontline personnel. It is marked by a cooperative attitude among the staff, which is characterized by cordial, receptive, and adaptable relationships. Additionally, all staff members are willing to communicate with their patients, and there is a belief that errors can be rectified.

Furthermore, empirical evidence supports the notion that practice is an effective approach. Errors are regarded as system malfunctions rather than personal shortcomings, individuals are held responsible for their conduct, and the requirements of patients are prioritized (Sammer et al., 2010). The initial phase in implementing a patient safety strategy at the hospital level involves adherence to the identified International Patient Safety Goals (IPSGs). According to the World Health Organization (2016), optimal functioning of the various components of the healthcare system can lead to a heightened emphasis on ensuring patient safety.

The maintenance of a secure healthcare system necessitates the presence of leadership and responsibility, which must be harmonized with the demands of organizational and governance imperatives. Patient safety is a collective responsibility of all stakeholders within the healthcare

system. In cases where leadership is ineffective, healthcare practitioners may experience a decline in their level of diligence and motivation (Dawood & Jassim, 2021).

Ahmadi (2010) asserts that effective leadership is a crucial factor in the successful implementation of patient safety measures. Responding appropriately to errors is a crucial factor in establishing a safety culture within healthcare organizations. Establishing a culture of open communication and ongoing development is imperative for healthcare organizations to overcome blame-aversion.

1.2 The Research Problem

The association between IPSGS and hospital patient safety cultures (PSC) has not been extensively studied., despite the fact that several studies have established numerous connections between patient safety and global public health challenges. These variables were selected as the focus of the investigation because of the significance of their interactions. The IOM states that shifting the culture from one that holds people accountable for mistakes to one that views mistakes as chances to improve the system and prevent harm is the biggest barrier to creating a safer health system (Donaldson, 2008).

The association between patient safety culture and unfavorable incidents in Palestinian hospitals is examined in a paper by Najjar et al. (2015). The study is important because adverse events can hurt patients and have a negative impact on their health outcomes. Patient safety is a crucial problem in healthcare. In order to reduce negative incidents and enhance patient outcomes, the paper investigates the function of patient safety culture.

Additionally, Hamdan and Saleem (2018) provide valuable insights into the effect of quality and patient safety programs on a patient safety culture in Palestinian governmental hospitals. The study highlights the importance of investing in quality and patient safety initiatives to promote patient safety culture in healthcare organizations. The findings of this study can be applied to healthcare organizations worldwide to improve patient safety and promote a culture of safety in healthcare.

In his study, James (2013) argued that if the epidemic of patient injury in hospitals is to be

curbed, it needs to be given more attention by fully including patients and their supporters. According to Aboul Fotouh, Ismail, Ez Elarab, and Wassif (2012), there are still a lot of patient safety-related areas that need to be regularly examined and monitored in order to create a secure environment for both patients and medical professionals. Furthermore, according to Al-Mandhari et al. (2014), creating a culture of safety is a key component of many initiatives to enhance patient safety and care quality in acute care settings.

To meet the hospital's patient safety goals, Abousallah (2018) proposed in her study to analyze the relationship between international goals and patient safety to take into account their interdependence. The implementation of IPSGs has a significant effect on majority of hospital services across all departments and has a strong positive effect on patient safety. Hospitals are placed in a fiercely competitive environment, requiring prompt and rapid improvement of health care services.

The Palestinian Ministry of Health has worked hard to implement strategies that ensure the safety and wellbeing of patients in the health system; it has a strict policy for quality assurance and standards and a detailed guideline for patient care (Morrar et al., 2021). This study will investigate the impact of the application of the IPSGs to improve patient safety culture in Palestine.

1.3 Research questions

This study will answer the following main research question:

What is the impact of the application of the IPSGs on improving PSC in Palestine?

The specific research questions for our research are:

1. What is the current state of practice in terms of international safety goals?
2. What is the current state of PSC in Palestinian hospitals?
3. How does identifying patients correctly contribute to the patient safety culture?
4. Do effective communications improve the patient safety culture?
5. How is the PSC affected by improving the safety of high-alert medications?
6. How does ensuring safe surgery affect the patient safety culture?

7. Does the reduction of the risk of health care–associated infections improve the patient safety culture?
8. Does the reduction of the risk of patient harm resulting from falls improve the patient safety culture?

1.4 Aims and Objectives of the Research

The main purpose of this study is to investigate the impact of the application of the IPSGs (identify patients correctly, improve effective communication, improve the safety of high-alert medications, ensure safe surgery, reduce the risk of health care-associated infections, and reduce the risk of patient harm resulting from falls) on patient safety culture in Palestine. The study aims to fulfill the following specific objectives as well:

1. Identify the extent to which private and governmental hospitals have a patient safety culture.
2. Find out if correct patient identification contributes to the patient safety culture.
3. Explore how effective communications improve the patient safety culture.
4. Examine how PSC is affected by improving the safety of high-alert medications.
5. Determine how ensuring safe surgery affects the patient safety culture.
6. Determine if the reduction of the risk of health care-associated infections improves the patient safety culture.
7. Examine how the reduction of the risk of patient harm resulting from falls improves the patient safety culture.

1.5 Significance of the Research

This study centers on the patient safety cultures of private and public hospitals in the West Bank of Palestine, with a particular emphasis on the factors that impact hospital management. The envisaged utility of this study is to provide a valuable resource for researchers who are striving to advance the management disciplines. Given that the majority of hospitals are mandated to comply

with global patient safety benchmarks, the findings of this study could be broadly applicable to a diverse array of healthcare facilities.

Solomon et al. (2014) posit that the inadequacy of healthcare services necessitated the establishment of a global objective. Morello et al. (2013) assert that the measurement and augmentation of Patient Safety Culture (PSC) is of paramount importance in the improvement of patient safety within hospital settings.

Healthcare organizations can evaluate their safety cultures through assessments to identify the areas of strength and weakness, and to detect any patient safety concerns. Furthermore, it is possible for them to assess their outcomes in comparison to those of other medical facilities (El-Jardali et al., 2010).

Najjar et al. (2015) underscore the necessity for healthcare institutions to adopt measures aimed at enhancing the culture of patient safety. The authors propose that healthcare establishments evaluate their PSC, pinpoint domains that require enhancement, and devise tactics to tackle these domains. Potential strategies could encompass staff training and education, the establishment of an adverse event reporting system, and the cultivation of a culture that prioritizes transparency and open communication.

The scarcity of research conducted in Palestine and the surrounding region regarding the correlation between the implementation of international goals and its impact on PSC s in accredited private hospitals highlights the significance of this study's emphasis on this subject matter.

Hamdan and Saleem's (2018) research emphasizes the significance of quality and patient safety initiatives in augmenting the culture of patient safety within healthcare establishments. Quality and patient safety initiatives encompass a range of interventions, protocols, and guidelines that aim to enhance the quality of healthcare services and safeguard patients from harm within healthcare institutions. Potential measures to be taken could encompass the provision of educational

opportunities and training for personnel, the creation of protocols and guidelines to ensure patient safety, and the establishment of mechanisms for reporting and addressing adverse events.

The study's significance is evidenced by the incorporation of both government and private hospitals that achieved and failed to achieve accreditation, with the aim of investigating the impact of implementing global objectives across all hospitals that pursued accreditation. Irrespective of a hospital's accreditation status, the attainment of these objectives is an essential aspect of delivering secure healthcare.

As a result of the discoveries made in this investigation, hospitals have become more proficient in addressing worldwide safety objectives, deriving advantages from the implementation of patient safety standards, and competently administering those standards, thereby establishing hospitals that are sustainable and poised for success. The aforementioned findings have the potential to mitigate medical errors and malfeasance, as well as improve the healthcare system holistically.

1.6 Conceptual framework

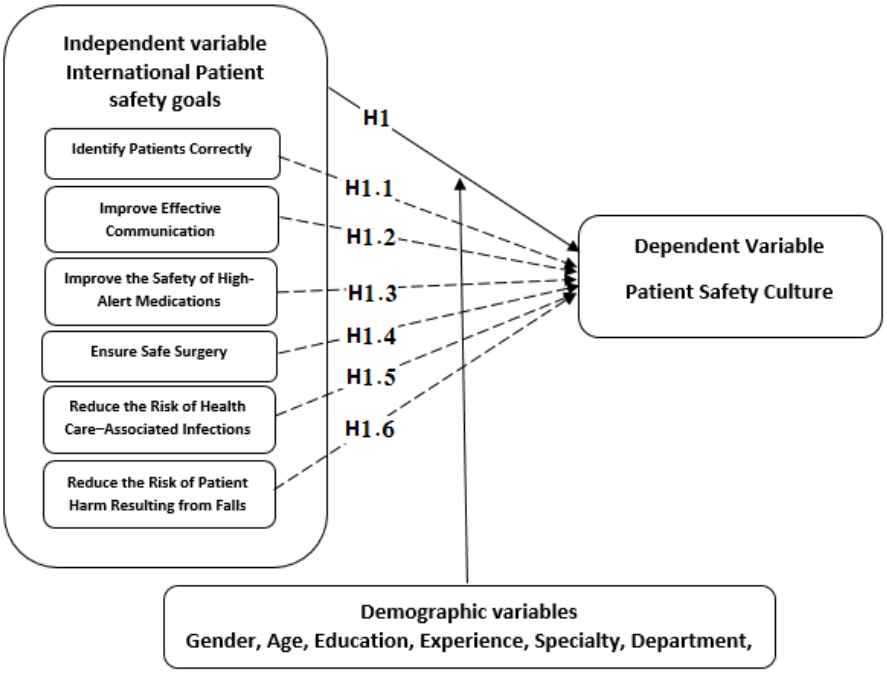

Figure (1.1): conceptual frame work

H1: There is no significant impact of IPSGS implementation on a patient safety culture.

H1.1: Patient identification has no significant impact on a patient safety culture.

H1.2: The culture of patient safety is not significantly impacted by communication.

H1.3: High alert medications has no significant impact on a patient safety culture

H1.4: The culture of patient safety is not significantly impacted by safe surgery

H1.5: The culture of patient safety is not significantly impacted by infection.

H1.6: The culture of patient safety is not significantly impacted by falls reduction

1.7 Theoretical and Operational definitions

1. Theoretical definitions

International patient safety goals: The IPSGs were created in order to encourage particular patient safety enhancements. For tackling a variety of issues in health care, experts and evidence-based consensus solutions are provided throughout the goals. The goals are often system-wide, wherever practicable, in acknowledgment of the significance of excellent system design for providing safe, high-quality healthcare (Joint Commission International and Joint Commission on Accreditation of Healthcare Organizations, 2007)**.**

Goal 1: Identify patients correctly: To increase the reliability of patient identifications at the hospital, a procedure is created and put into place. If a patient is unconscious, confused, or medicated, they may change beds or rooms, forget who they are, or be in other settings that make it difficult to identify them accurately. Two tasks must be completed in order to reach this objective: identifying the individual as the human being for whom the service or treatment is meant and matching that person with the service or treatment. Correctly identifying the patient is the first step in providing safe care. The hospital's identification procedure includes the use of barcoded wristbands or other patient identification tools. Patient names, ID numbers, dates of birth, or other details are used to identify him or her (Joint Commission International & Joint Commission on Accreditation of Healthcare Organizations, 2007).

Goal2: Improve effective communication: The hospital creates and implements a procedure to enhance verbal and/or telephone contact between caregivers. It has also been demonstrated that timely, accurate, thorough, and unambiguous communication increases patient safety. You can communicate verbally, online, or in writing (Joint Commission International. & Joint Commission on Accreditation of Healthcare Organizations, 2007)

Goal 3: Improve the safety of high-alert medications: Medication management is crucial to a patient's safety when medicine is included in their treatment plan. Any medication, even those you can get without a prescription, could be harmful to you if used improperly. However, if high-alert medications are provided improperly, harm is likely to be more severe, which may result in more severe side effects for patients and possibly higher healthcare costs. High-alert drugs can cause more serious injury when they are taken inappropriately, which can result in greater patient suffering and possibly higher healthcare costs for these individuals. The Institute for Safe Medication Practices (ISMP) defines high-alert pharmaceuticals as "drugs with a high risk of causing significant patient harm if used incorrectly" (Joint Commission International &Joint Commission on Accreditation of Healthcare Organizations, 2007).

Goal 4: Ensure safe surgery: Hospitals worry about serious patient harm, adverse events, and sentinel surgeries brought on by the wrong site, wrong procedure, or inappropriate surgery. Lack of a methodology for marking the treatment site, insufficient patient assessment, a work environment that discourages open communication between team members, and the use of abbreviations are all common contributing factors that can result in such incidents. These incidents can also occur as a result of ineffective or poor communication among members of the surgical procedure team (Joint Commission International & Joint Commission on Accreditation of Healthcare Organizations, 2007).

Goal 5: Reduce the risk of health care-associated infections: Any illness that a patient contracts while receiving hospital treatment is referred to as a "nosocomial" disease. It is an infection that the patient picked up when they were in the hospital. Infections brought on by extended hospitalization are now referred to as "healthcare-associated infections," and experts now understand that this is a

major risk factor for life-threatening illnesses (Bentvelsen, van der Vaart, Veldkamp, & Chavannes, 2021). The majority of healthcare facilities struggle with infection prevention and control, and both patients and practitioners are concerned about the rising incidence of infections linked to medical care. Infections that are brought on by catheter use include bloodstream infections, pneumonia, and urinary tract infections (Joint Commission International and Joint Commission on Accreditation of Healthcare Organizations, 2007). In order to get rid of these illnesses and others, it's essential to practice good hand hygiene. Guidelines for proper hand hygiene are published by international, national, & the World Health Organization (WHO, 2019).

Goal 6: Reduce the risk of patient harm resulting from falls: Falls in hospitals result in numerous injuries for both inpatients and outpatients. Patients, circumstances, and/or environments all raise the possibility of falling. Medication use, alcohol use, balance issues, visual impairments, disturbed mental states, and other variables can put patients at risk for falls. Patients who were earlier deemed to be at low risk for falls may unexpectedly see an increase in risk. The patient's state may vary as a result of a variety of factors, such as surgery and anesthesia, abrupt changes in the patient's condition, and adjustments to the patient's medication. During a hospital stay, it is typical for a patient to require a reevaluation (Joint Commission International & Joint Commission on Accreditation of Healthcare Organizations, 2007).

Patient safety culture: The degree to which an organization's culture supports and promotes patient safety is referred to as its PSC. It refers to the common values, beliefs, and standards that guide the activities and behaviors of healthcare professionals and other firm employees, (ALFadhalah et al., 2021).

Communication openness: staff members feel comfortable questioning those with more authority if they see anything that might affect a patient negatively, (ALFadhalah et al., 2021).

Feedback and communication about errors: Staff are informed about errors that happen, given feedback about changes implemented, and discuss ways to prevent errors; mistakes are reported to staff, changes are discussed, and ways to prevent future errors are discussed (Famolaro et al., 2016).

Frequency of events reported: Mistakes of the following kinds are reported: (1) mistakes corrected before they affect patients, (2) mistakes that do not threaten patients, and (3) mistakes that may harm the patient but do not (Famolaro et al., 2016).

Handoffs and transitions: During shift changes, hospital staff transfer important patient care information, (Famolaro et al., 2016).

Management support for patient safety: Hospital management provides a work climate that supports patient safety and considers that patient safety is a major concern. (Famolaro et al., 2016)

Non-punitive responses to errors: Employees believe that their errors and event reports are not in response to mistakes kept against them, and that errors are not put in their personnel file. (Famolaro et al., 2016).

Organizational learning-continuous improvement: Positive changes have been achieved through mistakes, and their effectiveness is evaluated, (Famolaro et al., 2016)

Overall perceptions of patient safety: Policies and procedures prevent errors well, and there is a decrease in patient safety issues, (Famolaro et al., 2016)

Staffing: There are enough employees to manage the workflow, and work conditions are reasonable in order to give high-quality care to patients, (Famolaro et al., 2016)

Supervisor/manager expectations and actions promoting safety: Managers take into account team ideas for enhancing patient care, commend staff for adhering to patient safety rules, and do not ignore patient safety issues, (Famolaro et al., 2016)

Teamwork across units: To provide patients with the best care, units from different hospitals cooperate and coordinate with each other, (Famolaro et al., 2016)

Teamwork within units: Staff work together as a team to support each other, do their best, and show respect to one another, (Famolaro et al., 2016).

2. Operational Definitions

International patient safety goals: These goals were identified by the Joint Commission International as 6 goals; in this study, a questionnaire was developed to measure the extent of the

application of these goals in the Palestinian hospitals that were examined. A total of (32) questions (Appendix: 1) depending on the specifications of (JCI, 2007) were distributed in order to:

- Goal 1: Identify Patients Correctly
- Goal2: Improve Effective Communication
- Goal 3: Improve the Safety of High-Alert Medications
- Goal 4: Ensure Safe Surgery
- Goal 5: Reduce the Risk of Health Care–Associated Infections
- Goal 6: Reduce the Risk of Patient Harm Resulting from Falls

Patient safety culture: In this study, the researcher relied on the Hospital Survey on PSC that was created by the Agency for Healthcare Research and Quality (AHRQ) (Sorra & Streagle, 2018) (Filiz & Yeşildal, 2022). A total of 39 questions (Appendix 1) were considered to measure these nine dimensions: Supervisor/Manager Expectations & Actions Promoting Patient Safety

- Organizational Learning—Continuous Improvement
- Non-Punitive Response to Errors
- Staffing
- Management Support for Patient Safety
- Teamwork Across and within Units
- Handoffs & Transitions
- Feedback & Communication about Error
- Overall Perceptions of Patient Safety

1.8 Ethical considerations

First of all, approval from AAUP (Appendix: 3) and private and governmental hospitals (appendix: 5) was obtained. Signed Informed consent was taken from participants (appendix: 4).

Privacy and confidentiality were completely protected. No identifiers or demographic information collected, including participants' names or IDs, was stored.

Chapter Two

Literature Review and Previous Studies

Overview

As an introduction to the study's variables, international patient safety goals and patient safety culture, this chapter contains a theoretical background related to these variables.

2.1 Introduction

Risk management and safety management are fundamental components of both medical practice and medical treatment. Achieving a balance between ethical considerations and impartiality is imperative in the administration of treatment, however, ensuring safety remains the fundamental principle of sound medical practice. The rapid pace of globalization has led to the development of evaluation methods that employ international indicators across various fields (Abe & Tuppal, 2018). Established in 1998, the Joint Commission International (JCI) is a non-profit tax-exempt organization based in the United States. Its primary function is to accredit healthcare organizations and programs, as well as certify hospitals worldwide, with the aim of upholding patient safety (Campra, Riva, Oricchio, & Brescia, 2021).

The Joint Commission International (JCI) requires the implementation of ongoing quality enhancement measures, commonly referred to as Continuous Quality Improvement (CQI), in order to effectively tackle the primary patient safety concerns, also known as the (IPSGs). The JCI accreditation process aims to evaluate the quality of patient care, establish uniformity in hospital protocols, provide education, and promote continuous quality improvement in healthcare organizations. The JCI endeavors to foster Continuous Quality Improvement (CQI) in healthcare delivery and ensure compliance with established benchmarks as it accredits medical services on a global scale. The authors Barghouthi and Imam (2018) posit that the expected outcome of JCI accreditation is an improvement in the safety of surgical patients.

The adoption of international medical standards by hospitals worldwide is imperative due to the diminishing significance of national borders in the context of globalization. In order to maintain high-quality medical care and improve the Continuous Quality Improvement (CQI) of provided services, the Joint Commission International (JCI) enforces rigorous compliance with (IPSGs). The accreditation of hospitals has become a critical measure in ensuring patient safety and upholding high standards of medical care. The trend of hospitals seeking external accreditation has been observed in recent times, owing to the rise in the number of JCI-accredited medical institutions worldwide (Wang & Tabshouri, 2018).

The Joint Commission International (JCI) has developed worldwide patient safety objectives that can be utilized to assess the leadership of head nurses in healthcare environments, with the aim of minimizing errors. The six objectives of this initiative include: (a) accurate patient identification; (b) enhancing communication effectiveness; (c) preserving the safety of high-risk medications; (d) ensuring proper procedures; (e) mitigating the likelihood of healthcare-associated infections; and (f) minimizing the potential for patient harm due to falls (Ananya et al., 2019).

Despite advancements in the realm of patient safety, healthcare institutions continue to face the prominent issue of human error, which refers to difficulties encountered during the execution of action plans. The existence of a punitive culture in institutions can lead to the underreporting of incidents, causing professionals involved in errors to experience emotions such as guilt, humiliation, and fear (Mahjoub et al., 2016).

The healthcare culture is characterized by the presence of informal systems, workarounds, emergent behaviors, and ongoing modifications. The provision and support of care involve a complex web of interrelated entities, encompassing various levels of organization, including individuals, groups, professionals, formal and informal institutions, and care facilities. It is imperative to take into account politics, emergent behaviors, strong connections, subcultures, and cultures. In addition, a plethora of tools and activities are available for individuals to utilize and engage in, alongside a

diverse patient population that is monitored, prescribed medication, admitted, treated, relocated, and released (Hunt et al., 2022).

The healthcare industry encompasses a diverse array of individuals who may exhibit varying degrees of motivation, organization, and adherence to established norms. Individuals exhibit a range of differences in their professions, competencies, expertise, societal position, influence, and objectives. Kakemam et al. (2022) assert that healthcare cultures, practices, attitudes, and behaviors can evolve in unforeseen ways, leading to the establishment and modification of local regulations over time. Moreover, individuals may collaborate to establish relatively long-lasting networks, organizations, and teams.

In the context of investigations and inquiries, it is often necessary to enhance the safety culture. The statement implies the existence of a singular and immutable cultural entity. There exists a multitude of cultures, each undergoing a process of evolution. Culture is a dynamic phenomenon that undergoes constant change due to various factors and determinants that may exert their influence on a daily or even moment-to-moment basis (Lawati et al., 2018). Culture is an abstract concept that is not easily tangible or precisely expressed. Although it is challenging to comprehend and unfeasible to measure, individuals are capable of perceiving it. According to Goncalves Filho and Waterson (2018), in the event of a significant occurrence or a shift in leadership, alterations in an organization can occur at a rapid pace, and individuals are capable of perceiving such changes.

An effective safety culture is characterized by the recognition of human fallibility and the inevitability of errors in healthcare. In the event of such errors, it is crucial to provide support to those affected and to conduct a thorough analysis of the underlying causes. According to Granel, Manresa-Domnguez, Watson, Gómez-Ibáez, and Bernabeu-Tamayo (2020), exhibiting supportive and constructive behaviors such as kindness, civility, respect, and empathy is crucial in upholding a safety culture. The presence of rudeness and competitiveness among professionals can impede the development of a safety culture. The aforementioned behaviors are exacerbated by inadequate

communication, a disorganized work environment, inadequate equipment, inadequate staffing, and a demanding workload, as noted by Hunt et al. (2022).

2.2 International patient safety goals

According to Kobayashi et al. (2021), the International Standards for Hospitals mandate that all JCI-accredited organizations implement the IPSGs by January 1, 2011, as per the guidelines set forth by the Joint Commission International. The development of the IPSGs was initiated with the aim of improving patient safety. The objectives prioritize matters pertaining to healthcare and furnish accounts of interventions that are grounded in empirical evidence. The stated objectives prioritize the implementation of system-wide solutions, whenever feasible, recognizing that the establishment of a robust system design is crucial for ensuring safe and efficient healthcare (Abe & Tuppal, 2018).

Patient safety is acknowledged as a significant public health concern by the World Health Organization. As per the resolution, the World Health Organization (WHO) is responsible for providing technical aid to its member states in the areas of safety reporting and risk mitigation, devising policies based on empirical evidence, fostering safety-oriented cultures, and facilitating research on patient safety. The WHO Regional Office for the Eastern Mediterranean initiated the patient safety friendly hospital program as a response to the pressing necessity for interventions that target deficiencies in patient safety (WHO, 2016).

The program entails the incorporation of patient safety requirements within hospital settings. Adherence to standards is imperative to prioritize patient safety and ensure that facilities and staff implement optimal practices. The inaugural version of the standards was published in 2011. The individuals responsible for their inception and endorsement were experts affiliated with both local and global institutions. The program underwent pilot testing in seven nations, namely Egypt, Jordan, Morocco, Pakistan, Sudan, Tunisia, and Yemen. Professionals were trained to conduct initial baseline assessments of hospitals in accordance with established standards and guidelines. The second edition of the standards has been revised to conform to the latest WHO recommendations and best practices (WHO, 2016).

The establishment of a patient safety program at the hospital level necessitates adherence to a set of requirements commonly referred to as patient safety standards. Hospitals are provided with a structured system that facilitates the assessment of patient care with respect to patient safety, imparts patient safety training to staff, and incorporates patients in augmenting healthcare safety. The assessment of hospital patient safety has been conducted through the utilization of a system known as the patient safety friendly hospital assessment. The objective of initiating a patient safety program or integrating it into an existing program is to provide institutions with a means of assessing the degree of patient safety (WHO, 2016).

2.3 Classifications of the IPSGs

2.3.1 Identify patients correctly

The primary objective of the IPSG is to provide healthcare services that are both cost-effective and of superior quality. Medical error is currently identified as the second most prominent cause of mortality. Despite the implementation of several measures to mitigate these errors, they persist as reported by Kobayashi et al. (2021).

The primary objective of the IPSG is to accurately identify patients and ensure the provision of optimal healthcare services. It is imperative for physicians to ensure that they provide the appropriate diagnosis and treatment, regardless of whether the patient's condition is straightforward or complex (Silalahi et al., 2022).

Errors related to incorrect patient identification occur across various aspects of diagnosis and treatment. According to Kalsoom, Victor, Virtanen, and Sultana (2022), patients may encounter various challenges that could impede accurate identification, such as changes in beds, rooms, or hospital locations, sedation, confusion, lack of full consciousness, sensory impairments, memory loss, or other similar circumstances.

The aim of this objective is twofold: firstly, to precisely recognize the individual as the intended recipient of the service or treatment, and secondly, to suitably align the service or treatment with the individual. The initial stage towards ensuring safety in healthcare is the appropriate

identification process. The hospital's protocol for patient identification necessitates the utilization of a minimum of two unique methods to authenticate each patient, which may include their name, identification number, birth date, bar-coded wristband, or other comparable approaches (Abd El Hamid et al., 2021).

The fundamental entitlement of an individual to identify any patient and connect them with suitable healthcare providers and treatment options is crucial. However, the likelihood of erroneous identification persists, particularly in cases of incapacitated or comatose patients (Al-Sayedahmed et al., 2021).

Methods to correctly identify patients

Within the healthcare industry, inadequate patient identification procedures have been found to lead to a range of negative outcomes, including but not limited to errors in prescription, transfusion, and testing, as well as instances of incorrect surgical procedures and the accidental release of infants to incorrect families (Abousallah, 2018).

In order to enhance the precision of patient identification, it is imperative to adhere to the protocol of requesting patients to identify themselves and utilizing "two patient identifiers." Moreover, the utilization of dual identifiers enhances the probability of appropriate matching between the individual and the service or treatment. The implementation of this procedure is expected to enhance the quality of patient care by mitigating errors. In order to accurately ascertain the identity of patients, it is advisable to take into account the techniques outlined by Abousallah (2018):

1. Medical facilities must follow protocols to: Healthcare practitioners must identify patients and connect them with the right care, including test findings, specimens, or procedures, before providing care. Healthcare practitioners' main duty is this.
    - Promote the use of various identifiers, such as a patient's name and birthdate, to verify their identity before obtaining medical care or being admitted to another healthcare facility. Avoid using the patient's room number as an identifier.

- Patient identification must be consistent throughout healthcare settings. Biometric technologies and white ID bands with a pattern or marking and a name and birthdate are two identification methods.
- Establish clear and accurate processes to identify patients without adequate identification and distinguish those with the same name. Nonverbal methods for detecting coma and cognitive impairment are crucial. Promote patient involvement during the procedure.
- Labeling blood and other specimen containers with the patient is advised.
- Develop accurate methods for protecting patient sample identities during pre-, analytical, and post-analysis.
- When laboratory or other test findings don't match the patient's clinical history, a defined protocol is needed.
- Regular inspections and reviews can reduce computer entry error-induced automatic compounding.

2. It is recommended that healthcare organizations incorporate training on patient identity verification and checking methods into their new hire orientation and ongoing professional development programs for healthcare staff.
3. It is imperative to educate patients on the importance and pertinence of precise patient identification in a constructive manner that also addresses privacy concerns.

Potential difficulties in patient identification (Silalahi et al., 2022):

1. Difficulty changing one's own behavior to follow recommendations, including the usage of workarounds and shortcuts.
2. Process diversity amongst organizations within a region.
3. Process variety where the same practitioners may work in regional facilities (for example, color-coded wrist bands with different meanings in different organizations).
4. The costs of various technical solutions.

5. Technology integration both within and between companies.
6. Perception among healthcare professionals that the patient-provider connection is jeopardized by constant identity checks.
7. Technological answers that disregard the realities of clinical care environments. a rise in the workload for staff members and time away from patient care.
8. Errors made when entering data when registering patients on computers.
9. Culture-specific problems, such as:
    - The stigma attached to wearing an identity band.
    - For older patients, there is a high danger of patient misidentification because of name structure, name similarity, and inaccurate birth dates.
    - In order to access services, patients use other people's health cards.
    - Identity-obscuring clothing

2.3.2 Improve effective communication

The discourse surrounding the relationship between physicians and patients has been widely explored. However, in the present-day healthcare landscape, numerous patients maintain affiliations with a diverse array of healthcare providers. An individual seeking medical treatment for one or more disorders may frequently engage in communication with a diverse group of healthcare professionals operating in different settings. On a daily basis, a multitude of healthcare professionals, including but not limited to employees working in two to three separate shifts, doctors, nurses, and various teams conducting rounds, as well as other professionals administering tests or providing treatment, may engage with patients who are receiving inpatient care. According to Silalahi et al. (2022), patients may seek medical attention from a primary care physician and multiple specialists, along with their respective staff, in outpatient settings situated at diverse locations.

As a consequence, patients often encounter the challenge of integrating messages of varying quality to form a comprehensive understanding of their health status, which may still be deficient in terms of contextualization, comprehensiveness, and precision. Under certain circumstances, an

unclear or indistinct image can result in significant complications. The lack of effective communication has the potential to lead to legal action against healthcare providers, harm to patients, and in severe cases, fatalities.

The JCI has incorporated recommendations pertaining to communication within their National Patient Safety Goals (NPSGs) and (IPSGs) as a means of resolving the matter, according to Kunjukunju and Ahmad (2019).

IPSG goal 2 centers on the execution of crucial modifications to healthcare protocols, with a particular emphasis on enhancing communication efficacy. The achievement of this IPSG objective holds significant importance in enhancing the standard of healthcare.

Frequently encountered challenges in communication or areas of difficulty in conveying messages effectively. Patients and their families have an expectation of receiving sufficient information throughout their care to fully comprehend the goals of the care and to make informed decisions. Typically, a comprehensive summary of the pertinent information, including instructions for discharge and aftercare, is provided to the patient either at the end of their hospitalization or when their care is transferred to another healthcare provider. Each patient possesses a distinct set of literacy and learning abilities as a result of their diverse linguistic preferences, cultural backgrounds, and ages. Moreover, it is common for healthcare practitioners to adhere to varying standards and cultural practices, leading to inadequate communication and avoidable mistakes (Girginer & İskenderoğlu, 2021).

The subsequent paragraphs enumerate the factors that often give rise to communication breakdowns, which may result in unfavorable health outcomes for patients. The pressure of working in a fast-paced healthcare environment can have an impact on various factors such as multitasking errors, interruptions, distractions, memory lapses, weariness, stress, and sleep deprivation. These factors have the potential to endanger patient safety, as noted by Fadhillah et al. (2018).

Insufficient transfer of information during handovers. Inadequate handoff communications, which are also referred to as transitions of care or handoff communications, have been identified as a

significant contributor to adverse events, particularly sentinel events that lead to severe harm or patient mortality. The process of transferring responsibility for patient care, commonly referred to as handovers, occurs among healthcare professionals, including doctors, nurses, and other relevant parties. These handovers may occur within the same hospital, between different levels or locations of care, or between healthcare providers at distinct organizations. Additionally, handovers may involve healthcare professionals communicating with patients and their families, particularly during the discharge process.

Insufficient provision of discharge planning or instructions. In the absence of a robust discharge plan, patients may experience readmission, non-adherence to the plan, difficulties in medication management, and necessitate supplementary care. Healthcare providers frequently commit the error of imparting complex and unfamiliar medical jargon to patients prior to their discharge, without providing adequate explanation and ensuring comprehension. In the absence of a comprehensive discharge plan, healthcare providers working in understaffed healthcare facilities may experience a sense of urgency to discharge patients who are still unwell, a phenomenon commonly referred to as "quicker and sicker" discharges.

Age-related challenges are obstacles that are associated with the process of aging. There exists a variability in the developmental pace of children, which consequently results in diverse levels of comprehension and engagement in healthcare decision-making. Despite the potential for chronic or fatal illness to accelerate a child's level of maturity, it remains necessary for families to provide support to children who may appear capable of making rational decisions. Interacting with adolescents presents unique challenges in terms of communication. Adolescents may exhibit a tendency to withhold personal information due to apprehension regarding potential negative feedback. The adolescent population exhibits a higher propensity for engaging in high-risk behaviors that may require medical attention, despite having the lowest probability of accessing medical care compared to other age groups. Elderly patients exhibit distinct requirements in comparison to their younger counterparts situated at the opposite end of the age continuum. Elderly patients may

encounter communication challenges as a result of cognitive impairments or hearing deficiencies. Insufficient communication between senior patients and their caretakers can also stem from the presence of multiple comorbidities. Efficient communication with patients and their families is of utmost importance during end-of-life care, particularly when deliberating the cessation of life-sustaining interventions.

Medical orders and test results may contain errors. The verbal transmission of orders or test results to patients or other healthcare professionals, whether in person or over the phone, is another mode of communication that is susceptible to errors. The recipient may encounter difficulties in comprehending the instructions or results owing to variations in accents, dialects, and pronunciations. The precision of the outcome or arrangement may at times be influenced by the phonetic resemblance of drug names and numerical values, for instance, erythromycin and azithromycin, or 15 and 50. The problem is often exacerbated by disruptions, ambient sounds, and unfamiliar pharmaceutical nomenclature.

The JCI has included recommendations relating to communications between NPSGs and IPSGs in order to address the issue. JCI standards offer the following recommendations to address the issue (JCI, 2007):

It is imperative to provide a comprehensive and lucid explanation to patients and/or their families regarding the anticipated expenses associated with the medical treatment.

The patients should be familiarized with the equipment and amenities utilized in the inpatient environment to facilitate their care and services.

Encouragement of patient involvement in care and treatment decision-making is promoted. Patients are provided with comprehensive information regarding their medical care and treatment, and are afforded the option to decline or discontinue care, abstain from resuscitation services, or retract life-sustaining treatments, in accordance with the legal, regulatory, and societal norms of their respective nation.

The process of obtaining informed consent from patients for high-risk treatments and procedures, including but not limited to surgery, anesthesia, procedural sedation, and the use of blood and blood products, should be carried out by qualified professionals in accordance with the hospital's established protocol. The language and manner in which the information is presented to the patient should be easily comprehensible to ensure their understanding.

Produce a written inventory outlining the entitlements and responsibilities of patients and their relatives, which is disseminated to patients or exhibited for the advantage of the ambulatory populace. Formulate a statement that is appropriate for the patient's developmental stage, cognitive abilities, and linguistic proficiency. When faced with scenarios where written correspondence proves to be inadequate or unsuitable, it is imperative to apprise the patient and their family of their entitlements and responsibilities in a manner that is comprehensible to them.

Health care professionals can improve patient relationships and health outcomes by adhering to evidence-based strategies designed to enhance communication. Through its standards and other resources created with the needs of patients and clinicians in mind, JCI is prepared to help (Despotou, Her, & Arvanitis, 2020).

2.3.3 Improve the safety of high-alert medications

The IPSG comprises a set of goals and objectives that have been developed with the aim of enhancing patient safety during the global administration of high-alert medications. The aforementioned drugs, comprising a variety of antibiotics, anticoagulants, cardiac medications, and chemotherapeutic agents, are categorized as highly hazardous. The primary objective of the IPSG is to enhance the safety of medications through the development of significant medical procedure advancements (Shahin & Krim Alshammari, 2020).

Effective management is crucial in ensuring patient safety when pharmaceuticals are incorporated into the patient's therapeutic regimen. Improper usage of medication, including those that are available over-the-counter, can result in adverse effects on one's health. In the event of incorrect administration of high-alert medications, the potential for harm is significantly heightened,

thereby exacerbating patient distress and potentially augmenting the expenses associated with patient care. As per the Institute for Safe Medication Practices (ISMP), medications that pose a significant risk of causing severe harm to patients when used improperly are classified as high-alert medications (Shahin & Krim Alshammari, 2020).

Medication errors are a significant concern for both patients and healthcare providers. In recent years, there have been notable efforts to assess the origins of medication errors through scholarly publications, as evidenced by the work of Baxter, Lawton, O'Hara, and Sheard (2018).

According to Vieira et al. (2022), a medical error is an avoidable occurrence that has the potential to result in inappropriate medication use or harm to the patient while the medication is under the control of the healthcare provider, patient, or consumer.

Historically, apprehensions regarding the safety of medication have revolved around adverse drug reactions resulting from the intended prescription's accompanying side effects. The term "medication safety" encompasses errors that are not attributable to the intended pharmacological actions of a drug. These errors may include instances where the correct medication is administered inadvertently, at an incorrect dosage, or via an inappropriate route of administration. The term "adverse drug events" is utilized to refer to such occurrences. Medications that pose a high risk should undergo thorough examination, prescription, dispensation, and delivery. Technology should be utilized wherever it is deemed suitable. It is imperative for hospitals, clinics, and treatment facilities to establish standardized protocols to ensure the safety of their pharmaceuticals, as noted by Ananya et al. (2019).

Medications categorized as High Alert Medications (HAMs) are associated with a significantly elevated risk of causing severe harm to patients in the event of incorrect administration. Pharmaceuticals categorized as high-risk medicines, commonly referred to as HAMs, possess a significant potential for causing harm, even when administered appropriately under specific conditions. The incidence rate of high alert medication errors in comparison to other medication errors

remains uncertain. However, the occurrence of such errors may lead to severe adverse effects on the patient's health (Bates & Singh, 2018).

Medication management remains a top priority for hospitals. Adverse consequences of design and execution deficiencies may inflict significant harm upon patients, and their identification may only occur subsequent to the occurrence of a sentinel event. JCI's medication management specialists offer comprehensive evaluations and assessments to develop a quality improvement plan that addresses issues and provides assistance. Thorough evaluations of pharmaceutical management policies, data, and protocols are conducted across the organization. Performance gaps are identified through the utilization of leading practices and standards set forth by the Joint Commission International.

The IPSG was formulated by the JCI as a supplementary component to the WHO Essential Medicines List (EML). The article by Sharland et al. (2018) outlines a series of five goals and six objectives aimed at providing guidance to healthcare professionals and stakeholders on strategies to enhance the safety of high-alert medications.

Lockable cabinets are designated for the storage of concentrated electrolytes and are segregated from other medications. These electrolytes are solely accessible in emergency situations. Medications that possess similar visual and auditory characteristics are designated as HAM, which can be recognized by a conspicuous red label bearing the phrase "High alert." According to Bryan, Aronson, Williams, and Jordan (2021), medications that possess names that are phonetically or visually similar to other medications are categorized as Look Alike Sound Alike (LASA) medications. Additionally, medications that have packaging that is aesthetically comparable to another prescription are also classified as LASA medications.

A pharmaceutical substance is considered to be "sound-alike" if its generic or proprietary designation exhibits phonetic and orthographic similarity. As a consequence, their likelihood of committing an error related to medication increases. It is advisable to avoid storing analogous pharmaceuticals together with their respective counterparts. In order to minimize the likelihood of

errors, it is advisable to store medications separately from each other whenever feasible. It is recommended that medications that exhibit similarities in appearance should be accompanied by supplementary cautionary labels. Bryan et al. (2021) suggest that uniform display of warning labels throughout a facility can aid in their identification.

2.3.4 Ensure safe surgery

The fourth IPSG goal involves the evaluation of all surgical interventions prior to their implementation, with the aim of ensuring their appropriateness for patients with diverse needs, including factors such as age, weight, height, and other relevant considerations (Kobayashi et al., 2021).

Hospitals remain concerned about the occurrence of severe patient harm and negative and sentinel events resulting from surgical procedures that involve wrong-site, wrong-procedure, and wrong-patient errors. The aforementioned incidents may arise due to inadequate communication amongst the team members performing surgical or invasive procedures, absence of a standardized protocol for marking the procedural site, and insufficient patient participation in the site marking process. According to Abe and Tuppal (2018), common contributing factors include a cultural environment that discourages open communication among team members, illegible handwriting, the use of abbreviations, and inadequate patient assessment.

The attention was redirected towards formulating tactics to guarantee that patients would not incur harm due to errors committed in the surgical setting. The procedures for ensuring patient safety in the operating room are founded on techniques aimed at reducing the occurrence of errors. It may be necessary to revamp the operational mechanisms of perioperative care providers for the implementation of such techniques. Kalsoom et al. (2022) have identified several newly developed systems that aim to improve care processes. These systems include the implementation of standards, the utilization of checklists and protocols to reduce reliance on memory, and the simplification of procedures to the maximum extent feasible.

Although rare, wrong-site surgery is deemed inappropriate and can lead to severe harm. The utilization of existing site-verification techniques could have prevented a maximum of 66.67% of the cases that were subjected to analysis. According to Ananya et al. (2019), there exist several protocols that exhibit a significant degree of complexity, yet their associated benefits are not readily apparent.

According to Kobayashi et al. (2021), there exist a minimum of four fundamental obstacles to enhancing surgical safety. Initially, the matter has not been recognized as a significant concern for public health. The prevailing notion is that surgical care is of limited utility in low- and middle-income nations due to its often-exorbitant cost. Nevertheless, the 2002 WHO Global Burden of Disease report demonstrated that a considerable proportion of disease-induced disability across the globe is attributable to ailments that are amenable to surgical treatment.

It is estimated that surgical procedures are conducted on approximately 63 million individuals each year for traumatic injuries, 31 million for cancer-related conditions, and 10 million for obstetric complications. Both affluent and emerging nations possess a comprehensive understanding of the concerns pertaining to surgical safety. In less developed regions, obstacles encompass inadequate access to reliable resources and superior healthcare services, deficiencies in administrative oversight and disease containment, difficulties in staffing and training, and substantial insufficiency of financial resources.

For over a century, surgery has played a pivotal role in promoting public health. The significance of this phenomenon is rapidly increasing due to the global extension of lifespans. The issue of inadequate access to fundamental surgical care persists in low-income regions, prompting the World Health Organization's Global Initiative on Emergency and Essential Surgical Care to prioritize the expansion of accessibility as its primary objective. Nevertheless, the commensurate need for measures aimed at augmenting the safety and reliability of surgical procedures has received scant recognition.

Insufficient basic knowledge has been identified as the second significant hindrance to improving surgical safety. Efforts aimed at reducing maternal and newborn mortality during

childbirth have predominantly relied on routine tracking of mortality rates and obstetric care delivery systems to monitor progress and identify potential issues. There has been a significant lack of comparable observation in the realm of surgical care. As per the WHO Patient Safety Program, a limited proportion of member states of the World Health Organization have readily available statistics on surgery volume.

The third primary concern pertaining to the assurance of surgical safety is the apparent lack of consistent adherence to established safety protocols across nations. Whilst resource scarcity is a prevalent issue in low-income regions, it may not always be the most paramount challenge. Empirical evidence indicates that irregular compliance with established therapeutic interventions, such as administering antibiotic prophylaxis immediately prior to incision and verifying the efficacy of instrument sterilization, persist as the most prevalent sources of significant surgical complications.

The observed outcome is not attributable to pricing mechanisms, but rather to insufficient systematization. As an illustration, the administration of antibiotics prior to surgery is often characterized by premature, delayed, or inconsistent delivery in both developed and developing countries. Although safety and monitoring regulations have led to a reduction in preventable deaths and disabilities in developed nations, anesthesia-related complications remain a major contributor to mortality rates during surgical procedures worldwide.

The fourth fundamental concern in enhancing surgical safety pertains to the intricacy of surgical procedures. Even rudimentary medical procedures necessitate numerous critical steps, each carrying the possibility of error and the potential to inflict harm upon patients. The process involves a series of measures that encompass precise identification of the patient and the surgical site, sterilization of equipment, and strict adherence to multiple guidelines for the safe delivery of anesthesia.

The expertise and proficiency of the individual medical practitioners comprising the surgical teams, including surgeons, anesthesiologists, nurses, and other personnel, represent the foremost valuable assets. Effective collaboration and utilization of surgical team members' expertise and skills

can prevent a considerable proportion of life-threatening complications in surgical patients. The absence of a structured framework or guidance for promoting effective teamwork and mitigating risks to surgical patients has been observed among the personnel operating within the surgical theater (Aguiar et al., 2017).

2.3.5 Reduce the risk of healthcare–associated infections

Across the annals of time, transmissible infectious ailments have presented a formidable challenge and hazard to human populations, with scholars noting the emergence of widespread outbreaks stemming from animal-originated diseases. Prior to the discovery of communicable diseases, infections were commonly attributed to various factors such as asters, environmental changes, divine intervention, or spiritual causes (Magill et al., 2018).

Despite the prior assumption that infectious diseases could be effectively controlled, they persist in presenting a significant challenge to the overall well-being of the global population. Furthermore, as they persist as the primary source of morbidity and mortality, the expenses associated with their treatment are substantial and increasing. Over the course of the last three and a half decades, a minimum of thirty novel infectious and communicable ailments have surfaced, with the preponderance of these being of zoonotic origin (Haque, Sartelli, McKimm, & Bakar, 2018).

The highly mobile worldwide populace, grappling with novel ailments such as COVID-19 and the global outbreak of drug-resistant infectious diseases, has increasingly experienced the economic, environmental, and ecological ramifications of infectious diseases. The citation provided is attributed to Meredith and colleagues in the year 2020.

Healthcare-associated infections (HCAIs) are a prevalent cause of mortality and morbidity, ranking second globally. As per the findings of the World Health Organization (WHO) and several other researchers, it has been observed that 10% of patients in emerging and developing economies who have contracted at least one type of healthcare-associated infection (HCAI) succumb to their ailment. Similarly, in high-income economies, the mortality rate for such patients is 7% (Weiner-Lastinger et al., 2020).

Infection prevention and control pose a significant challenge for numerous healthcare settings, and the escalating incidence of healthcare-associated infections is a pressing concern for both healthcare providers and patients alike. Infections, including pneumonia, bloodstream infections, and catheter-associated urinary tract infections, are commonly observed in healthcare facilities, with mechanical ventilation being a frequent contributing factor.

Strategies to prevent healthcare-associated Infections

Many people, including doctors, patients, and the general public, are worried about healthcare-associated infections (HCAIs) and how to avoid and control them. The key strategies for mitigating the effects of HCAIs, as determined by the research published in reputable publications. The primary concerns raised in the aforementioned works are as follows (Bentvelsen et al., 2021; Haque et al., 2020; Jacob, Herwaldt, Durso, & Program, 2018; López-Alcalde et al., 2019):

1. **Hand hygiene**

The protection of patients in healthcare settings is a significant global issue, particularly due to healthcare-associated infections (HCAIs) being the predominant form of unfavorable occurrences in all healthcare systems, regardless of income level. Improved hand hygiene among healthcare workers has been identified as the most crucial behavior change that can be made for infection control, as HCAIs affect a substantial number of hospitalized patients each year, resulting in significant morbidity, mortality, and financial losses for individuals, communities, and the public healthcare budget.

Maintaining hand hygiene is a crucial aspect of infection control in healthcare facilities; however, it is frequently disregarded. It is recommended that hand sanitizers and antibacterial soap be conveniently accessible to encourage consistent adherence to proper hand hygiene practices. Alcohol-based hand rubs have been found to be more efficacious than conventional handwashing methods due to their shorter application time, faster action, lower propensity to cause irritation, and ability to maintain heightened compliance, which is associated with reduced infection rates.

2. Environmental hygiene

Effective environmental hygiene is crucial in the prevention and management of infections, particularly healthcare-associated infections (HCAIs). The prevalence of unhygienic conditions on hospital surfaces is a primary contributor to the dissemination of potentially lethal infections. Porous surfaces, including beds, mattresses, and linens, are particularly vulnerable to contamination by high-risk bacteria. Similarly, nonporous objects such as bed rails, door handles, call bells, and light switches are also at risk of contamination. Thus, it is imperative to mitigate healthcare-associated infections (HCAIs) by maintaining strict hygiene protocols throughout healthcare facilities.

3. Screening patients

The significant morbidity and mortality resulting from hospital-acquired infections (HCAIs) caused by antimicrobial-resistant (AMR) pathogens have prompted political and community apprehension. Despite several attempts to limit the dissemination of HCAIs, these measures have encountered obstacles or have been ineffective. Strategies aimed at reducing and managing healthcare-associated infections (HCAIs) encompass active surveillance cultures (ASCs), contact isolation protocols for patients harboring epidemiologically significant pathogens, and preemptive isolation measures for patients at elevated risk.

4. Surveillance

The significant morbidity and mortality resulting from hospital-acquired infections (HCAIs) caused by antimicrobial-resistant (AMR) pathogens have prompted political and community apprehension. Despite several attempts to limit the dissemination of HCAIs, these measures have encountered obstacles or have been ineffective. Strategies aimed at reducing and managing healthcare-associated infections (HCAIs) encompass active surveillance cultures (ASCs), contact isolation protocols for patients harboring epidemiologically significant pathogens, and preemptive isolation measures for patients at elevated risk.

5. Antibiotic stewardship

Antimicrobial stewardship refers to the appropriate selection, dosage, and duration of antimicrobial therapy for the purpose of managing or preventing illness while minimizing the occurrence of adverse effects and drug resistance. In addition to mitigating the superfluous or deleterious utilization of antibiotics, this assertion advocates for the judicious and calibrated administration of these vital medications.

2.3.6 Reduce the risk of patient harm resulting from falls.

Falls represent a prevalent etiology of harm in healthcare facilities, impacting both hospitalized and non-hospitalized patients. The likelihood of falling is impacted by various factors, including the individual's physical condition, the situation at hand, and/or the surroundings. According to Radecki, Reynolds, and Kara (2018), patients may be susceptible to falling, medication intake, alcohol consumption, balance or gait problems, visual impairments, altered mental status, and other related factors.

Individuals who were previously categorized as having a low propensity for falls may now exhibit an elevated susceptibility. Several factors can contribute to rapid changes in a patient's state, including surgical procedures, administration of anesthesia, medication adjustments, and other related factors. During the course of their hospitalization, a significant number of patients necessitate reassessment. Patients deemed to be at an elevated risk for falls are identified based on an additional risk factor. The patient's medical record documents the standards and interventions employed to classify the patient as a fall risk, as per the findings of Moreland, Kakara, and Henry (2020). It is incumbent upon the hospital to ascertain which patients are at risk of falling. The establishment of clear and concise standards facilitates the provision of consistent and uninterrupted medical care by healthcare practitioners attending to a patient.

According to the 2018 National Patient Safety Goals (NPSGs), there are two distinct mandates. Firstly, healthcare providers must evaluate and routinely re-evaluate the likelihood of each patient experiencing a fall, taking into account any potential risks associated with the patient's

medication regimen. Secondly, healthcare providers must take appropriate measures to mitigate any identified risks. The source cited is Canady (2018).

The incidence of falls within the context of acute care hospitals is a matter of considerable concern, given the potential for adverse outcomes, particularly among geriatric patients. Hence, it is imperative to conduct a thorough inquiry and execute preventive measures to mitigate the occurrence of falls. The primary goal of several fall prevention initiatives has been the creation and implementation of risk assessment tools that can effectively identify individuals who are at an elevated risk of experiencing falls. The objective of this methodology is to enhance the distribution of resources and interventions by focusing on individuals who exhibit the highest vulnerability to falls (Marte, Strauss, & Phillips, 2019).

2.4 Patient safety culture

Ensuring patient safety has emerged as a paramount concern for healthcare institutions worldwide, as it is widely believed to be a crucial factor in upholding healthcare standards. The concept of safety culture is an evolving notion that prioritizes the prevention of medical errors and the maintenance of patient safety, as noted by Abu-Hamad, Hamdan, and Al-Saqqa (2016).

In Palestine, an increasing number of hospitals are seeking accreditation from the Joint Commission International Accreditation (JCIA) as patient safety has emerged as a critical factor in the success of healthcare facilities. The accreditation of An-Najah National University Hospital (NNUH) has been recently achieved. In addition, the Ministry of Health and NNUH have participated in the WHO's Patient Safety Friendly Hospital Initiative, as reported by Zabin et al. (2022).

Without measurement, patient safety cannot be increased. Health care professionals, especially top-level executives and their staff, must share a shared vision in order to change the culture or even just a few practices and policies in the organization (ALFadhalah et al., 2021).

The emphasis of PSC is on the organization's culture with regard to patient safety. It is defined as a pattern of conduct among people and groups based on common values and tenets that continuously

strives to minimize any potential patient damage that might occur during the delivery of care (Al-Nawafleh et al., 2016)

Cultures that value patient safety are characterized by strong leadership that puts safety first. Leadership and management commitment are crucial because their actions and attitudes affect how the larger workforce perceives itself and behaves. Other essential components of a culture that promotes patient safety include (Hunt et al., 2022):

- Opinions on the value of safety that have been identified
- Helpful conversation
- Respect for one another, a motivated workforce, and a constant awareness of potential issues
- Acceptance that errors happen at all levels, and the capacity to recognize, deal with, and take away lessons from unfavorable situations.

The potentially disastrous effects of dysfunctional workplace cultures on patient care have been made clear by investigations into patient safety. An examination of the questions revealed the following typical deficiencies (N. Kim & K. J. Moon, 2021):

- Clinical governance standard limitations
- A lack of monitoring important factors affecting patient outcomes
- A propensity to focus more on financial objectives than on benchmarks for healthcare systems and results
- An unhealthy organizational culture that creates pressure on the staff and fails to put the patient at the center of all activities

2.4.1 Measuring patient safety culture

The assessment of PSC facilitates the detection of domains that require enhancement as well as those that exhibit commendable attributes. Given this understanding, it is possible to develop efficacious interventions. According to Lee et al. (2019), the assessment of PSC metrics can serve as a means of evaluating the effectiveness of newly implemented safety measures by comparing the outcomes obtained prior to and following their implementation.

The assessment of PSC can be conducted through a variety of methods, including hospital staff surveys, qualitative analysis such as focus groups and interviews, ethnographic research, or a hybrid approach that combines these techniques. The assessment of PSC in hospitals is frequently conducted through the use of employee surveys, which constitute a fundamental element of a comprehensive measurement and enhancement framework. It is imperative to monitor this metric in conjunction with other indicators of quality and safety, such as inpatient complications, mortality rates, patient feedback, and notable incidents. The Hospital Survey on Patient Safety Culture (HSOPSC) is a technique employed in the field (Filiz & Yeşildal, 2022).

2.4.2 Hospital Survey on PSC (HSOPSC)

Upon recognizing the need for a means of assessing PSC within healthcare organizations, the Medical Errors Workgroup of the Quality Interagency Coordination Task Force (QuIC) provided funding for the creation of a hospital survey that places particular emphasis on PSC. The Healthcare Safety and Outcomes Performance Support Center (HSOPSC) is under the funding and supervision of the Agency for Healthcare Research and Quality (AHRQ). The HSOPSC was created by a private research company that was contracted by the AHRQ. According to Filiz and Yeşildal (2022),...

The present study examines the hospital Patient safety survey as perceived by hospital personnel, with a focus on exploring the culture of patient safety. According to Nwosu et al. (2022), the survey is open to all personnel working in the hospital, including but not limited to housekeeping, security, nurses, and doctors.

Safety culture dimensions measured in the Survey

The survey places an emphasis on patient safety issues and on error and event reporting. The survey measures the following aspects of safety culture:

1. **Organizational learning—Continuous improvement**

Continuous improvement in healthcare is an organizational process that involves all team members of a health system or hospital, from CMOs to doctors to shift nurses, in developing and putting into effect continual improvement techniques and initiatives. Better patient health outcomes

are, of course, the main objective of these initiatives; nevertheless, continuous improvement can also (Okuyama, Galvao, & Silva, 2018):

- Simplify the clinical care procedures.
- Cut down on treatment variability.
- Reduce expenses for patients and providers.
- Aid hospitals in adhering to regulations.
- Increase the level of patient and family satisfaction with customer service.

Continuous improvement, which describes the outcomes of actions taken to improve a good or service, is sometimes combined with continuous improvement. Healthcare systems will employ continuous improvement techniques to improve the quality of patient treatment, financial management, and training procedures. These two ideas are combined in the concept of continuous quality improvement in healthcare, yet they are mutually exclusive. While quality improvement may be the focal point of continuous improvement, the two activities may fall under the purview of totally different divisions within a healthcare institution (Danielsson, Nilsen, Rutberg, & Årestedt, 2019).

Hospitals and healthcare organizations who successfully execute a continuous improvement strategy can anticipate (Lawati et al., 2018):

- Enhancing patient satisfaction.
- Enhance treatment results.
- Boost public health.
- Find areas where patient care could be enhanced.
- Reduce healthcare expenses for patients and providers.
- Become more familiar with their patient population.
- Convert statistics into an iterative action plan.

2. Non punitive response to errors

The goal of establishing and nurturing a just culture, including a no punitive response to errors, grows increasingly predominate among engaged nurse leaders given the importance of improving

patient safety in healthcare. Through staff surveys, we can gauge the PSC of a hospital's no punitive response to errors (Moreland et al., 2020).

A non-punitive culture, often known as the trademarked term "Just Culture," is one in which employees are urged to perform to the best of their abilities in every circumstance. When mistakes are made, the organization concentrates on the responsibility of the parties involved and the environment in which the mistake occurred. These businesses develop into learning businesses that are dedicated to developing work environments where procedures are created to always reduce errors and prioritize safety. They are proactive in finding and fixing system faults at all organizational levels. The person is responsible for their own conduct in a culture that does not use punishment (Mahjoub et al., 2016).

The corporation acknowledges that in certain circumstances, the occurrence of human error is not only feasible but also likely. Personnel are expected to adhere to a professional level of responsibility whereby they acknowledge errors, including those of their own, with the aim of enhancing protocols and preventing future occurrences. It is a common occurrence for individuals, including those who possess a high level of proficiency, to commit certain errors when utilizing systems and equipment, which can be anticipated and inescapable. A non-punitive work environment refers to a setting where employees are not subjected to punishment or retribution for their mistakes or shortcomings. Barghouthi and Imam (2018) acknowledge that individuals should not be penalized for errors that are beyond their control.

A culture that is fair and just involves conducting fact-based assessments, providing effective constructive criticism, and respecting the complexity of the situation. It also entails treating people fairly, engaging in fruitful discourse, and developing efficient systems that enable individuals to admit mistakes and aid the organization in learning from them. When an error occurs, one of the initial phases in the investigation process is frequently root cause analysis (Moreland et al., 2020).

A blame culture is the antithesis of a non-punitive culture. No matter where the errors came from, people who work in an atmosphere where there is a blame culture are responsible for all

mistakes involving the residents they are responsible for. Even though it's often said that "mistakes are bound to happen occasionally," the official response and procedure when a mistake does occur make it abundantly clear that mistakes never should (Bull & Stokes, 2020).

In a workplace with a blaming culture, disciplining and "re-educating" an employee who makes a mistake is the standard approach. This approach creates a workplace where employees are reluctant to acknowledge their mistakes. Employee turnover, staff demoralization, high human resource expenditures for disciplinary actions, and the stifling of innovation and quality enhancement are all effects of this culture (Handriyanto, 2020).

Applying these principles offers the chance to attain the highest degree of excellence while having the biggest influence on the safety of the people being served. In a workplace where the shared goal is the ideal working environment for coworkers and respect, creativity, and teamwork are celebrated, employees can speak up about issues, mistakes, and disagreements. All staff of the organization value the opinions of residents and their families and promote their enjoyment, safety, and outcomes based on individual preferences (Chegini, Kakemam, Asghari Jafarabadi, & Janati, 2020).

3. Staffing

Adequate and secure staffing is imperative for healthcare facilities to operate effectively and provide quality care. Sufficient staffing levels are essential to ensure optimal patient care, while also mitigating worker fatigue, preventing burnout, and enhancing patient satisfaction. The healthcare industry is widely recognized for experiencing a notable deficit in personnel, as evidenced by Stoyanova, Dimova, Tornyova, Mavrov, and Elkova's (2021) findings.

This phenomenon can be attributed to various factors, such as the implementation of cost-reduction strategies and a scarcity of competent healthcare personnel. Empirical evidence has consistently shown that the benefits of maintaining adequate staffing levels in healthcare facilities outweigh the associated costs, as demonstrated by Ulhassan et al. (2015).

Research indicates that there exists a positive correlation between inadequacy of staff and an increased prevalence of infections, patient falls, medication errors, and even mortalities. The reason for missed care in healthcare settings can be attributed to the workload burden on healthcare professionals, who are often required to manage multiple tasks simultaneously, thereby limiting the amount of time they can allocate to individual patients (Bseiso, 2020).

4. Management support for patient safety

A paramount component of superior healthcare is the establishment of a culture that prioritizes patient safety. Healthcare institutions have implemented enhancements to their patient safety management systems and executed various patient safety management endeavors. However, the impact of these measures on PSC remains uncertain. According to Sun and Shen (2017), PSC refers to the amalgamation of personal and collective convictions, attitudes, perceptions, skills, and conduct models that influence an organization's dedication, approach, and proficiency in managing health and safety.

Healthcare managers are obligated by legal and ethical standards to guarantee that patients receive superior healthcare services and to strive towards continuous improvement. The managers possess a favorable position to establish and enforce organizational climates, policies, systems, and procedures. Numerous scholars have contended that healthcare managers hold a pivotal and apparent position in ensuring the standard of care and safeguarding patient well-being, which is deemed as one of their utmost concerns (Brown, 2020).

The available data regarding the actions undertaken by healthcare managers to ensure and improve the quality of care and patient safety, as well as the amount of time dedicated to these efforts, is restricted. Additionally, there is a dearth of research-based guidance provided to managers to assist them in identifying the most effective areas to engage in. Despite the conspicuous absence of a systematic review of the evidence on this topic, Parand, Dopson, Renz, and Vincent (2014) conducted a study that revealed some evidence indicating that the time and work of managers can have an impact on the clinical outcomes, processes, and performance related to quality and safety. The reason for this

could potentially be attributed to the expansive nature of the subject matter, as noted by Parand, Dopson, Renz, and Vincent (2014).

The insufficiency of empirical research is further compounded by the dearth of impartial measures of results and the limited consideration given to the concrete steps implemented. A model is presented to summarize the various factors and actions that impact the quality of performance.

5. Teamwork across and within units

Team-based healthcare refers to the provision of health services to individuals, families, and communities by a minimum of two healthcare providers who work together with patients and their caregivers, as per the patients' preferences, to achieve common objectives within and across various settings, thereby ensuring coordinated and patient-centric care. The significance of efficient collaboration among healthcare professionals is now widely recognized as a crucial element in establishing a more efficient and patient-focused healthcare delivery system. The implementation of accountability and responsibility sharing among team members in healthcare systems yields numerous benefits, as posited by Berry et al. (2020).

In practical application, the implementation of shared accountability in the absence of effective teamwork may result in immediate jeopardy to patient safety. An emerging trend in the healthcare industry involves an escalating number of legal actions taken by patients against healthcare providers due to insufficient communication among medical personnel, patients, and their caregivers. Insufficient communication among team members, even in a highly organized team, can result in unfavorable consequences such as medical errors and "near misses." Furthermore, inadequate team-based healthcare may lead to unnecessary resource utilization. Consequently, the identification of optimal methodologies could potentially mitigate some of these hazards and facilitate effective cost control, as posited by Lamming et al. (2021).

6. Handoffs & transitions

Information that is transferred during changes in a patient's treatment is referred to as a handoff. Providing thorough and accurate information regarding a patient's clinical state, present issues, and

recent and/or upcoming treatments is the goal of a handoff. Errors that result from failing to communicate changes in the patient's state can be avoided with a well-executed handoff. Therefore, the information shared during a handoff needs to be accurate and comprehensive (Lane-Fall et al., 2014).

An information-sharing handoff includes verbal and/or written communication that enables continuity of care. There are many transitions that involve handoffs, such as those from outpatient to inpatient, shift to shift, provider to provider, unit to unit, facility to facility, and inpatient to outpatient. It is the responsibility of programs to (Blazin, Sitthi-Amorn, Hoffman, & Burlison, 2020)**:**

- Create clinical assignments that maximize care transitions in terms of their organization, frequency, and safety.
- Upkeep and dissemination of attending physicians' and residents' current shift schedules.
- Assure continuity of patient care in the event that the resident is too exhausted, unwell, or preoccupied with family matters to fulfill their patient care obligations.
- Check the communication skills of residents and supervisors to ensure smooth handoffs.
- Assure and oversee efficient, structured handoff procedures in collaboration with the institution to promote continuity of care and patient safety. Programs must also recognize high-risk care transitions and design processes accordingly.
- Designate someone in each department to be in charge of overseeing handoffs within that department.

7. Feedback & communication about error

A significant contributing factor to bad occurrences is ineffective or inadequate team member communication, according to the growing corpus of research on safety and error avoidance. Failures in communication increase patient damage, length of stay, and resource utilization in the acute care context, as well as intensify caregiver discontent and hasten staff turnover (Horváth & Richtárik, 2020).

Other researchers have looked at the results of communication and discovered links between improved nurse-physician collaboration and patient outcomes, such as lower mortality, higher patient satisfaction, and lower readmission rates. Effective communication between health care professionals is difficult due to a number of interrelated dynamics (Ali et al., 2018; Hessels, Paliwal, Weaver, Siddiqui, & Wurmser, 2019; Horváth & Richtárik, 2020; Lawati et al., 2018):

- Health care is complex and unpredictable, with professionals from various disciplines involved in providing care at various times throughout the day, often dispersed over several locations, creating spatial gaps with limited opportunities for regular synchronous interaction.
- Care providers frequently have their own disciplinary view of what the patient needs, which can make it difficult for them to coordinate care. Instead of fostering a culture of open, safe communication, this typically results in constraint and restraint in interpersonal interactions (psychological safety).
- Professionals with varying levels of education and training frequently have diverse communication approaches and styles, which further complicates the situation and makes communication ineffective.
- Despite the fact that cooperation and efficient communication are essential for providing patients with safe care, the majority of health care professions' educational curricula place a heavy emphasis on individual technical skills and overlook teamwork and communication.

Numerous organizations exhibit a cultural obstacle that could be associated with the notion that formal training and diligent exertion will yield superior care and flawless execution, without regard for the inherent limitations expounded in the field of human factors science. The impact of human factors on the occurrence of errors has been observed in various intricate settings, including aviation and the medical domain (Lawati et al., 2018). The aforementioned factors encompass cognitive overload, stress-related effects, fatigue, distractions, interruptions, deficient interpersonal communication, erroneous information processing, and suboptimal decision-making. The lack of recognition and comprehension of problems can lead to the utilization of inadequate team-based error

management techniques, thereby fostering a culture of unrealistic expectations and culpability (Campione & Famolaro, 2018).

8. **Overall perceptions of patient safety**

Healthcare organizations, known for their intricate nature, have implemented strategies for enhancing healthcare quality over time. The PSC is indicative of the shared perceptions among healthcare professionals regarding the standards, procedures, and attitudes pertaining to a culture of preventable errors in the delivery of healthcare services. The culture of an organization is influenced by the attitudes and behaviors of individuals in environments that promote health. According to Alquwez et al. (2018), the safety culture of a patient is associated with the sharing of beliefs, values, and attitudes, which in turn affect both the organizational factors and the outcome.

Empirical evidence suggests that a positive correlation exists between elevated PSC and improved patient outcomes. The provision of safe multidisciplinary care to patients is the hallmark of quality hospital services. According to Okuyama et al. (2018), the enhancement of quality can be achieved through the implementation of modifications to both organizational and safety cultures.

In actual practice, medical professionals encounter diverse tasks and challenges within a hospital environment, including but not limited to departments, operating rooms, and laboratories. Their approach to ensuring patient safety may vary depending on the specific circumstances they encounter (Waterson, Carman, Manser, & Hammer, 2019). Hence, it is imperative to comprehend the perspectives and dispositions of diverse hospital personnel concerning patient safety.

2.5 Previous studies:

Worldwide studies

The study of (Nwosu et al., 2022) titled "Patient safety culture in the operating room: a cross-sectional study using the Hospital Survey on Patient safety culture (HSOPSC) Instrument"

This study examined (PSC) in Nigerian teaching hospital operating rooms. The Hospital Survey on PSC (HSOPSC) Instrument was used to survey surgeons. The surgical assessment of (PSC) was modest, with the highest grades in "inter-unit collaboration." "Non-punitive responses to error" and "staffing" scored lowest. The study also found that surgeons were more positive towards PSC. This study helps us understand surgeons' views on (PSC). The PSC's reasonable overall perception highlights the need to improve some domains, particularly non-punitive error replies and staffing. Additionally, past exposure promotes positive views toward PSC. Nwosu and colleagues' (2022) research adds significantly to the literature on (PSC) in operating rooms. This study impacts healthcare facilities in Nigeria and other low- and middle-income nations. Perioperative surgical care (PSC) improvements can improve patient outcomes and safety, according to the research..

The study of (Hunt et al., 2022) titled "Patient safety culture as a space of social struggle: understanding infection prevention practice and PSC within hospital isolation settings - a qualitative study"

The study examined healthcare professionals' experiences with infection control and patient safety in hospital isolation situations. The qualitative study interviewed and observed healthcare workers. The study found that hospital isolation infection prevention was complicated and affected by many factors, including inadequate resources, competing goals, and medical professionals' hierarchical relationships. The study also showed the importance of PSC in hospital isolation infection prevention. The study found that a strong culture of patient safety, characterized by transparent communication, collaborative decision-making, and reciprocal regard among healthcare staff, improved infection

control. Hunt and colleagues (2022) shed light on the challenges of infection prevention in hospital isolation settings and the importance of PSC in promoting safe and effective healthcare. The study's findings can help hospitals improve infection control and patient safety.

The study of (Venesoja, Lindström, Aronen, Castrén, & Tella, 2021) titled "Exploring safety culture in the Finnish ambulance service with the Emergency Medical Services Safety Attitudes Questionnaire"

The present investigation aimed to scrutinize the psychometric properties of the Emergency Medical Services Safety Attitudes Questionnaire (EMS-SAQ) in the context of a Finnish Emergency Medical Services (EMS) setting. The present study examines the correlation between safety attitudes and individual as well as organizational variables within the context of the Finnish Emergency Medical Services. The research methodology employed in this study was a cross-sectional survey. The EMS-SAQ has been established as a dependable instrument for evaluating the safety culture within Emergency Medical Services (EMS) organizations in Finland. It presents a novel approach to appraise the safety of both patients and workers in this context. The findings indicate that safety attitudes are more likely to be influenced by organizational characteristics as opposed to individual characteristics. Consequently, it is recommended that Finnish EMS organizations endeavor to establish a safety culture at the organizational level.

The study of (N. Y. Kim & K. J. Moon, 2021) titled "Factors affecting PSC in terms of compliance with preventing bloodborne pathogens among general hospital nurses"

The objective of this research was to examine the correlation between the safety cultures of nurses and their endeavors to prevent the transmission of bloodborne illnesses among personnel in a non-specialized medical facility. According to the findings of a survey on PSC and bloodborne pathogen prevention, it is imperative to adopt a proactive approach towards needle stick and sharps injury prevention in order to enhance the adherence of general hospital nurses to protocols aimed at preventing bloodborne infections. Ensuring patient safety is a crucial priority that necessitates the

development of diverse programs that emphasize leadership, teamwork, knowledge, and attitude, which must be rigorously evaluated to determine their efficacy.

The study of (Kakemam et al., 2021) titled "Nurses' perception of PSC and its relationship with adverse events: a national questionnaire survey in Iran"

The aim of this study was to assess the correlation between nurses' perceptions of the (PSC) and their estimations of the proportion of adverse events transpiring within the healthcare setting. A survey was carried out on nurses employed in 32 teaching hospitals in Iran, utilizing a cross-sectional research design. Nurses completed the Persian iteration of the hospital survey on primary care services (PSC), revealing unfavorable perceptions of PSC and high perceived incidence of adverse events. The study has additionally exhibited a connection between the perceptions of (PSC) among nurses and the frequency of Adverse Events (AE). Hence, by implementing diverse tactics, such as promoting the disclosure of unfavorable incidents and conducting educational sessions for nurses, administrators can establish the requisite circumstances to augment (PSC) and diminish adverse events.

The study of (Kwan, Seo, & Lee, 2021) titled "The association between experience of hospital accreditation and nurses' perception of the PSC in South Korean general hospitals: a cross-sectional study"

The present research aims to examine the extent to which PSC is perceived by nurses employed in general hospitals in Korea, along with exploring the potential association between nurses' encounters with hospital accreditation and their overall safety outlook. The study utilized a cross-sectional design. The findings of this study suggest a limited association between the evaluations of patient safety by nurses working in general hospitals and their encounters with hospital accreditation. A longitudinal study is necessary to validate the effect of hospital accreditation on nurses' perceived social capital (PSC) in general hospitals.

The study of (Lamming et al., 2021) titled "Fidelity and the Impact of Patient Safety Huddles on Teamwork and Safety Culture: an Evaluation of the Huddle Up for Safer Healthcare (HUSH) project"

Each day, a concise multidisciplinary dialogue known as the Patient Safety Huddle (PSH) is conducted to deliberate on potential hazards to patient safety and devise strategies to mitigate such risks. Although huddles are widely utilized as a means of augmenting safety, there is currently no conclusive evidence to support their efficacy. The aim of this scholarly article is to assess the fidelity, duration of implementation, and impact on the collaborative and safety-oriented culture of the subject under consideration. A comprehensive assessment utilizing various techniques was conducted to evaluate the developmental progress. Patient Safety Huddles (PSHs) have the potential to augment collaboration and foster a culture of safety, specifically within the nursing profession. Possible academic rewrite: To incorporate the elements that frontline employees perceive as most beneficial, it may be necessary to revise the fidelity standards of Permanent Supportive Housing (PSH). Subsequent studies should investigate the variations in TSC outcomes across different disciplines and roles.

The study of (Schmidt et al., 2021) titled "Does interprofessional team-training affect nurses' and physicians' perceptions of safety culture and communication practices? Results of a pre-post survey study"

The objective of this research was to investigate the impact of interprofessional team training on the perceptions of safety culture and communication norms among a select group of nurses and physicians. The results of a pre-post survey analysis revealed elevated mean values across all scales. The study revealed that the communication techniques employed by the clinicians had a significant and positive effect. The relevance of attendance in the communication practices varied across the training sessions. The present research showcases the importance of safety culture attributes in the context of transfer processes. Additionally, it suggests that interprofessional team trainings, involving

a limited number of professionals, can be effectively implemented in clinical settings. Consequently, it is recommended to consider safety culture elements prior to initiating a training intervention.

The study of (Stoyanova et al., 2021) titled "Perception of PSC among Hospital Staff"

The objective of this study was to assess the perceptions of Bulgarian hospital staff towards (PSC) and to investigate potential variations in perceptions between physicians and other healthcare professionals (HCPs). A cross-sectional national survey comprising 384 HCPs was conducted. The results of the study suggest that all participants hold a positive attitude towards PSC. No significant variations were observed between the groups in terms of the mean values and PRRs for the dimensions, irrespective of whether the staff members belonged to the medical profession or other healthcare professions.

The study of (Kobayashi et al., 2021) titled "Challenges for Joint Commission International Accreditation: Performance of Orthopedic Surgeons Based on IPSGs"

To achieve JCI accreditation, orthopedic surgeons are required to undertake several tasks, such as patient identification, preoperative timeout and marking to ensure proper surgery, timely approval of CT/MRI reports, pain management, infection prevention, setting of quality indicators and daily monitoring, and teamwork. The Joint Commission International (JCI) assessors conducted an evaluation of patient records, administrative documents, and personnel interviews with healthcare professionals, such as physicians and nurses, at our medical facility. The hospital underwent a comprehensive evaluation process that encompassed 1270 assessment items across 16 distinct domains. The institution's pursuit of JCI accreditation, with the aim of becoming the first national university hospital in Japan to achieve this recognition, yielded significant enhancements in patient safety and the quality of medical services provided.

The study of (Granel et al., 2020) titled "Nurses' perceptions of patient safety culture: a mixed-methods study"

The objective of the research was to investigate the perception of (PSC) among nursing personnel in two publicly funded hospitals located in Catalonia, Spain. The study utilized a mixed-methods approach that incorporated a questionnaire, in-depth interviews, and non-participant observations. The findings indicated that a majority of the nursing personnel, specifically 62%, evaluated patient safety as "Acceptable". However, this rating did not surpass the aforementioned level due to the presence of work pressure and a perceived inadequacy of resources. The category of "Teamwork within units" received the highest proportion of favorable responses, while "Staffing" garnered the lowest. The emergency units exhibited a higher frequency of unfavorable outcomes compared to the remaining two units. The underreporting of safety incidents can be attributed to the apprehension of retribution, indicating a deficiency in fostering a constructive safety culture. In order to prevent punitive reactions, it is imperative to formulate and execute tactics that foster a favorable culture.

The study of (Palmieri et al., 2020) titled "Hospital survey on PSC (HSOPSC): a multi-method approach for target-language instrument translation, adaptation, and validation to improve the equivalence of meaning for cross-cultural research"

The objective of this research endeavor was to develop a Hospital Survey on PSC (HSOPSC) in the target language, with the purpose of facilitating cross-cultural investigations in Peru. The present study's mixed-methods approach entailed a modification of the translation guideline recommended by the Agency for Healthcare Research and Quality. The research findings indicate that the HSOPSC tool developed for Peru exhibited notable dissimilarities when compared to the other Spanish-language iterations. Notwithstanding the novel linguistic and distinct cultural milieu, the ultimate outcomes possessed an equivalent significance to the source material. The analysis revealed that the translation of negatively worded items into the target language posed a challenge. Additional research is necessary to evaluate this discovery and the proposal to incorporate negatively phrased items in

measures, as there is limited data on negatively formulated items in the realm of cross-cultural investigation.

The study of (Tlili, Aouicha, Dhiab, & Mallouli, 2020) titled "Assessment of nurses' PSC in 30 primary healthcare centers in Tunisia"

The aim of this study is to assess the PSC among nurses and determine the factors that contribute to it in basic healthcare facilities located in Tunisia. In this cross-sectional descriptive study, conducted across 30 primary healthcare centers in Tunisia, the Hospital Survey on Primary Care (PSC) questionnaire, which had been validated in French, was utilized. As per the data, the dimension of "teamwork within units" attained the highest score of 70.6%. The safety dimensions of "frequency of incident reporting" (27.6%), "staffing" (34.76%), and "non punitive response to errors" (36.5%) were rated as suboptimal. The study revealed that PSC was associated with two distinct attributes, namely involvement in risk management committees and the geographical placement of the primary care facility. The research revealed that there is a need for improvement in the PSC among nurses in primary healthcare facilities in Tunisia. Strategies aimed at promoting a culture of patient safety should prioritize the development of leadership capacity that cultivates open communication, a blameless environment, teamwork, and continuous organizational learning. The present study focuses on the role of nurses in promoting patient safety within the context of primary care and public health. Specifically, the study examines the PSC within these settings and the ways in which nurses can contribute to its improvement. The study underscores the importance of nurses' active engagement in patient safety initiatives and the need for a collaborative approach to enhancing patient safety outcomes.

The study of (Chegini et al., 2020) titled "The impact of PSC and the leader coaching behaviour of nurses on the intention to report errors: a cross-sectional survey"

The objective of this research was to examine the factors that impact the propensity of nurses to report errors. The present investigation adopted a cross-sectional design. The results of the study indicate

that a significant proportion of nurses, specifically 43%, expressed their intention to report errors. Additionally, half of the participants reported that their nursing supervisors demonstrated proficient coaching abilities. The PSC exhibited strengths in the domain of "teamwork within units," while weaknesses were observed in the area of "non-punitive reaction errors." The findings of the regression analysis indicated a significant association between the inclination to report errors and the culture of patient safety, coaching behavior of leaders, and educational attainment of nurses. Further investigation is necessary to ascertain the potential efficacy of interventions targeting leader coaching behaviors and psychological safety climate in enhancing the propensity to report errors.

The study of (Kim & Lee, 2020) titled "The relationship between the perception of open disclosure of patient safety incidents, perception of patient safety culture, and ethical awareness in nurses"

The objective of this research was to examine the influence of (PSC) and ethical awareness on the transparency of Patient Safety Incidents (PSIs) through open disclosure. Data was collected from nurses using self-reported measures of PSC, open disclosure of patient safety incidents, and ethical awareness. The results indicate a significant association between an individual's ethical consciousness and their perception of (PSC), as well as their perception of the transparency of disclosing Patient Safety Incidents (PSIs). Ethical awareness was found to have the most significant impact on the perception of Patient Safety Indicators (PSIs). Additionally, two components of PSC, namely general patient safety knowledge and staffing, were also observed to have a significant impact on PSIs. The implementation of educational curricula and programs that teach and apply fundamental ethical principles is necessary to enhance nurses' attitudes towards the transparent communication of Patient Safety Incidents (PSIs). Furthermore, it necessitates the implementation of a legally binding safeguard and the advocacy of a (PSC) to foster the transparent communication of Patient Safety Incidents (PSIs) to individuals seeking medical care. Efforts from healthcare institutions, governmental bodies, and the general public are necessary to accomplish this task.

The study of (Ananya et al., 2019) titled "A Study on Adherence to IPSGs in a Tertiary Care Cardiac Centre in India"

The objective of the research was to assess the degree of compliance of medical and paramedical practitioners with the IPSGs. Furthermore, an assessment is necessary to determine the level of awareness among hospital personnel regarding the objectives, as well as the effectiveness of medical and paramedical staff in executing said goals. The present study adopts a cross-sectional research design. The study's results indicate that doctors demonstrate the greatest degree of comprehensive adherence, with a rate of 72%, trailed by nurses at 69%, and paramedics at 68%. The observation was made that the failure of staff members to adhere to the objectives was often attributable to a confluence of factors, including deficiencies in knowledge and heightened work demands that impeded successful execution. The non-compliance of doctors and other medical professionals has been attributed to a dearth of training opportunities, as reported by these professionals.

The study of (Bader, Kusynová, & Duggan, 2019) titled "FIP Perspectives: Realizing global patient safety goals requires an integrated approach with pharmacy at the core"

The prioritization of patient safety is increasingly acknowledged as a crucial area of focus that necessitates a collaborative and collective endeavor. Errors in medication administration are the primary cause of harm or self-inflicted harm among individuals within healthcare systems. The crucial nature of pharmacists' involvement in upholding patient safety cannot be overstated. Pharmacists bear the responsibility of safeguarding patients against potential harm or fatality resulting from the administration and utilization of medication. The International Pharmaceutical Federation (FIP) recognizes the pivotal function that pharmacies fulfill in attaining patient safety objectives at the regional, national, and international levels. The FIP engages in collaborative efforts with various partners, stakeholders, and members across the globe to champion the significance of pharmacies in promoting the global patient safety agenda. The organization envisions a world where individuals can safely access healthcare and medications.

The study of (Titlestad, Haugstvedt, Igland, & Graue, 2018) titled "PSC in nursing homes – a cross-sectional study among nurses and nursing aides caring for residents with diabetes"

The objective of this research was to examine the correlation between nursing personnel's perceptions of person-centered care (PSC) in nursing homes and their professional background, educational attainment, familiarity with their diabetic residents, and knowledge of clinical diabetes guidelines for the elderly. The investigation utilized a cross-sectional survey design. The findings of this investigation indicate a correlation between higher education levels and knowledge of contemporary diabetic protocols, as well as proficient evaluations of critical aspects of (PSC) in long-term care facilities.

The study of (Aguiar et al., 2017) titled "Nursing and international safety goals: hemodialysis assessment"

The objective of the present investigation was to delineate the nursing interventions dispensed at a hemodialysis healthcare facility in compliance with worldwide benchmarks for ensuring patient safety. A descriptive investigation was conducted at a hemodialysis facility situated in a public hospital in Brazil. Data was collected through various methods including interviews, observation, and a checklist that was designed based on the safety objectives of the Joint Commission International. The identified objectives that were deemed compliant included enhancing communication efficacy, mitigating healthcare-associated infections, and reducing the likelihood of patient harm resulting from falls. The study team and the evaluated institution ought to concentrate their endeavors on the outstanding objectives, which comprise precise patient identification, fortifying the safety of high-alert medications, and guaranteeing secure surgical procedures.

The study of (Sun & Shen, 2017) titled "The application of patient safety goals in nursing management at health management center"

As part of a study aimed at examining the application and impact of IPSGs in nursing management at a health management center under the standard of the American Joint Commission on Accreditation

of Healthcare Organizations, six patient safety goals from the Joint Commission International (JCI) standard were implemented in nursing management at the center. Conduct a comparative analysis of relevant nursing safety monitoring indicators and customer satisfaction within a period of one year prior to and one year subsequent to the adoption of the JCI standard. The study's results indicate that the effective implementation of patient safety goals in accordance with JCI standards can positively impact nursing management by promoting scientific, standardized, orderly, and detailed practices. Additionally, this approach can optimize nursing work processes, standardize operations, mitigate nursing risks, and improve nursing quality. Ultimately, these outcomes can lead to increased patient satisfaction and trust.

Regional Studies

The study of (Filiz & Yeşildal, 2022) titled "Turkish Adaptation and Validation of the Revised Hospital Survey on Patient Safety Culture (TR – HSOPSC 2.0)"

This study examines the accuracy and reliability of the Turkish HSOPSC 2.0 in Turkish healthcare facilities. The study found that the Turkish scale met linguistic and content validation requirements. The confirmatory factor analysis showed that the original scale fit the 32-item, 10-subscale scale. The subscales have 0.72–0.82 Cronbach's alpha coefficients. Turkish Hospital Survey on PSC psychometric validity and reliability are strong.

The study of (Kakemam et al., 2022) titled "patient safety culture in Iranian teaching hospitals: baseline assessment, opportunities for improvement and benchmarking"

Nurses evaluated the PSC at Iranian teaching hospitals in this study. 32 educational medical centers in five Iranian provinces were examined cross-sectionally. The mean percentage of yes responses for each dimension ranged from 27.1% for "Staffing" to 53.8% for "Teamwork across Hospital Units." A benchmarking analysis found that Iranian hospitals outperform regional and worldwide statistics on various composites. The multiple linear regression analysis showed that age, gender, total nursing

experience, work area or unit, work hours, and hospital size were significant determinants of nurses' PSC perceptions.

The study of (Hafezi, Babaii, Aghaie, & Abbasinia, 2022) titled "The relationship between PSC and patient safety competency with adverse events: a multicenter cross-sectional study"

The objective of this investigation was to scrutinize the interconnections among patient safety proficiency, patient safety atmosphere, and unfavorable occurrences as perceived by nursing professionals. A cross-sectional study was carried out. Distinct questionnaires were employed to assess PSC, patient safety competency, and adverse events. The study's authors have demonstrated a correlation between adverse events (AEs) and certain attributes of patient safety expertise and culture, as they had previously postulated. Further research is required to validate these results and identify measures that can mitigate the incidence of adverse events, taking into account its social, cultural, and political milieu rather than solely as an epidemiological enigma.

The study of (Kalsoom et al., 2022) titled "What really matters for patient safety: Correlation of nurse competence with IPSG's"

The primary objective of this investigation was to evaluate the correlation between the proficiencies of general ward nurses and the overarching patient safety goals. The study employed a correlational research methodology. The study employed stratified random sampling to recruit a total of 182 nurses from two hospitals, one of which was JCIA-accredited while the other was not. The data was collected through the utilization of IPSGs and the Competency Inventory for Registered Nurses. The study received approval from both the institutional review board and ethical committee. The results of the study suggest that enhancing patient safety necessitates nurses to possess robust clinical competencies. The demographic and professional characteristics of healthcare professionals have an impact on nursing competencies and patient safety. In order to enhance patient safety through the improvement of nursing skills, it is recommended that hospital management implement specific measures.

The study of (ALFadhalah et al., 2021) titled "Baseline assessment of PSC in primary care centers in Kuwait: a national cross-sectional study"

The present investigation scrutinized the PSC of Primary Health Care Centers in Kuwait and conducted a comparative analysis of the findings with those of other nations and regions. This study also examined the correlation between predictors and PSC outcomes in various contexts. The study employed a quantitative cross-sectional design for data analysis. In comparison to global and local research, the benchmarking analysis indicated that Kuwaiti centers demonstrated performance at or above benchmark levels on four and six composites, respectively. The regression modeling technique was utilized to highlight noteworthy forecasts concerning patient safety outcomes and composites. The research findings indicate that in order to enhance the quality and safety of healthcare services provided by these establishments, it is imperative to reinforce the culture of patient safety. The findings of this investigation may function as a guide for governmental strategies in establishing regulatory structures for patient safety protocols.

The study of (Saaid, Abdalla, & Elmagd, 2020) titled "Effect of Applying a Training Program about IPSGs on Patient's Safety Culture"

The study conducted by Rajhy Liver Hospital, Assiut University aimed to assess the influence of a training program centered on global patient safety objectives on the safety culture of patients. The present study employed a quasi-experimental design to conduct the investigation. The study's results indicate a significant statistical difference, demonstrating a robust positive correlation between the management of the PDCA model by head nurses and the implementation of global patient safety objectives, thereby influencing the safety culture of patients. The research findings indicate that the implementation of a training program resulted in a significant enhancement of head nurses' ability to manage the application of global patient safety goals utilizing the PDCA model. It is recommended that all head nurses and staff nurses within the study environment engage in continuous training and

development activities pertaining to global patient safety objectives. Furthermore, these recommendations should be extended to comparable settings.

The study of (Omer, Al-Rehaili, Al-Johani, & Alshahrani, 2018) titled "Residents' Awareness about IPSGs, Cross Sectional Study"

The aim of the present investigation was to assess the level of comprehension among residents regarding the six Infection Prevention and Safety Goals (IPSGs) mandated by the Joint Commission International Accreditation (JCIA). A cross-sectional study was conducted utilizing a self-administered questionnaire. A cohort of 100 residents at King Fahad Medical City, possessing diverse levels of training and specialties, were administered a set of closed-ended questions (KFMC). The results of the study suggest that a significant proportion of the populace, approximately 90%, possesses knowledge regarding the existence of IPSGs (IPSGs), which are accompanied by multiple rating mechanisms for each objective. The results indicate that a significant proportion of the population residing in KFMC possess knowledge regarding the IPSGs and its constituent elements. Additional efforts are necessary to narrow the divide and ensure optimal provision of care within secure establishments.

The study of (Mahjoub et al., 2016) titled "PSC Based on a Non-punitive Response to Error and Freedom of Expression of Healthcare Professionals"

The aim of the study was to assess the degree of compliance of the medical personnel at Farhat Hached University Hospital in Sousse, Tunisia, with the "freedom of expression and non-punitive response to error" principle of PSC. The aforementioned notion serves as the fundamental basis for fostering a culture of patient safety within the medical community and is a crucial component of any plan aimed at enhancing quality. A cross-sectional study was conducted. According to the results, the aggregate score for the degree of liberty in expressing oneself and the tolerant approach towards mistakes was 60.5%. A significant proportion of participants (71.2%) engaged in a discussion regarding the various techniques that can be employed to mitigate errors. Approximately 49.10% of

the participants expressed a sense of constraint in expressing dissenting opinions towards their superiors' decisions or behaviors.

The study of (Al-Nawafleh et al., 2016) titled "PSC in Jordanian Hospitals"

The objective of this investigation was to assess the efficacy of the PSC as an initial measure in enhancing patient care quality and reducing error rates in service provision. For the purposes of this study, the Hospital Survey on PSC (HSOPSC) was utilized and subsequently translated into the Arabic language. Following a pilot study conducted on a sample of 287 participants at a public hospital in Jordan, the instrument was determined to possess validity and reliability. The results of this investigation indicate that healthcare personnel in Jordanian medical facilities hold a positive view of the Patient Satisfaction Committee (PSC). The aspect that received the most recognition was "Collaboration among groups." The aspect that received the lowest level of approval was the implementation of a non-punitive approach towards errors. This may imply that the hospital administration lacks sufficient dedication to improving patient safety, thereby impacting the staff's perception of the matter. The research findings indicate that ensuring patient safety remains a global concern that necessitates attention from both developed and developing countries. It is imperative for healthcare organizations to prioritize the measurement of safety culture as it provides a fundamental understanding of how their personnel perceives safety. Safety culture evaluation tools can assist healthcare organizations in identifying areas that require improvement. Policymakers in Arab nations should establish a workplace culture that promotes reporting of negative occurrences, mistakes, incidents, or near misses by employees, in order to facilitate learning from such experiences and promote fairness. It is imperative to conduct periodic assessments of safety culture to evaluate the efficacy of patient safety initiatives and programs. It is imperative for healthcare leaders, researchers, and policymakers in the Arab region to comprehend the gravity of patient safety as a critical public health concern that results in fatalities.

National Studies

The study of (Zabin et al., 2022) titled "patient safety culture in Palestine: university hospital nurses' perspectives"

This study examined Palestinian university hospital nurses' patient safety culture (PSC) experiences. Focus group conversations with 27 nursing professionals were used to acquire qualitative data. The study found that nurses understood (PSC) and understood the importance of patient safety. Staffing, communication, and collaborative work procedures affected nurses' impressions of (PSC). Insufficient personnel, correspondence, and teaching hindered nursing staff's PSC advancement, according to the inquiry. This study illuminates Palestinian university hospital nurses' perspectives on (PSC). The findings emphasize the need of addressing nurses' PSC challenges, such as staffing, communication, and training. Palestinian and other low- and middle-income healthcare institutions will be affected by the research. The findings suggest Palestinian hospitals should improve PSC. Such measures may improve patient outcomes and safety. Given nurses' crucial role in patient safety, the research emphasizes the need of addressing nurses' PSC advocacy challenges. Zabin et al. (2022) adds to the literature on Primary Service Care (PSC) in Palestinian university hospitals. The study's conclusions affect regional and global healthcare organizations.

The study of (Abu-Hamad et al., 2016) titled "Assessment of patient safety culture in the Gaza strip hospitals"

Abu-Hamad et al. (2016) examined (PSC) in Gaza Strip hospitals. The Hospital Survey on PSC (HSOPSC) Arabic questionnaire was used to survey healthcare professionals in six medical facilities. Hospitals showed moderate perception of (PSC). "Teamwork within units" scored best, while "staffing" and "non-punitive responses to errors" scored lowest. The study also found that experienced healthcare professionals had more positive views of PSC. The survey sheds light on Gaza Strip hospital staff's PSC attitudes. Staffing and non-punitive error handling need improvement due to the PSC's modest overall assessment. Additionally, past exposure promotes positive views toward PSC.

The research affects Gaza Strip and other low- and middle-income healthcare establishments. The results suggest improving (PSC) in Gaza Strip hospitals. Patient safety and outcomes may improve. The research emphasizes the need of staffing issues and a non-retributive response to mistakes to improve (PSC). Abu-Hamad et al. (2016) adds to the knowledge of (PSC) in Gaza Strip hospitals. This study has significant implications for regional and national healthcare providers.

The Paper by Hamdan and Saleem (2018) titled "Changes in patient safety culture in Palestinian public hospitals: impact of quality and patient safety initiatives and programs"

Hamdan and Saleem (2018) examined Palestinian public hospital PSC changes and quality and patient safety efforts. Patient safety is vital to healthcare, and a culture of patient safety is essential to improving it. This study examines how quality and patient safety measures affect patient safety in Palestinian public hospitals. A survey questionnaire assessed patient safety culture in 18 publicly financed Palestinian healthcare facilities. The investigation was conducted before and after quality and patient safety programs. Quality and patient safety programs improved patient safety culture, according to the research. The study found that quality and patient safety activities improve healthcare organizations' PSC. The research underlines the importance of quality and patient safety strategies to improve patient safety in healthcare organizations. Quality and patient safety programs in healthcare institutions aim to improve care and protect patients. Staff training, patient safety regulations, and event reporting systems are possible measures. The paper stresses the need of healthcare organizations prioritizing patient safety and investing in quality and safety programs. The authors recommend that healthcare facilities foster a safety-focused culture, promote open communication, and continuously improve patient safety. Hamdan and Saleem (2018) shed light on how quality and patient safety efforts affect PSC in Palestinian public hospitals. The research underlines the importance of investing resources to quality and patient safety initiatives to promote patient safety in healthcare organizations. This study's findings could improve patient safety and create a safety-focused healthcare environment worldwide.

The study by (Najjar et al., 2015) titled "The relationship between patient safety culture and adverse events: a study in Palestinian hospitals"

Najjar and colleagues (2015) examined PSC and bad events in Palestinian healthcare facilities. The healthcare business prioritizes patient safety, and adverse occurrences can harm individuals and their health. This study examines how PSC reduces adverse events and improves patient outcomes. Six West Bank and Gaza Strip hospitals conducted the research. A survey assessed patient safety culture and adverse events. Patient safety culture was linked to hospital occurrences in the study. The study found that promoting patient safety could reduce adverse events and improve patient outcomes. The study stresses patient safety culture in healthcare institutions. PSC refers to the core beliefs, convictions, outlooks, and behaviors that protect institutional patients. Positive PSCs encourage open communication, teamwork, and a commitment to patient safety. This culture may improve patient outcomes and reduce adverse occurrences. The article emphasizes the need for healthcare facilities to improve patient safety. The authors suggest healthcare institutions evaluate their PSC, identify areas for improvement, and develop strategies to address them. Educating staff, documenting negative events, and encouraging open communication are possible measures. In summary, Najjar et al. (2015) shed light on the relationship between PSC and adverse events in Palestinian hospitals. The study emphasizes the need of promoting a patient safety culture and improving patient safety in healthcare facilities. This research could improve patient safety and reduce adverse events in healthcare facilities worldwide.

Discussion of previous studies

The objective of this investigation was to assess the efficacy of implementing the IPSGs (Identify Patients Correctly, Improve Effective Communication, Improve the Safety of High-Alert Medications, Ensure Safe Surgery, Reduce the Risk of Health Care-Associated Infections, and Reduce the Risk of Patient Harm Resulting from Falls) in enhancing PSC in Palestine. The IPSGs by the JCI were utilized in line with previous research studies (Abd El Hamid et al., 2021; Abe & Tuppal,

2018; Aguiar et al., 2017; Ananya et al., 2019; Gamal Attia, Saeed Ahmed, & Moustafa Safan, 2021; Kalsoom et al., 2022; Kobayashi et al., 2021; Omer et al., 2018; Sun & Shen, 2017; Vieira et al., 2022). Additionally, the HSOPSC was employed to measure safety culture, consistent with prior research studies (Abu-Hamad et al., 2016; Al-Nawafleh et al., 2016; ALFadhalah et al., 2021; Granel et al., 2020; Kakemam et al., 2022; N. Y. Kim & K. J. Moon, 2021; Nwosu et al., 2022; Palmieri et al., 2020; Stoyanova et al., 2021).

The researcher's investigation into the relationship between IPSG and PSC revealed limited scholarly inquiry, with only a few studies, including those conducted by Abd El Hamid et al. (2021), Abousallah (2018), and Saaid et al. (2020), exploring this connection. Therefore, this study represents a valuable contribution to the literature as one of the few inquiries into this relationship and the sole investigation conducted in Palestine, to the best of the researchers' knowledge.

Chapter three

Research methodology

Overview

In this chapter, the researcher describes the research design, sampling and population, the research instrument and tools used for data collection, and the data analyses of this research in order to get the answers to the questions and the hypotheses validity of this research.

3.1 Research design

The researcher adopted in this study a cross-sectional approach as this approach is more coherent and suitable to follow the nature of the research objectives; a quantitative research method (the questionnaire) was selected as one of the tools that could be used to collect numerical data and illustrate a specific phenomenon, (Singh, 2007).

The quantitative approach helps the researcher describe and evaluate the reality of "The impact of Implementing International Safety Goals on PSC among Palestinian Healthcare Professionals". This approach also helps the researcher compare, interpret, and assess the current situation in the hope of reaching generalizations that have meaning and increase knowledge on the research subject.

3.2Study population

The target population consisted of all the medical staff in all hospitals in the West Bank of Palestine. The number of hospitals is 54, and the number of medical staff according to the 2021 Palestinian healthcare annual report is 29236, (MOH, 2022).

3.3Sampling frame

The sampling frame for this study included the following hospitals (Table 3.1), which are distributed all over the WB, including governmental and private ones. These hospitals are representative of all hospitals in the WB. The samples are taken from these hospitals.

Table (3.1)

Sampling Frame

#	Hospital	Number of staff
1	Tulkarm Hospital (Thabit Thabit)	302
2	Rafedia Hospital	513
3	Palestine Medical Complex	857
4	Jenin Hospital	750
5	Istishari Hospital	450
6	Ibn Sena Hospital	253
7	Alnajah Hospital	431
8	Alisra Hospital	181
9	Alia Hospital	602
10	Al-Ahli Hospital	861
	Total	5200

3.4Study sample

A convenience sampling mechanism was selected for this study. This mechanism provides an equal opportunity of selection from the selected population; this is a guarantee that the researcher obtained an unbiased representative sample, and proves that the researcher has no intensions of choosing specific samples in this study.

The sample of this study was conveniently selected from the medical staff working in the selected hospitals; the study used (Sekaran & Bougie, 2016) sample tables to determine the sample size, and 380 questionnaires were distributed among the 10 selected hospitals for the sample frame as follows:

Proportional sample percentage according to the sampling frame distribution:

380/5200 = 7.3% of each hospital selected for the study.

Table (3.2)

Study Samples Proportionate to Staff Counts in Hospitals

#	Hospital	Number of staff	Sample %	Sample size
1	Tulkarm Hospital (Thabit Thabit)	302		22
2	Rafedia Hospital	513		38
3	Palestine Medical Complex	857		63
4	Jenin Hospital	750		55
5	Istishari Hospital	450		33
6	Ibn Sena Hospital	253	7.3%	18
7	Alnajah Hospital	431		31
8	Alisra Hospital	181		13
9	Alia Hospital	602		44
10	Al-Ahli Hospital	861		63
	Total	5200		380

3.5Study procedures

The study followed these procedures:

1. Writing thesis proposal and requesting approval from the Faculty of Graduate Studies to start the study.
2. Designing the data collection tool & ensuring the validity of the questionnaire by recognized researchers.
3. Taking permission from the Faculty of Graduate Studies to distribute the questionnaire.
4. Identifying and selecting the samples for the study for the purpose of completing the designed questionnaire.
5. The researcher distributed copies of the questionnaire among the staff of the targeted hospitals.

6. Writing & completing the theoretical framework and the literature review of this study.

7. After receiving the completed questionnaire, the data were entered into SPSS and Smart PLS3.

8. Analyzing data statistically using Smart PLS3.

9. Completing & writing up the thesis, including the study outcomes, conclusion & recommendations.

3.6 Data collection

In order to achieve the research objectives, the researcher collected two types of data: primary and secondary resources. The primary resources were collected by designing a structured questionnaire depending on previous research, which is explained in detail in Section (3.6). The questionnaire was distributed by hand among the staff of the targeted hospitals in the West Bank and collected on the same day.

3.7Study instrument

A structured questionnaire was developed to collect data from the 10 selected hospitals operating in the West Bank. The questionnaire included different sections that were answered by respondents; some questions were related to the respondent's demographic information, and the others related to the independent and dependent variables.

The questionnaire was chosen for this study because it is a reliable and quick method to collect information from a large number of respondents in an efficient and timely manner. The research variables in the questionnaire were measured using a 5-point Likert scale consisting of points 1-5 as follows: 1= Strongly Disagree; 2= Disagree; 3= neutral; 4= Agree; 5= Strongly Agree.

The questionnaire consists of 83 questions divided into 3 main parts as follows:

- **Part one:** General information related to the respondents' information, including gender, age, educational qualification, career experience, specialty, department of work, quality department, infection control officer, infection control surveillance system, and accreditation. This part consists of 11 questions.
- **Part two:** To measure the degree of application of the IPSGs. This part consists of 32 questions divided into six goals (WHO, 2016).
- **Part three:** To measure the degree of the patient safety culture. This part consists of 39 questions divided into eight sections derived from the hospital survey on PSC (HSOPSC) (Palmieri et al., 2020).

3.8 Questionnaire validity

Validity is the "degree that an instrument measures what it should measure" (Zikmund, Babin, Carr, & Griffin, 2012). Validity has a variety of assessment approaches and aspects. Statistical validity is used to check instrument validity, which might be internal or external (Easterby-Smith, Thorpe, & Lowe, 2002).

To guarantee a good level of validity, the questionnaire was given to four experts from local universities and hospitals for review. The list of arbitrators included the director of the quality department in the Arab Hospitals Group, a professor and associate professor from Al-Quds University, and an assistant professor from Palestine Polytechnic University (see Appendix 2). They kindly gave their opinions on the content and clarity of the questionnaire. The final questionnaire copy was modified according to their recommendations. The researcher had modified and added necessary parts to the questionnaire in response to the arbitrators' comments and feedback, and accordingly, the questionnaire was finalized as in Appendix (1).

3.9Questionnaire reliability

To measure the degree of the questionnaire's reliability, it was tested by using Cronbach's alpha formula, as an indicator of measuring the consistency of the questionnaire as a whole (Table 3.3). The results are presented in the table below.

Table (3.3)

Cronbach's Alpha Coefficient

Factor	Number of Questions	Cronbach's Alpha
Identify patients correctly	4	0.790
Effective communication	4	0.842
Safety of the high alert medication	9	0.860
Correct procedures and surgery	4	0.802
Reduce healthcare -associated infection	7	0.825
Reduce the harm from fall	4	0.835
International patient safety goals	**32**	**0.940**
Supervisor/Manager Expectations & Actions Promoting Patient Safety	3	0.823
Organizational Learning—Continuous Improvement	4	0.814
Non punitive Response to Errors	3	0.710
Staffing	3	0.763
Management Support for Patient Safety	3	0.768
Teamwork Across and within Units	7	0.880
Handoffs & Transitions	4	0.759
Feedback & Communication About Error	9	0.855
Overall Perceptions of Patient Safety	3	0.850
Patient Safety Culture	**39**	**0.953**

Source: Researcher Analysis using SPSS

The data collected and tested in table (3.3) shows that Cronbach's alpha value for the IPSGs is (0.940) and for the PSC is (0.953), which according to Pandey & Pandey (2021) indicates high reliability for the entire questionnaire. All other items were above 0.71, which is also a good indicator for good reliability (Pandey & Pandey, 2021).

3.10 Statistical methods

According to Hair Jr et al., (2016), Structural Equation Modeling (SEM) is a highly effective method for evaluating multi-variable models. This is due to its ability to simultaneously examine the relationships between variables and assess the degree to which the proposed model aligns with the collected data, as indicated by various conformity indicators. The present study employed Smart-PLS3 software to evaluate the suitability of the model for the sample data. The evaluation of two components of the model was conducted utilizing Smart-PLS3 in the subsequent manner:

1. **The measurement assessment:** which is a constituent of the structural equation model, pertains to the research variables and indicators. It establishes the connections between the observed variables, such as indicators or questions, and the unobserved or latent variables. Additionally, it characterizes the validity and consistency of the observed variables.

The study adopted the following statistical tools to measure the external model (Easterby-Smith et al., 2002; George, 2003; Zikmund et al., 2012):

- **Cross loading:** "Examines that the loading of an indicator on its assigned latent variable should be higher than its loadings on all other latent variables".
- **Composite reliability**: "To test the reliability of the questionnaire, which must be greater than (0.7)".
- **Average Variance Extracted (AVE):** "It examines the correlations between the constructs".
- **Discriminant validity:** Despite the fact that there is no set value for discriminant validity, a result of less than 0.70 indicates that there is probably discriminant validity between the two scales. However, a result higher than 0.70 indicates that the two conceptions have a significant overlap and are probably measuring the same thing; therefore, discriminant validity between them cannot be claimed (Campbell & Fiske, 1959).

2. **Structural assessment (internal model):** is the structural equation model component that deals with research variables and indicators, ties observed variables (indicators or questions)

to unobserved (latent) variables, and describes the validity and consistency of observed variables. The study assesses the structural model's outcomes after accepting the conclusions of the measurement model's convergent validity. Studying the model's propensity for prediction as well as the relationships between the research variables is necessary for this. The structural model should be assessed using a set of criteria that have been put to the test. Coefficient of determination (R2), effect size (f2), predictive relevance Q2, goodness of fit of the model (GoF), and hypothesis testing are the fundamental standards for evaluating the structural model. Table 4.2 shows the criteria for the structural model assessment.

The study adopted the following statistical tools to estimate the internal model (Easterby-Smith et al., 2002; George, 2003; Zikmund et al., 2012):

- **The R-squared value (R^2):** "It represents the proportion of variation in the dependent variable(s) that can be explained by one or more predictor variables".
- **Assessment of Effect Size (f^2)**: "Measuring the effect size indicates the relative effect of a particular exogenous latent variable on endogenous latent variable(s) by means of changes in the R-squared".
- **Q^2**: Testing Predictive Relevance.
- **Goodness of Fit of the Model (GoF)**: The goal of GoF is to account for the research model at both the structural and measurement levels, with an emphasis on the model's overall performance (Esposito Vinzi, Chin, Henseler, & Wang, 2010; Hair Jr et al., 2016), The GoF calculating formula is as follows:

$$GoF = \sqrt{(\overline{R^2} \times \overline{AVE})}$$

The criteria of GoF to determine whether GoF values are large, small, medium, or no fit to be considered as a global valid PLS model were given by Henseler & Sarstedt (2013).

- **T value:** "is used to determine whether a specific association is significant or not, depending on the significance value".

- Structural Equation Models (SEM).

Table (3.4) shows the criteria for structural model assessment:

Table (3.4) Criteria for Structural Model Assessment

	Range	**Value**
Coefficient of determination R^2	above 0.67	high
	between 0.33-0.67	moderate
	between 0.19-.033	weak
	below 0.19	not acceptable
Effect size f^2	above 0.35	large effect size
	between 0.15-0.35	Medium effect size.
	Between 0.02-0.15	small effect size
	less than 0.02	NO effect size
Predictive Relevance Q^2	more than zero	has predictive relevance
Goodness of Fit of the Model (GoF)	less than 0.1	No fit
	between 0.1 to 0.25	Small
	between 0.25 to 0.36	Medium
	greater than 0.36	Large

Source: (Cohen, 1988)

3.11 Model estimation

The Smart PLS3 software was used to analyze the PLS path model. The results of the calculation of the PLS algorithm show the independent variables, dependent variables, relationships between variables, and all variable indicators.

Assessment of reflective/ formative measurement models

This includes composite reliability assessments for internal consistency, external loading of indicators for the reliability of individual indicators, average variance extracted (AVE) to evaluate

convergent validity, the Fornell-Larcker criterion, and cross loads to evaluate the validity of discriminates (Easterby-Smith et al., 2002; George, 2003; Zikmund et al., 2012).

The research model was constructed from a number of independent and dependent variables. Each variable is made up of several indicators, as shown in Table 3.5:

Table (3.5)

Variables and Indicators in the Conceptual Model

Variable	Indicator
IPSGs	**G (1-6)**
Identify patients correctly	G1.(1-4)
Effective communication	G2.(1-4)
Safety of the high alert medication	G3.(1-9)
Correct procedures and surgery	G4.(1-4)
Reduce healthcare -associated infection	G5.(1-7)
Reduce the harm from fall	G6.(1-4)
Patient Safety Culture	**C (1-9)**
Supervisor/Manager Expectations & Actions Promoting Patient Safety	C1.(1-3)
Organizational Learning—Continuous Improvement	C2.(1-4)
Non punitive Response to Errors	C3.(1-3)
Staffing	C4.(1-3)
Management Support for Patient Safety	C5.(1-3)
Teamwork Across and within Units	C6.(1-7)
Handoffs & Transitions	C7.(1-4)
Feedback & Communication About Error	C8.(1-9)
Overall Perceptions of Patient Safety	C9.(1-3)

Source: Developed by the researcher

Chapter four

Data analysis and results

Overview

The research hypotheses were tested using structural equation modeling (SEM), and the data was analyzed using Smart-PLS3. The data was collected using a questionnaire designed to test the research model, and the results are reported in this chapter.

4.1 Participant profile

In this section, the researcher examined the characteristics of the study's sample. The 7 categories that made up the demographic variables were as follows:

Distribution of the sample with respect to gender.

The analysis showed that with regard to gender (sex), males form 75.6% (n = 254) and females form 24.4% (n = 82) of the research sample, as shown in Table (4.1) and Figure (4.1).

Table (4.1): Distribution of the sample with respect to gender (sex).

Variable	Variable level	Frequency	Percentage
Gender	Male	254	75.60%
	Female	82	24.40%
	Total	**336**	**100%**

Distribution of the sample with respect to age.

The analysis showed that with regard to age, the largest group was less than 30 years of age with 60.7% (n = 204), followed by individuals between 31 and 40 years of age with 27.4% (n = 92), the third group was individuals between 41 and 50 years of age with 11.3% (n = 38), and the smallest group was individuals older than 50 years with 0.6% (n = 2), as shown in Table 4.2 and Figure 4.2 below.

Table (4.2): Distribution of the Sample with Respect to Age

Variable	Variable level	Frequency	Percentage
Age	less than 30 years	204	60.70%
	between 31-40 years	92	27.40%
	Between 41-50 years	38	11.30%
	Older than 50	2	0.60%
	Total	**336**	**100%**

Distribution of the sample with respect to educational qualification

The analysis showed that with regard to educational qualification, 74.70% (n = 251) hold a bachelor's degree, 8.60% (n = 29) hold a master's degree, and 10.10% (n = 34) hold a diploma, and 0.3% (n = 1) hold a doctoral degree, and 2.10% (n = 7) have post-graduate diplomas, and 4.20% (n = 14) have a specialty, as shown in both Table (4.3) and Figure (4.3).

Table (4.3): Distribution of the Sample with Respect to Educational Qualification

Variable	Variable level	Frequency	Percentage
Educational Qualification	Diploma (2yrs)	34	10.10%
	Bachelor's Degree	251	74.70%
	Post-grad Diploma	7	2.10%
	Specialty	14	4.20%
	Master's Degree	29	8.60%
	Doctoral Degree	1	0.30%
	Total	**336**	**100%**

Distribution of the sample with respect to career experience

The research sample showed that with regard to career experience, the largest group had from 1–5 years of career experience (n = 134, 39.9%); the second group had between 6–10 years of career experience (n = 102, 30.40%); the third group had 11 or more years of experience (n = 73, 21.70%); and the smallest group had less than 1 year of experience (n = 27, 8%), as shown in Table (4.4) and Figure (4.4)

Table (4.4): Distribution of the Sample with Respect to Career Experience

Variable	Variable level	Frequency	Percentage
Career Experience	Less than 1 year	27	8%
	1 to 5 years	134	39.90%
	6 to 10 years	102	30.40%
	11 or more years	73	21.70%
	Total	**336**	**100%**

Distribution of the sample with respect to specialty.

The analysis showed that with regard to specialty, the largest group were nurses (n = 166, 3%), the second group were physicians (n = 103, 30.65%), the third group were medical lab specialists (n = 27, 8.04%), the fourth group were pharmacists (n = 26, 7.74%), and the smallest group were physiotherapists (n = 14, 4.17%), as shown in Table (4.5) and Figure (4.5).

Table (4.5)

Distribution of the Sample with respect to specialty

Variable	Variable level	Frequency	Percentage
Specialty	Medical Lab	27	8.04%
	Physiotherapist	14	4.17%
	Physician	103	30.65%
	Nurse	166	49.40%
	Pharmacist	26	7.74%
	Total	**336**	**100.00%**

Distribution of the sample with respect to department of work.

The research sample showed that with regard to department of work, individuals working in the In-Patient Department (n = 303, 90.20%) and individuals working in the Out-Patient department (n = 33, 9.80%) of the research sample, as shown in Table (4.6) and Figure (4.6).

Table (4.6): Distribution of the sample with respect to department of work

Variable	Variable level	Frequency	Percentage
Department of work	In-Patient Department	303	90.20%
	Out-Patient Department	33	9.80%
	Total	**336**	**100%**

Distribution of the sample with respect to hospital.

The analysis showed that, with regard to hospitals, the sample was distributed from largest to smallest as follows: Al-Ahli Hospital (n = 56, 16.62%), Palestine Medical Complex (n = 52, 15.43%), Jenin Hospital (n = 48, 14.24%), Alia Hospital (n = 38, 11.28%), Rafidia Hospital (n = 32, 9.50%), Istishari Hospital (n = 31, 9.20%), Alnajah Hospital (n = 29, 8.61%), Tulkarm Hospital (n = 21, 6.23%), Ibn Sena Hospital (n = 18 5.34%), Alisra Hospital (n = 12, 3.56%) as shown in both Table (4.7) and Figure (4.7) as shown in both Table (4.7) and Figure (4.7).

Table (4.7): Distribution of the Sample with Respect to the Hospital

Variable	Variable level	Frequency	Percent
Hospital	Tulkarm Hospital	21	6.23%
	Rafedia Hospital	32	9.50%
	Palestine Medical Complex	52	15.43%
	Jenin Hospital	48	14.24%
	Istishari Hospital	31	9.20%
	Ibn Sena Hospital	18	5.34%
	Alnajah Hospital	29	8.61%
	Alisra Hospital	12	3.56%
	Alia Hospital	38	11.28%
	Al-Ahli Hospital	56	16.62%
	Total	**336**	**100.00%**

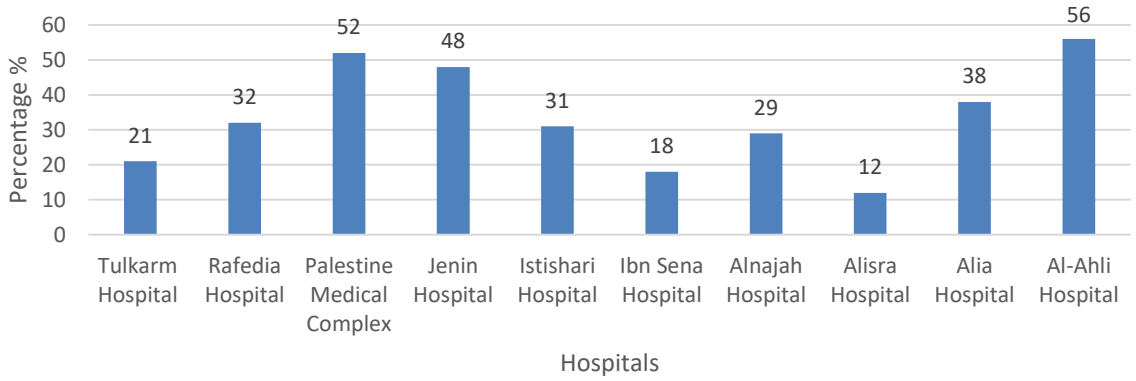

Figure (4.1): Distribution of the sample with respect to hospital

Hospital background

Table (4.8) shows that all the hospitals in this study have a quality department, and all of the hospitals except Alisra Hospital have an infection control program and an officer. As for accreditation, only two hospitals (Alnajah and Al-Istishari) have JCI accreditation.

Table (4.8): Hospital background

#	hospital	Quality Department/ Office		Infection Control Program		Infection Control Officer		Accreditation	
		Yes	No	Yes	No	Yes	No	Yes	No
1	Tulkarm Hospital	100%		100%		100%			100%
2	Rafedia Hospital	100%		100%		100%			100%
3	Palestine Medical Complex	100%		100%		100%			100%
4	Jenin Hospital	100%		100%		100%			100%
5	Istishari Hospital	100%		100%		100%		100%	
6	Ibn Sena Hospital	100%		100%		100%			100%
7	Alnajah Hospital	100%		100%		100%		100%	
8	Alisra Hospital	100%		0%	100%	0%	100%		100%
9	Alia Hospital	100%		100%		100%			100%
10	Al-Ahli Hospital	100%		100%		100%			100%

4.2 Results of questionnaire analysis

4.2.1 Measurement model assessment

This section of the study focused on evaluating the convergent and discriminant validity of the model. The aim was to address the research hypothesis and associated inquiries:

Convergent validity

The consistency degree or Convergent validity according to Hair Jr. et al. (2016) is measured by the following indicators:

A. Factor loading
B. Composite Reliability (CR)
C. Average Variance Extracted (AVE)

The criteria for accepting convergent validity indicators are shown in Table (4.9) bellow:

Table (4.9) Convergent Validity Indicators Criteria

Indicator	Accepted values
Factor loading	higher than 0.5
Composite Reliability(CR)	higher than 0.7
Average Variance Extracted (AVE)	higher than 0.5

Source: (Hair Jr et al., 2016)

A. Internal consistency – Factor loading

The Figure (4.2) below shows the measurement model of the study before discarding the low factor loading, which is a statistical technique known as factor analysis; it is used to express variation among connected, observable variables in terms of a possibly smaller set of unobserved variables known as factors. The amount to which a variable is related to a particular factor is measured by the factor loading of the variable. In essence, factor loading is the correlation between the factor and the variable. Factor loading displays the variance of that specific factor that is explained by the variable. A general rule of thumb for the SEM technique is that a factor extracts enough variance from a variable if its loading is 0.5 or greater (Hair Jr. et al., 2016).

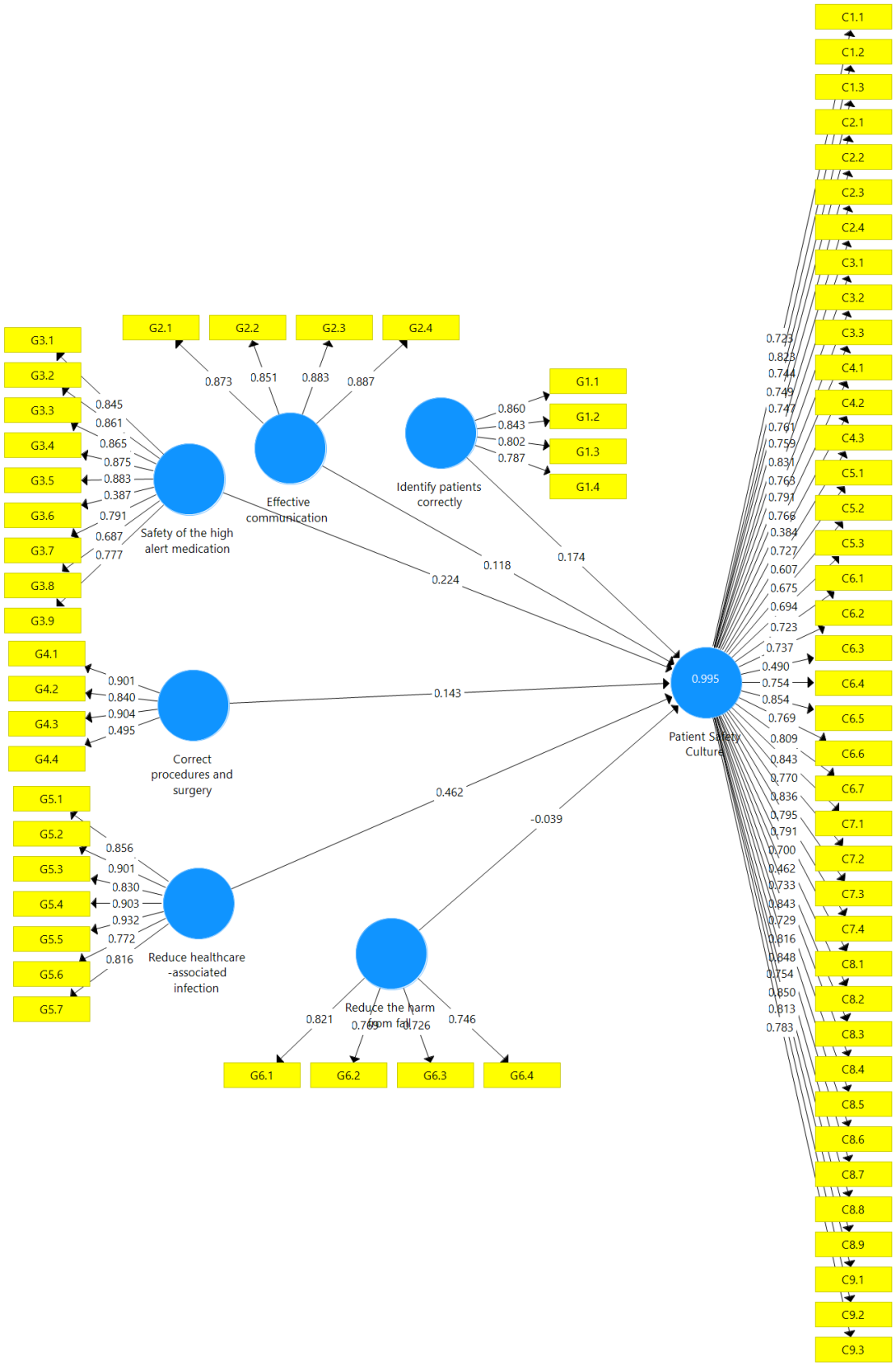

Figure (4.2) Factor Loadings before Factor Elimination

Table 4.10 Factor Loadings

Variable		Paragraph		Loading
IPSGs	**G1**	Identities of patients are verified before any medical procedure is performed.	G1.1	**0.860**
		The hospital is committed to providing the patient with the bracelet.	G1.2	**0.843**
		Immediately after taking a sample from the patient, the hospital labels it.	G1.3	**0.802**
		Patient data are checked by the treating nurse or physician to ensure that they are complete.	G1.4	**0.787**
	G2	The hospital has a clear written policy for verbal orders.	G2.1	**0.873**
		Drug order signed at time of administration by nurses.	G2.2	**0.851**
		The hospital follows a standardized approach for hands off processes.	G2.3	**0.883**
		The hospital has a policy for reporting critical lab results and radiology results.	G2.4	**0.887**
	G3	The hospital identifies a high-risk drug list with a high alert sign.	G3.1	**0.845**
		High alert medication prepared by the pharmacist and administered and signed by the nurse.	G3.2	**0.861**
		The hospital removes the high-alert drugs from open departments.	G3.3	**0.865**
		A red label is placed on the high alert medication when it is dispensed from the pharmacy to the open department.	G3.4	**0.875**
		The hospital separates similar medications by name in different places.	G3.5	**0.883**
		The hospital identifies in writing its list of look-alike/sound-alike medications.	G3.6	**0.387**
		The hospital annually reviews and updates its list of look-alike/sound-alike medications.	G3.7	**0.791**
		Double checked and signed by two nurses to manage and prevent errors.	G3.8	**0.687**
		The physician / nurse tells the patient about the medication, its properties and possible side effects.	G3.9	**0.777**
	G4	The surgeon or his/her assistant mark the Site of surgery with a visual mark.	G4.1	**0.901**
		Before performing the surgery, all team members approve the timeout check for the correct surgery.	G4.2	**0.840**
		Anesthesia data forms are completed by anesthetists.	G4.3	**0.904**
		Time out check protocol is done just before starting any surgical procedure by the nurse and the surgeon.	G4.4	**0.495**
	G5	Health care providers are committed to hand washing protocols.	G5.1	**0.856**
		Hand washing instructions are available on all basins.	G5.2	**0.901**
		Hand washing is required for every medical procedure/patient contact.	G5.3	**0.830**
		The jewelers are removed during work.	G5.4	**0.903**
		Every medical procedure with direct contact with the body fluids of patients requires the use of protective gloves.	G5.5	**0.932**

		The hospital identifies and implements a process to manage and prevent (healthcare associated infection) such as CAUTI, by applying the bundles of prevention for all patients who meet the criteria.	G5.6	**0.772**
		In the hospital, sterilized appliances, equipment and tools are available.	G5.7	**0.816**
	G6	There is a policy to ensure safety for patients from falls while in the hospital.	G6.1	**0.821**
		To deal with cases of patient fall, the precautions are put in place.	G6.2	**0.769**
		To deal with unexpected events, a special incident form is applied.	G6.3	**0.726**
		Cases of falls are reported and documented for follow up and indicator calculation.	G6.4	**0.746**
Patient Safety Culture	**C1**	The supervisor or manager seriously considers staff suggestions for improving patient safety.	C1.1	**0.723**
		If the number of patients in the department increases, the manager asks the team to work quickly and concisely.	C1.2	**0.823**
		Concerns about patient safety are addressed by the supervisor or manager.	C1.3	**0.744**
	C2	Safety measures are taken by the hospital to improve patient care.	C2.1	**0.749**
		Medical errors are used as a tool for positive change.	C2.2	**0.747**
		A patient safety evaluation is conducted regularly in the hospital.	C2.3	**0.761**
		Prior to affecting the patient's safety, the errors are corrected.	C2.4	**0.759**
	C3	Work errors are handled transparently.	C3.1	**0.831**
		Instead of focusing on penalties, the focus is on addressing errors.	C3.2	**0.763**
		Errors can be recorded in the job file without fear or hesitation.	C3.3	**0.791**
	C4	There is enough staff to manage the workload with minimal risk on patient safety.	C4.1	**0.766**
		If the workload increases, temporary staff can be used to provide better and safer care.	C4.2	**0.384**
		In the event of an increase in workload, the staff work more quickly with less safety.	C4.3	**0.727**
	C5	An environment that promotes patient safety is provided by hospital management.	C5.1	**0.607**
		Patient safety is a priority for hospital management.	C5.2	**0.675**
		Patient safety is important to management always, not just when mistakes are made.	C5.3	**0.694**
	C6	In the department, the staff members support one another.	C6.1	**0.723**
		Staff work together to get the job done quickly (if units are overloaded).	C6.2	**0.737**
		In this department, staff members treat one another with respect.	C6.3	**0.490**
		The hospital departments work well together for the best patient care.	C6.4	**0.754**
		There is good cooperation among hospital units that must collaborate.	C6.5	**0.854**
		The hospital departments collaborate to improve patient safety.	C6.6	**0.769**
		Working with other departments is frequently simple and safe.	C6.7	**0.809**

c7	When transferring patients between departments, errors are relatively rare.	C7.1	**0.843**
	Important patient information is rarely lost throughout a shift.	C7.2	**0.770**
	Problems rarely occur in the exchange of information across hospital departments	C7.3	**0.836**
	Changing shifts is not a major concern for patients' safety at this hospital.	C7.4	**0.795**
C8	When staff notice things that are affecting the safety of patient, they speak to their supervisor /manager freely with no fear.	C8.1	**0.791**
	The staff have the right to ask about decisions made by management about incidents they were involved in or were occurred in their department. .	C8.2	**0.700**
	The staff aren't afraid to ask questions when something does not seem right.	C8.3	**0.462**
	Errors that may occur within the department are reported to management / supervisor	C8.4	**0.733**
	Feedback about changes / errors is given based on event reports to the staff of the department	C8.5	**0.843**
	The department discusses ways to avoid repetition of similar mistakes.	C8.6	**0.729**
	Corrected errors are documented.	C8.7	**0.816**
	Harmless errors to the patient are documented.	C8.8	**0.848**
	Serious errors that harm the safety of the patient are documented.	C8.9	**0.754**
C9	Hospital procedures and policies are effective in preventing errors in my hospital.	C9.1	**0.850**
	Serious errors are relatively rare in this hospital.	C9.2	**0.813**
	In this department, the number of errors in patient safety is low.	C9.3	**0.783**

From Figure (4.2) and Table (4.10) and as per (Hair Jr et al., 2016; Hulland, 1999) of factor loading criteria to assess convergent validity, the cutoff point must be more than (0.5), (CR must be greater than 0.7), and (AVE also must be greater than 0.5), so the indicators (G4.4, C4.2, C6.3, C8.3) have low factor loadings, and therefore, were eliminated.

B. Composite Reliability (CR)

Table (4.11) shows the composite reliability of the study variables.

Table (4.11) Composite Reliability

Variable	CR
Identify patients correctly	0.894
Effective communication	0.928
Safety of the high alert medication	0.935
Correct procedures and surgery	0.931
Reduce healthcare -associated infection	0.952
Reduce the harm from falls	0.850
IPSGs	0.977
Patient Safety Culture	0.981

From table (4.11) and as per (Hair Jr et al., 2016; Hulland, 1999) CR must be greater than 0.7), the indicators are all above the standard criteria; this means that the CR is fulfilled, that is, there is good reliability in the research data.

C. Average Variance Extracted (AVE)

The following Table (4.12) shows the (AVE) values of the study variables.

Table (4.12): Average Variance Extracted (AVE)

Variable	AVE
Identify patients correctly	0.679
Effective communication	0.763
Safety of the high alert medication	0.622
Correct procedures and surgery	0.818
Reduce healthcare -associated infection	0.740
Reduce the harm from falls	0.587
IPSG's	0.578
Patient Safety Culture	0.596

Table 4.12 indicates that the variables used in this research are reliable and have an average variance extracted (AVE) value of more than 0.5, which is in the acceptable range according to Hair Jr. et al. (2016) and Hulland (1999). In conclusion, all values of the variables are in the acceptable range to conclude good reliability; that is, there is good reliability in the research data.

Discriminant validity

The following table (4.13) illustrates the discriminant validity between the study variables.

Table (4.13)

Correlations and Measures of Validity among Variables

Variable	1	2	3	4	5	6	7
Identify patients correctly	0.693						
Effective communication	0.672	0.666					
Safety of the high alert medication	0.625	0.614	0.603				
Correct procedures and surgery	0.621	0.611	0.591	0.580			
Reduce healthcare -associated infection	0.615	0.608	0.582	0.573	0.541		
Reduce the harm from fall	0.610	0.602	0.564	0.558	0.532	0.559	
Patient Safety Culture	0.603	0.591	0.556	0.546	0.510	0.543	0.503

Table (4.13) suggests that all the variables have a better loading on their corresponding construct than the move loadings on the other constructs in the model. And the (AVE) for every component exceeded the respective squared correlation among elements, giving proof of discriminant validity (Fornell & Larcker, 1981).

In this section the responses were analyzed on each of the variables in the questionnaire, the researcher divided the result criteria of the (1-5) point Likert Scale into three categories as follows:

Table (14): Mean criteria for the Likert scale

#	Range	Result
1	**1-2.33**	**Low**

2	**2.34-3.67**	**Moderate**
3	**Higher than 3.67**	**High**

4.2.2 International patient safety goals

Goal 1: Identify patients correctly

Table (4.15) shows the mean and standard deviation of the four paragraphs that comprise the first goal of the IPSG's across the ten hospitals that were studied:

Table (4.15): Mean and Standard Deviation of IPSG 1 across Hospitals

Hospital		G1.1	G1.2	G1.3	G1.4	Average
Alnajah Hospital	Mean	4.88	4.88	4.79	4.74	**4.82**
	Std. Deviation	0.327	0.327	0.410	0.448	**0.38**
Ibn Sena Hospital	Mean	4.58	4.55	4.61	4.55	**4.57**
	Std. Deviation	0.502	0.564	0.556	0.617	**0.56**
Palestine Medical Complex	Mean	5.00	5.00	4.00	4.00	**4.50**
	Std. Deviation	0.731	0.712	0.710	0.631	**0.70**
Istishari Hospital	Mean	4.46	4.40	4.40	4.34	**4.40**
	Std. Deviation	0.611	0.695	0.736	0.684	**0.68**
Jenin Hospital	Mean	3.90	4.66	4.44	4.33	**4.33**
	Std. Deviation	0.300	0.479	0.501	0.676	**0.49**
Rafedia Hospital	Mean	4.00	4.18	4.21	4.32	**4.18**
	Std. Deviation	0.272	0.476	0.418	0.670	**0.46**
Tulkarm Hospital (Thabit Thabit)	Mean	4.42	4.33	4.00	3.92	**4.17**
	Std. Deviation	0.669	0.778	0.739	0.900	**0.77**
Alia Hospital	Mean	4.09	4.00	3.78	3.97	**3.96**
	Std. Deviation	0.963	0.916	1.184	0.933	**1.00**
Alisra Hospital	Mean	4.06	3.92	3.67	3.83	**3.87**
	Std. Deviation	0.715	0.604	0.535	0.609	**0.62**
Al-Ahli Hospital	Mean	3.88	3.00	4.00	4.00	**3.72**
	Std. Deviation	0.808	0.419	0.631	0.711	**0.64**
Total	**Mean**	**4.29**	**4.31**	**4.22**	**4.23**	**4.26**
	Std. Deviation	**0.684**	**0.769**	**0.679**	**0.666**	**0.70**

From the findings shown in table (4.15), it's clear that the degree of implementing goal (1) of the IPSGs "Identify patients correctly" is high with the mean score (4.26) and the standard deviation (0.700); the paragraph "The hospital is committed to providing the patient with the bracelet" got the highest mean score (4.31) and the standard deviation (0.769); the paragraph "Immediately after taking a sample from patient, the hospital labels it" got the lowest rate with the mean score (M=4.22) and the standard deviation (0.679). As for the hospitals, table (4.10) shows that this goal was implemented the highest in "Al-Najah Hospital" with the mean score (4.82) and the standard deviation (0.380); the lowest rate, where this goal was implemented, was in "Al-Ahli Hospital" with the mean score (3.72) and the standard deviation (0.640).

Goal 2: Effective communication

Table (4.16) shows the mean and standard deviation of the four paragraphs that comprise the second goal of the IPSGs across the ten hospitals that were studied:

Table (4.16): Mean and standard deviation of IPSG 2 across hospitals

Hospital		G1.1	G1.2	G1.3	G1.4	Average
Alnajah Hospital	Mean	4.59	4.59	4.53	4.68	**4.60**
	Std. Deviation	0.500	0.500	0.507	0.475	**0.495**
Al-Ahli Hospital	Mean	4.00	4.00	4.97	4.97	**4.49**
	Std. Deviation	0.000	0.000	0.171	0.171	**0.086**
Ibn Sena Hospital	Mean	4.24	4.30	4.45	4.39	**4.35**
	Std. Deviation	0.663	0.637	0.564	0.659	**0.631**
Istishari Hospital	Mean	4.34	4.29	4.23	4.20	**4.26**
	Std. Deviation	0.639	0.710	0.770	0.759	**0.720**
Palestine Medical Complex	Mean	4.32	4.71	3.91	4.27	**4.30**
	Std. Deviation	0.691	0.761	0.700	0.761	**0.728**
Alia Hospital	Mean	4.06	4.25	4.13	4.13	**4.14**
	Std. Deviation	1.076	0.568	0.793	0.793	**0.807**
Jenin Hospital	Mean	3.23	3.92	3.80	3.69	**3.66**
	Std. Deviation	1.039	0.862	0.910	0.807	**0.904**
Tulkarm Hospital (Thabit Thabit)	Mean	3.42	4.00	3.67	3.50	**3.65**
	Std. Deviation	1.165	0.853	1.155	1.087	**1.065**
Rafedia Hospital	Mean	3.25	3.89	3.71	3.61	**3.62**
	Std. Deviation	1.041	0.875	0.897	0.786	**0.900**

Alisra Hospital	Mean	3.08	3.67	3.28	2.86	**3.22**
	Std. Deviation	0.841	0.535	0.914	0.424	**0.678**
Total	**Mean**	**3.90**	**4.18**	**4.08**	**4.10**	**4.06**
	Std. Deviation	**1.004**	**0.726**	**0.860**	**0.912**	**0.875**

From the findings shown in table (4.16) the degree of implementing goal (2) of the IPSG's "Effective communication" is high with a mean of (4.06) and a standard deviation of (0.875), with the paragraph "Drug order signed on time of administration by nurses" having the highest mean (4.18) and standard deviation (0.726), and the paragraph "The hospital has a clear written policy for verbal orders" was the lowest with a mean of (3.90) and standard deviation of (1.004). as for the hospitals table (4.11) shows that this goal was implemented the most in "Al-Najah Hospital" with a mean of (4.60) and a standard deviation of (0.495), and the least this goal was implemented in "Al-Isra Hospital" with a mean of (3.22) and a standard deviation of (0.678). From the findings shown in table (4.11), the degree of implementation of goal (2) of the IPSGs "Effective Communication" is high with a mean of (4.06) and a standard deviation of (0.875); the paragraph "Drug order signed on time of administration by nurses" got the highest mean (4.18) and standard deviation (0.726); the paragraph "The hospital has a clear written policy for verbal orders" got the lowest rate with mean of (3.90) and a standard deviation of (1.004). As for the hospitals, table (4.11), the results show that this goal was implemented the most in "Al-Najah Hospital," with a mean of 4.60 and a standard deviation of 0.495, and the least in "Al-Isra Hospital," with a mean of 3.22 and a standard deviation of 0.678.

Goal 3: Safety of the high alert medication

Table (4.17) shows the mean and standard deviation of the nine paragraphs that comprise the third goal of the IPSG's across the ten hospitals that were involved in this study:

Table (4.17): Mean and standard deviation of IPSG 3 across hospitals

Hospital		**G3.1**	**G3.2**	**G3.3**	**G3.4**	**G3.5**	**G3.6**	**G3.7**	**G3.8**	**G3.9**	**Average**
Alnajah Hospital	Mean	4.62	4.47	4.53	4.76	4.62	4.47	4.44	4.41	4.53	**4.54**
	Std. Dev	0.551	0.662	0.788	0.431	0.551	0.615	0.561	0.701	0.662	**0.61**

Ibn Sena Hospital	Mean	4.42	4.03	4.09	4.48	4.27	4.48	4.39	4.52	4.39	**4.34**
	Std. Dev	0.708	1.075	0.914	0.619	0.839	0.619	0.704	0.619	0.747	**0.76**
Istishari Hospital	Mean	4.29	4.26	4.26	4.29	4.14	4.23	4.29	4.11	4.31	**4.24**
	Std. Dev	0.750	0.780	0.701	0.750	0.810	0.690	0.750	0.900	0.758	**0.77**
Palestine Medical Complex	Mean	4.00	4.00	3.00	5.00	4.00	4.00	4.00	3.00	5.00	**4.00**
	Std. Dev	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	**0.00**
Rafedia Hospital	Mean	4.46	4.04	3.82	4.32	4.25	3.71	3.79	3.68	3.75	**3.98**
	Std. Dev	0.693	0.962	1.249	0.476	0.645	0.713	0.418	0.819	0.645	**0.74**
Alia Hospital	Mean	4.25	2.69	4.16	4.16	4.31	4.13	4.06	4.00	4.03	**3.98**
	Std. Dev	0.842	1.554	0.987	1.019	0.644	0.751	0.759	1.016	0.782	**0.93**
Jenin Hospital	Mean	4.44	3.98	3.93	4.34	4.21	3.64	3.64	3.66	3.79	**3.96**
	Std. Dev	0.696	0.957	1.167	0.479	0.635	0.797	0.797	0.834	0.635	**0.78**
Tulkarm Hospital	Mean	4.08	3.83	3.92	4.08	3.42	3.67	3.75	3.50	3.50	**3.75**
	Std. Dev	0.793	0.718	0.900	0.669	0.793	0.778	0.866	1.000	0.674	**0.80**
Al-Ahli Hospital	Mean	3.82	3.06	4.00	3.21	3.62	3.59	3.41	3.44	3.47	**3.51**
	Std. Dev	0.758	1.071	0.651	0.770	0.493	0.821	1.019	0.786	1.331	**0.86**
Alisra Hospital	Mean	3.69	2.92	3.50	3.42	3.39	3.19	3.11	3.28	3.83	**3.37**
	Std. Dev	0.749	0.874	0.941	0.500	0.688	0.401	0.319	0.454	0.507	**0.60**
Total	**Mean**	**4.23**	**3.74**	**3.93**	**4.21**	**4.07**	**3.90**	**3.87**	**3.77**	**4.07**	**3.98**
	Std. Dev	**0.740**	**1.108**	**0.984**	**0.799**	**0.732**	**0.772**	**0.795**	**0.876**	**0.854**	**0.85**

The degree of implementing goal (3) of the IPSGs “Safety of the high alert medication” is high as shown in the findings of table (4.17) with a mean of (3.98) and a standard deviation of (0.850); the paragraph “The hospital identifies a high-risk drug list with high alert sign” got the highest mean (4.23) and the standard deviation (0.740), and the paragraph “High alert medication prepared by the pharmacist and administered and signed by the nurse” was the lowest with a mean of (3.74) and a standard deviation of (1.108). As for the hospitals, table (4.12) shows that this goal was implemented

the most in “Al-Najah Hospital” with a mean of (4.54) and a standard deviation of (0.609), and the least rate, where this goal was implemented, was in “Al-Isra Hospital” with a mean of (3.37), with a standard deviation of (0.602).

Goal 4: Correct procedures and surgery

Table (4.18) shows the mean and standard deviation of the four paragraphs that comprise the fourth goal of the IPSGs across the ten hospitals that were involved in this study:

Table (4.18): Mean and standard deviation of IPSG 4 across hospitals

Hospital		G4.1	G4.2	G4.3	G4.4	Average
Alnajah Hospital	Mean	4.41	4.41	4.50	4.35	**4.42**
	Std. Dev	0.743	0.609	0.508	0.691	**0.638**
Istishari Hospital	Mean	4.23	4.40	4.37	4.29	**4.32**
	Std. Dev	0.808	0.651	0.646	0.667	**0.693**
Ibn Sena Hospital	Mean	4.09	4.18	4.21	4.33	**4.20**
	Std. Dev	0.914	0.882	0.740	0.692	**0.807**
Al-Ahli Hospital	Mean	4.18	4.00	4.53	4.00	**4.18**
	Std. Dev	0.716	0.853	0.507	0.853	**0.732**
Alia Hospital	Mean	4.00	4.19	4.03	4.16	**4.09**
	Std. Dev	0.762	0.780	0.897	0.847	**0.822**
Rafedia Hospital	Mean	4.14	4.00	3.89	4.00	**4.01**
	Std. Dev	0.756	0.471	0.567	0.471	**0.566**
Palestine Medical Complex	Mean	4.00	4.00	4.00	4.00	**4.00**
	Std. Dev	0.000	0.000	0.000	0.000	**0.000**
Tulkarm Hospital	Mean	3.92	3.92	4.00	4.17	**4.00**
	Std. Dev	0.900	0.996	0.603	0.577	**0.769**
Jenin Hospital	Mean	4.10	4.00	3.87	4.00	**3.99**
	Std. Dev	0.746	0.483	0.618	0.516	**0.591**
Alisra Hospital	Mean	3.53	3.78	3.86	3.53	**3.67**
	Std. Dev	0.696	0.591	0.424	0.696	**0.602**
Total	**Mean**	**4.07**	**4.09**	**4.12**	**4.06**	**4.09**
	Std. Dev	**0.760**	**0.669**	**0.640**	**0.677**	**0.687**

The degree of implementing goal (4) of the IPSGs "Correct procedures and surgery" is high as shown in the findings of table (4.18) with a mean of (4.09) and a standard deviation of (0.687); the paragraph "Anesthesia data forms are completed by anesthetist/ technician" got the highest mean (4.12) and standard deviation (0.640), and the paragraph "Time out check protocol is done just before starting any surgical procedure by the nurse and the surgeon" got the lowest rate with a mean of (4.06) and a standard deviation of (0.677). As for the hospitals, table (4.13) shows that this goal was implemented the most in "Al-Najah Hospital" with a mean of (4.42) and a standard deviation of (0.638), and the least rate, where this goal was implemented, was in "Al-Isra Hospital" with a mean of (3.67) and a standard deviation of (0.602).

Goal 5: Reduce healthcare -associated infection

Table (4.19) shows the mean and standard deviation of the seven paragraphs that comprise the fifth goal of the IPSG's across the ten hospitals that were involved in this study:

Table (4.19): Mean and Standard Deviation of IPSG 5 across Hospitals

Hospital		G5.1	G5.2	G5.3	G5.4	G5.5	G5.6	G5.7	Average
Alnajah Hospital	Mean	4.47	4.53	4.44	4.29	4.53	4.50	4.65	**4.49**
	Std. Dev	0.563	0.507	0.660	0.719	0.615	0.615	0.485	**0.595**
Istishari Hospital	Mean	4.20	4.29	4.34	4.20	4.31	4.46	4.31	**4.30**
	Std. Dev	0.833	0.750	0.684	0.797	0.530	0.505	0.631	**0.676**
Ibn Sena Hospital	Mean	4.27	3.82	4.21	4.45	4.45	4.58	4.30	**4.30**
	Std. Dev	0.674	1.402	0.960	0.833	0.666	0.502	0.770	**0.830**
Palestine Medical Complex	Mean	4.00	4.00	4.00	4.00	4.00	5.00	5.00	**4.29**
	Std. Dev	0.000	0.000	0.000	0.000	0.000	0.000	0.000	**0.000**
Alia Hospital	Mean	4.25	4.38	4.22	4.25	4.34	4.22	4.25	**4.27**
	Std. Dev	0.718	0.751	0.706	0.672	0.701	0.792	0.762	**0.729**
Rafedia Hospital	Mean	4.11	4.14	4.32	3.89	4.21	4.21	4.32	**4.17**
	Std. Dev	0.567	0.756	0.476	0.737	0.630	0.630	0.476	**0.610**
Tulkarm Hospital	Mean	4.33	3.92	4.33	3.92	4.33	4.08	4.08	**4.14**
	Std. Dev	0.651	0.793	0.492	0.793	0.492	0.289	0.515	**0.575**
Jenin Hospital	Mean	4.00	3.98	4.33	3.87	4.21	4.25	4.34	**4.14**
	Std. Dev	0.516	0.719	0.473	0.741	0.635	0.623	0.479	**0.598**

Al-Ahli Hospital	Mean	3.82	4.00	4.18	3.71	4.21	3.88	4.38	**4.03**
	Std. Dev	0.716	0.603	0.387	0.579	0.479	0.769	0.551	**0.584**
Alisra Hospital	Mean	3.69	3.33	3.94	3.75	3.36	3.03	3.53	**3.52**
	Std. Dev	0.668	0.478	0.532	0.500	0.899	0.560	0.810	**0.635**
Total	**Mean**	**4.09**	**4.04**	**4.23**	**4.03**	**4.18**	**4.22**	**4.32**	**4.16**
	Std. Dev	**0.654**	**0.802**	**0.598**	**0.710**	**0.688**	**0.767**	**0.682**	**0.700**

The degree of implementing goal (5) of the IPSGs "Reduce healthcare -associated infection" is high as shown in the findings of table (4.19) with a mean of (4.16) and a standard deviation of (0.700); the paragraph "In the hospital, sterilized appliances, equipment and tools are available." got the highest mean score (4.32) and the standard deviation (0.682); the paragraph "The jewelry is removed during work." was the lowest with a mean of (4.03) and a standard deviation of (0.710). As for the hospitals, table (4.14) shows that this goal was implemented the most in "Al-Najah Hospital" with a mean of (4.49) and a standard deviation of (0.595); the least rate, where this goal was implemented, was in "Al-Isra Hospital" with a mean of (3.52) and a standard deviation of (0.635).

Goal 6: Reduce the harm from fall

Table (4.20) shows the mean and standard deviation of the four paragraphs that comprise the sixth goal of the IPSGs across the ten hospitals that were studied:

Table (4.20): Mean and standard deviation of IPSG 6 across hospitals

Hospital		G6.1	G6.2	G6.3	G6.4	Average
Alnajah Hospital	Mean	4.44	4.47	4.65	4.41	**4.49**
	Std. Dev	0.504	0.615	0.485	0.557	**0.540**
Ibn Sena Hospital	Mean	4.45	4.45	4.42	4.39	**4.43**
	Std. Dev	0.617	0.711	0.708	0.747	**0.696**
Istishari Hospital	Mean	4.31	4.09	4.23	4.31	**4.24**
	Std. Dev	0.718	0.818	0.690	0.631	**0.714**
Rafedia Hospital	Mean	4.32	4.32	4.00	4.21	**4.21**
	Std. Dev	0.670	0.476	0.667	0.418	**0.557**
Jenin Hospital	Mean	4.33	4.33	3.98	4.21	**4.21**
	Std. Dev	0.676	0.473	0.671	0.413	**0.558**

Al-Ahli Hospital	Mean	4.21	4.03	4.15	4.03	**4.10**
	Std. Dev	0.410	0.627	0.436	0.627	**0.525**
Alia Hospital	Mean	4.09	4.00	4.16	4.06	**4.08**
	Std. Dev	1.058	0.916	0.628	0.801	**0.851**
Tulkarm Hospital	Mean	4.00	3.75	3.67	3.58	**3.75**
	Std. Dev	0.426	0.622	0.492	0.515	**0.514**
Palestine Medical Complex	Mean	3.00	4.00	5.00	3.00	**3.75**
	Std. Dev	0.000	0.000	0.000	0.000	**0.000**
Alisra Hospital	Mean	3.22	3.19	3.44	3.39	**3.31**
	Std. Dev	1.045	0.980	1.027	0.994	**1.011**
Total	**Mean**	**4.06**	**4.10**	**4.18**	**4.01**	**4.09**
	Std. Dev	**0.842**	**0.759**	**0.760**	**0.757**	**0.779**

The degree of implementing goal (6) of the IPSGs "Reduce the harm from falls" is high as shown in the findings of table (4.20) with a mean of (4.09) and a standard deviation of (0.779); the paragraph "To deal with unexpected events, a special incident form is applied" got the highest mean (4.18) and the standard deviation (0.760); the paragraph "Cases of falls are reported and documented for follow up and indicator calculation." got the lowest rate with a mean of (4.01) and a standard deviation of (0.757). As for the hospitals, table (4.15) shows that this goal was implemented the highest in "Al-Najah Hospital" with a mean of (4.49) and a standard deviation of (0.540); the lowest rate, where this goal was implemented, was in "Al-Isra Hospital" with a mean of (3.31) and a standard deviation of (1.011).

IPSGs

Table (4.21) shows the mean and standard deviation of the six goals of the IPSG's across the ten hospitals that were studied:

Table (4.21): The Degree of Implementing the IPSGs in Palestinian Hospitals

Hospital		G1	G2	G3	G4	G5	G6	Average
Alnajah Hospital	Mean	4.824	4.596	4.539	4.419	4.487	4.493	**4.560**
	Std. Dev	0.329	0.379	0.395	0.570	0.452	0.410	**0.353**

Ibn Sena Hospital	Mean	4.568	4.348	4.343	4.205	4.299	4.432	**4.366**
	Std. Dev	0.485	0.476	0.538	0.654	0.598	0.607	**0.447**
Istishari Hospital	Mean	4.400	4.264	4.241	4.321	4.302	4.236	**4.294**
	Std. Dev	0.592	0.612	0.594	0.596	0.459	0.591	**0.486**
Palestine Medical Complex	Mean	4.500	4.750	4.000	4.000	4.286	3.750	**4.214**
	Std. Dev	0.000	0.000	0.000	0.000	0.000	0.000	**0.000**
Alia Hospital	Mean	3.961	4.141	3.976	4.094	4.272	4.078	**4.087**
	Std. Dev	0.811	0.585	0.551	0.644	0.542	0.720	**0.549**
Jenin Hospital	Mean	4.332	3.660	3.960	3.992	4.141	4.213	**4.050**
	Std. Dev	0.392	0.692	0.467	0.326	0.324	0.376	**0.296**
Rafedia Hospital	Mean	4.179	3.616	3.980	4.009	4.173	4.214	**4.029**
	Std. Dev	0.346	0.692	0.491	0.443	0.461	0.383	**0.316**
Al-Ahli Hospital	Mean	3.721	4.485	3.513	4.176	4.025	4.103	**4.004**
	Std. Dev	0.202	0.086	0.615	0.650	0.447	0.461	**0.279**
Tulkarm Hospital	Mean	4.167	3.646	3.750	4.000	4.143	3.750	**3.909**
	Std. Dev	0.597	0.980	0.481	0.657	0.413	0.369	**0.452**
Alisra Hospital	Mean	3.868	3.222	3.370	3.674	3.520	3.313	**3.494**
	Std. Dev	0.356	0.560	0.454	0.418	0.362	0.957	**0.290**
Total	**Mean**	**4.262**	**4.064**	**3.977**	**4.087**	**4.159**	**4.086**	**4.106**
	Std. Dev	**0.549**	**0.726**	**0.590**	**0.545**	**0.491**	**0.638**	**0.454**

The degree of implementing the IPSG's in the Palestinian hospitals is high with a mean of (4.106) and a standard deviation of (0.454); the goal that was implemented and got the highest rate was goal (1) "Identify patients correctly" with a mean of (4.262) and a standard deviation of (0.549), followed by goal (5) "Reduce healthcare -associated infection" with a mean of (4.159) and a standard deviation of (0.491), followed by goal (4) "Correct procedures and surgery" with a mean of (4.087) and a standard deviation of (0.545), followed by goal (6) "Reduce the harm from fall" with a mean of (4.086) and a standard deviation of (0.638), followed by goal (2) "Effective communication" with a mean of (4.064) and a standard deviation of (0.726), and the last goal was goal (3) "Safety of the high alert medication" with a mean of (3.977) and a standard deviation of (0.590).

The IPSGs were implemented the highest in "Al-Najjah Hospital" with a mean of (4.560) and a standard deviation of (0.353), followed by "Ibn Sena Hospital" with a mean of (4.366) and a

standard deviation of (0.447), followed by “Istishari hospital” with a mean of (4.294) and a standard deviation of (0.486), followed by “Palestine Medical Complex” with a mean of (4.214) and a standard deviation of (0.000), followed by “Alia Hospital” with a mean of (4.087) and a standard deviation of (0.549), followed by “Jenin Hospital” with a mean of (4.050) and a standard deviation of (0.296), followed by “Rafedia Hospital” with a mean of (4.029) and a standard deviation of (0.316), followed by “Al-Ahli Hospital” with a mean of (4.004) and a standard deviation of (0.279), followed by “Tulkarm Hospital” with a mean of (3.909) and a standard deviation of (0.452), and the IPSGs are least implemented in “Al-Isra Hospital” with a mean of (3.494) and a standard deviation of (0.290), these results are shown in figure (4.3).

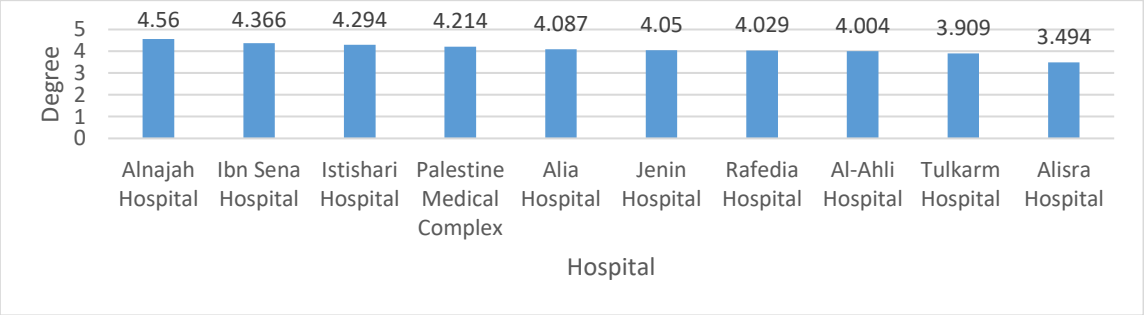

Figure (4.3): The Degree of Implementing the IPSGs in Palestinian Hospitals

4.2.3 Patient safety culture

The exclusion criteria were used when all items were answered the same after removing incomplete questionnaires, and the average percentage of positive responses on PSC was computed.

The average percentage of positive responses, defined as the average of the item-level percent positive responses within a HSOPSC dimension, represented a positive reaction toward PSC. The percentage of positive responses for each item and composite was calculated. According to negatively worded items, we analyze them by reversing when computing percentage positive response rates. Moreover, composite-level scores were computed by the summation of the items within the composite scales and dividing by the number of items. Table (4.22) shows the means and standard

deviations of the nine dimensions of the PSC across the ten hospitals that were involved in this study; the detailed analysis of each question of the dimensions is in Appendix (8):

Table (4.22): The Degree of PSC in Palestinian Hospitals

Hospital		**C1**	**C2**	**C3**	**C4**	**C5**	**C6**	**C7**	**C8**	**C9**	**C**
Alnajah Hospital	Mean	4.353	4.456	4.343	4.333	4.431	4.164	4.243	4.324	4.275	**4.325**
	Std. Dev	0.676	0.513	0.535	0.557	0.503	0.718	0.535	0.550	0.694	**0.449**
Ibn Sena Hospital	Mean	4.192	4.318	4.253	4.051	4.364	4.320	4.205	4.343	4.323	**4.263**
	Std. Dev	0.677	0.549	0.672	0.657	0.626	0.494	0.588	0.477	0.482	**0.468**
Istishari Hospital	Mean	3.924	4.121	4.067	3.905	4.162	4.069	4.036	4.003	4.190	**4.053**
	Std. Dev	0.741	0.550	0.753	0.790	0.596	0.582	0.576	0.678	0.701	**0.525**
Alia Hospital	Mean	3.948	4.039	4.063	3.906	4.156	4.004	3.953	4.042	4.188	**4.033**
	Std. Dev	0.856	0.678	0.647	0.804	0.622	0.579	0.691	0.604	0.672	**0.580**
Rafedia Hospital	Mean	4.250	4.071	3.667	3.726	4.214	4.020	3.920	3.873	4.048	**3.977**
	Std. Dev	0.441	0.430	0.521	0.497	0.437	0.388	0.367	0.470	0.511	**0.251**
Jenin Hospital	Mean	4.213	4.049	3.557	3.749	4.180	4.023	3.922	3.885	4.016	**3.955**
	Std. Dev	0.413	0.367	0.533	0.437	0.481	0.418	0.464	0.329	0.445	**0.254**
Al-Ahli Hospital	Mean	3.441	3.647	3.657	3.500	3.922	3.697	3.919	3.739	4.010	**3.726**
	Std. Dev	0.728	0.788	0.353	0.444	0.247	0.513	0.612	0.522	0.209	**0.387**
Tulkarm Hospital	Mean	3.639	3.771	2.806	3.222	4.083	3.952	3.771	3.815	3.972	**3.670**
	Std. Dev	0.559	0.470	0.703	0.592	0.474	0.461	0.617	0.293	0.658	**0.348**
Palestine Medical Complex	Mean	4.667	3.500	4.000	2.667	3.667	3.143	3.250	4.000	3.667	**3.618**
	Std. Dev	0.671	0.724	0.703	0.681	0.479	0.521	0.500	0.549	0.479	**0.627**
Alisra Hospital	Mean	3.213	3.201	2.926	3.139	3.380	3.425	3.590	3.525	3.241	**3.293**
	Std. Dev	0.608	0.702	0.564	0.683	0.438	0.441	0.619	0.430	0.706	**0.277**
Total	**Mean**	**4.009**	**3.933**	**3.772**	**3.658**	**4.060**	**3.889**	**3.894**	**3.955**	**3.992**	**3.907**
	Std. Dev	**0.731**	**0.650**	**0.708**	**0.730**	**0.566**	**0.592**	**0.593**	**0.524**	**0.621**	**0.481**

The degree of PSC in the Palestinian hospitals is high with a mean of (3.907) and a standard deviation of (0.481); the dimension that got the highest rate was C5 “Management Support for Patient Safety” with a mean of (4.060) and a standard deviation of (0.566), followed by C1 “Supervisor/Manager Expectations & Actions Promoting Patient Safety” with a mean of (4.009) and a standard deviation of (0.731), followed by C9 “Overall Perceptions of Patient Safety” with a mean of (3.992) and a standard deviation of (0.621), followed by C8 “Feedback & Communication about Errors” with a mean of (3.955) and a standard deviation of (0.524), followed by C2 “Organizational Learning—Continuous Improvement” with a mean of (3.933) and a standard deviation of (0.650), followed by C7 “Handoffs & Transitions” with a mean of (3.894) and a standard deviation of (0.524), followed by C6 “Teamwork Across and within Units” with a mean of (3.889) and a standard deviation of (0.592), followed by C3 “Non Punitive Response to Errors” with a mean of (3.772) and a standard deviation of (0.708), and the lowest PSC diminution was for C4 “Staffing” with a mean of (3.658) and a standard deviation of (0.730).

The PSC was the highest in “Al-Najjah Hospital” with a mean of (4.325) and a standard deviation of (0.449), followed by “Ibn Sena Hospital” with a mean of (4.263) and a standard deviation of (0.468), followed by “Istishari Hospital” with a mean of (4.053) and a standard deviation of (0.525), followed by “Alia Hospital” with a mean of (4.033) and a standard deviation of (0.580), followed by “Rafedia Hospital” with a mean of (3.977) and a standard deviation of (0.251), followed by “Jenin Hospital” with a mean of (3.955) and a standard deviation of (0.254), followed by “Al-Ahli Hospital” with a mean of (3.726) and a standard deviation of (0.387), followed by “Tulkarm Hospital” with a mean of (3.670) and a standard deviation of (0.348), followed by “Palestine Medical Complex” with a mean of (3.618) and a standard deviation of (0.627), and the PSC was the lowest in “Al-Isra Hospital” with a mean of (3.293) and a standard deviation of (0.277). These results are shown in Figure (4.4).

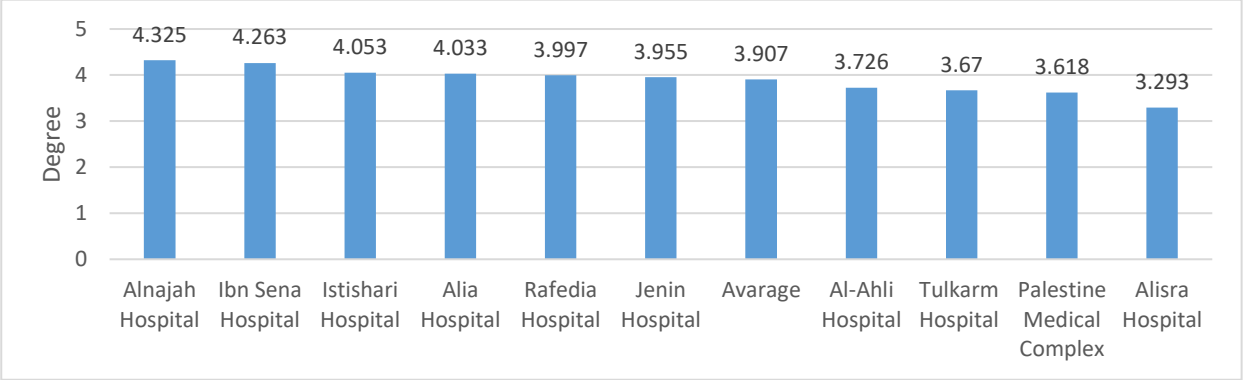

Figure (4.4): The Degree of PSC in Palestinian Hospitals

4.3 Hypotheses Testing

In order to carry out Structural Equation Modeling (SEM), an assessment of two parts of the model was carried out using Smart-PLS3 as follows:

4.3.1 Assessment of the Structural Model

A. Coefficient of determination (R^2)

The coefficient of determination is the most popular indicator for evaluating the structural model; this indicator tests the predictive strength of the model. The study found that $\boldsymbol{R^2}$ for the structural model for this research was (0.985), which means that 98.5% of the PSC was explained by the implementation of the IPSGs, and that is considered, according to Table 3.4, to have a high explanatory value.

B. Effect size f^2

Effect size shows how every independent variable affects the dependent variable on its own. From table (4.23), we notice that all the independent variables have a high effect on the dependent variable except the variable "Reduce the harm from falls," which has a small effect.

Table (4.23) Effect Size f^2

	value	Result
Identify patients correctly	0.257	Large effect
Effective communication	0.447	Large effect
Safety of the high alert medication	0.370	Large effect
Correct procedures and surgery	0.986	Large effect
Reduce healthcare -associated infection	0.961	Large effect
Reduce the harm from falls	0.020	Small effect

C. Predictive Relevance Q^2

The Predictive Relevance Q2 value, also known as the "Stone-Q2 Geisser's value," indicates the model's prediction relevance, whereas the R square values indicate predictive accuracy (Hair Jr. et al., 2016). The path model's predictive relevance for the construct is indicated by Q2 values greater than zero for a particular reflective endogenous variable. (Hair, Ringle, & Sarstedt, 2013).

As shown in Table 4.24, when we ran the blindfolding method with an omission distance (D) value of 7, we obtained Q2 values greater than zero, demonstrating the excellent predictive significance of our path model. This is a test in Smart PLS program that tests the predictive relevance

Table (4.24) Predictive Relevance Q^2(Construct Cross validated Redundancy)

Total	SSO	SSE	Q^2 (=1-SSE/SSO)
Patient Safety Culture	3456.000	1445.958	0.582

D. Goodness of Fit of the Model (GoF)

The GoF is calculated using the following formula:

$$GOF = \sqrt{\overline{R}^2 \times \overline{(AVE)}}$$

$$GOF = \sqrt{0.985 \text{x} 0.596}$$

$$GOF = \sqrt{0.587}$$

GOF= 0.766

The value of the Gof is (0.766); it can be said that the GoF of the model is large enough to be considered a sufficient global PLS model validity.

4. 4 Path Analysis

A system of equations with all variables observed is estimated using path analysis. Path models allow for several dependent variables, in contrast to regression models (systems of regression models). The variables of a path model may be included in SmartPLS as single-item constructs. To calculate the construct scores for a variable that is dependent on many indicators, the indicators are given the same weights (Hair Jr. et al., 2016). This study tested one main hypothesis and six sub-hypotheses. The following figures show the path coefficients, P-values, and T-values for all the tested hypotheses:

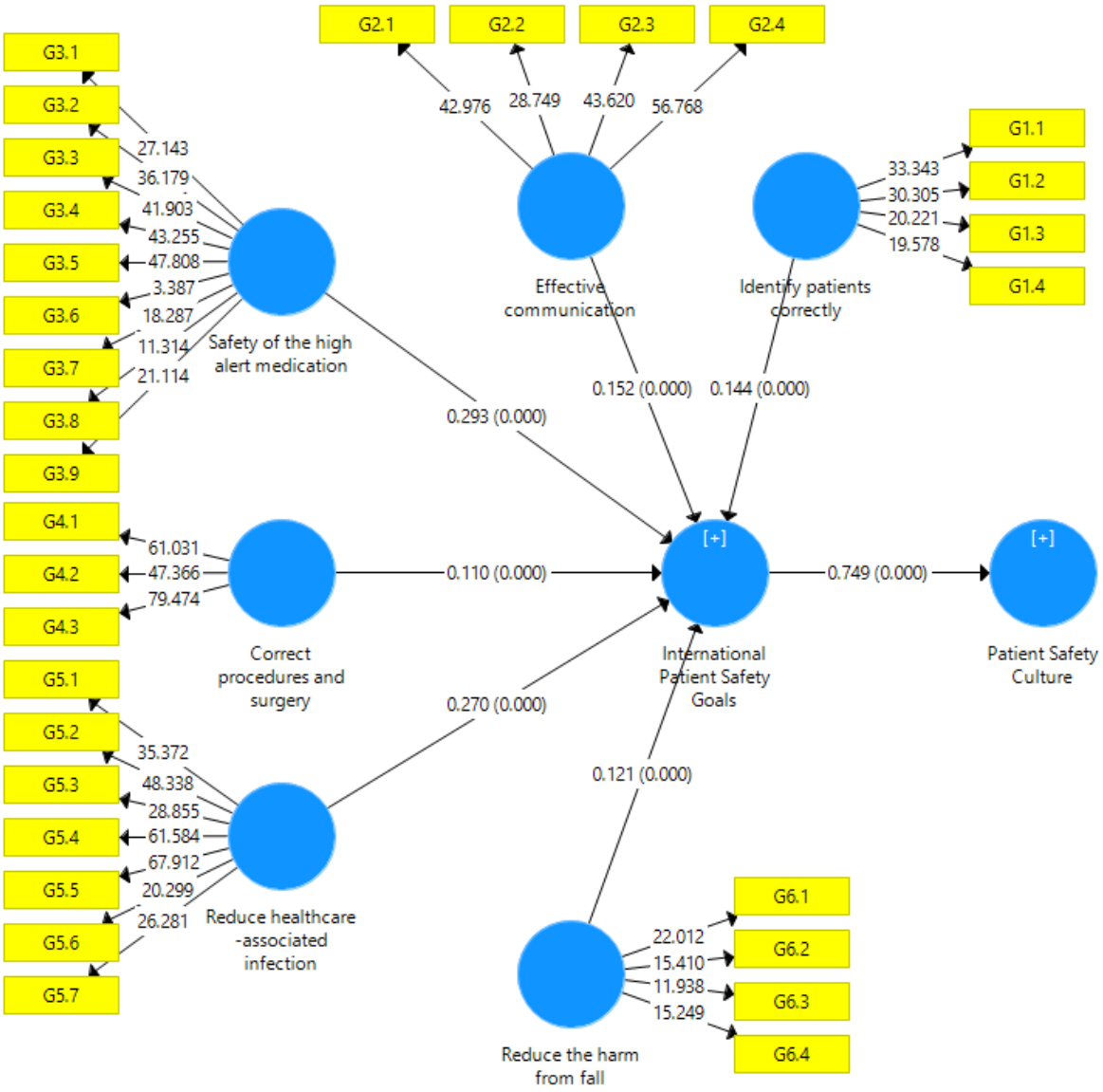

Figure (4.5) Path coefficient and (P-Value) for the ain Hypothesis

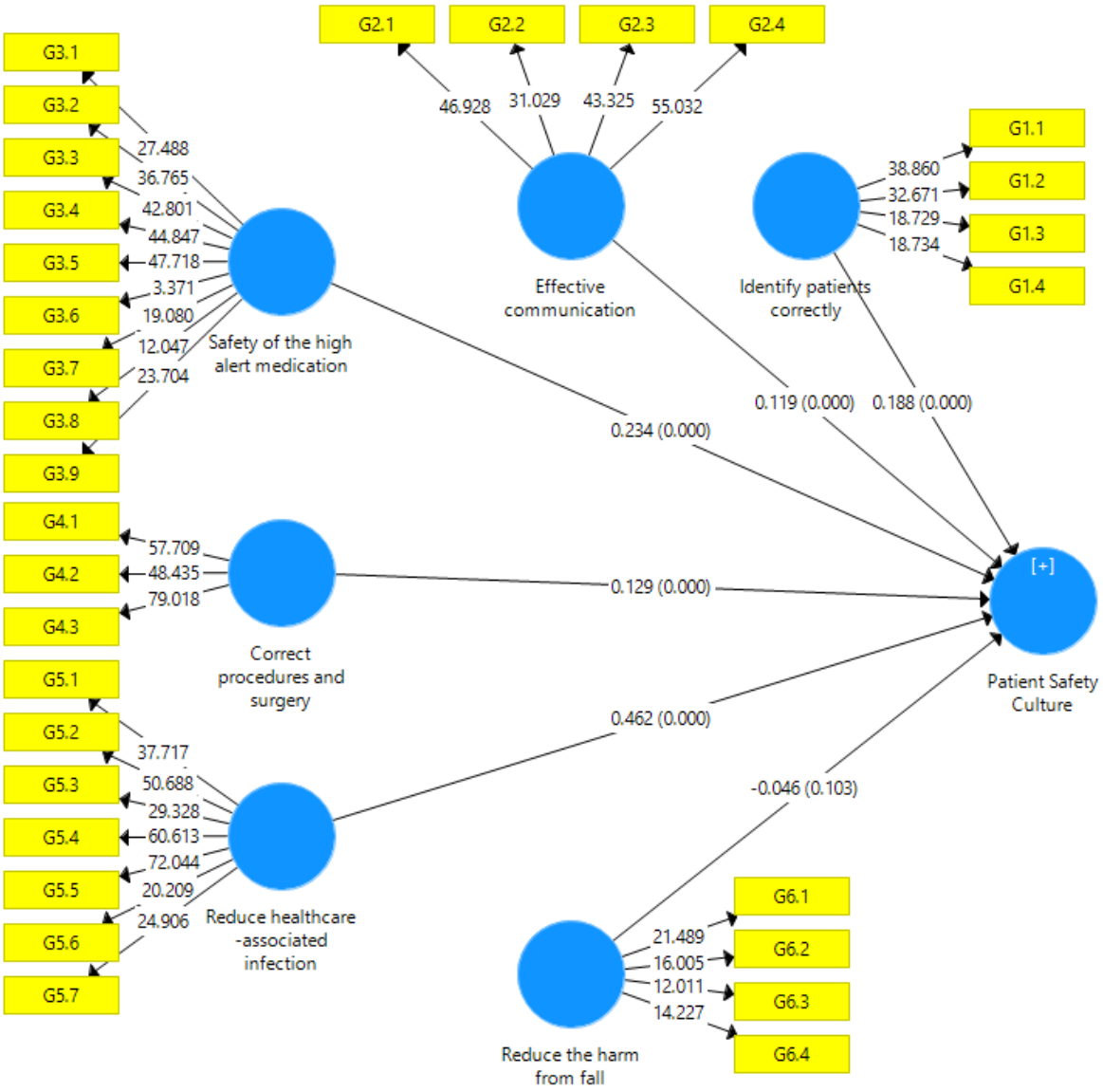

Figure (4.6) Path Coefficient and P-Values for the Sub-Hypotheses

From figures (4.5) and Figure (4.6) and appendix (9) and (10) the results of the hypotheses are as follows:

First main hypothesis

Table (4.25): First Main Hypothesis path analysis

	Path coefficient	Standard Deviation	T-Value	P-Value
IPSG's -> Patient Safety Culture	0.749	0.001	83.21	≤0.001**

Highly Significant **P≤ 0.01, significant *P≤ 0.05

From table (4.25) the study found that the path coefficient between the IPSGs and PSC in Palestinian hospitals, according to the medical staff opinions, is positive with a high value of (0.749) which indicates that the increase in the implementation of the IPSGs by one degree (standard deviation unit) results in the increase of (0.749) degrees in the patient safety culture, also we find that the value of (T=83.210) is significant at (P≤0.001) which indicates a strong significance level, which in turn validates the relationship between the IPSGs and PSC in Palestinian hospitals and that PSC in Palestinian hospitals is positively affected by the IPSGs.

From table (4.25), the results of the study indicate that the path coefficient between the IPSGs and PSC in Palestinian hospitals, according to the medical staff's opinions, is positive with a high value of (0.749), which indicates that the increase in the implementation of the IPSGs by one degree (standard deviation unit) results in an increase of (0.749) degrees in the PSC. We also find that the value of (T = 83.210) is significant at (P≤0.001), which indicates a strong significance level, which in turn validates the relationship between the IPSGs and PSC in Palestinian hospitals and that PSC in Palestinian hospitals is positively affected by the IPSGs.

Sub-hypotheses

Table (4.26): Sub-hypotheses path analysis

	Path coefficient	Standard Deviation	T-Value	P-Value
Identify patients correctly -> Patient Safety Culture	0.188	0.034	5.567	≤0.001 **
Effective communication -> Patient Safety Culture	0.119	0.017	6.951	≤0.001 **
Safety of the high alert medication -> Patient Safety Culture	0.234	0.019	12.476	≤0.001 **
Correct procedures and surgeryies -> Patient Safety Culture	0.129	0.012	10.299	≤0.001 **
Reduce healthcare -associated infection -> Patient Safety Culture	0.462	0.019	23.782	≤0.001 **
Reduce the harm from fall -> Patient Safety Culture	-0.046	0.028	1.632	0.103

Highly Significant **P≤ 0.01, significant *P≤ 0.05

From table (4.26) the following conclusions could be made:

1. The path coefficient between the implementation of goal (1): Identify patients correctly and PSC in Palestinian hospitals is positive with a value of (0.188), which indicates that the increase in the implementation of goal (1) by one degree (unit) results in an increase of (0.188) degrees in the PSC. Also, we find that the value of (T = 5.567) is significant at (P≤0.001), which indicates a strong significance level, which in turn validates the relationship between the implementation of goal (1) and PSC in Palestinian hospitals and that PSC in Palestinian hospitals is positively affected by the degree that a hospital identifies its patients correctly.
2. The path coefficient between the implementation of goal (2): Effective communication and PSC in Palestinian hospitals is positive with a value of (0.119) which indicates that the increase in the implementation of goal (2) by one degree (unit) results in the increase of (0.119) degrees in the PSC; we also find that the value of (T=6.951) is significant at (P≤0.001), which indicates a strong significance level, which in turn validates the relationship between the implementation of goal (2) and PSC in Palestinian hospitals and that PSC in Palestinian hospitals is positively affected by the degree that a hospital conducts effective communications.
3. The path coefficient between the implementation of goal (3): Safety of the high alert medication and PSC in Palestinian hospitals is positive with a value of (0.234) which indicates that the increase in the implementation of goal (3) by one degree (unit) results in the increase of (0.234) degrees in the PSC; we also find that the value of (T=12.476) is significant at (P≤0.001), which indicates a strong significance level, which in turn validates the relationship between the implementation of goal (3) and PSC in Palestinian hospitals, and that PSC in Palestinian hospitals is positively affected by the degree that a hospital pays attention to the safety of the high alert medication.
4. The path coefficient between the implementation of goal (4): correct procedures and surgeries and PSC in Palestinian hospitals is positive with a value of (0.129), which indicates that the

increase in the implementation of goal (4) by one degree (unit) results in the increase of (0.129) degrees in the PSC. We also find that the value of (T=10.299) is significant at (P≤0.001), which indicates a strong significance level, which in turn validates the relationship between the implementation of goal (4) and PSC in Palestinian hospitals and that PSC in palestinian hospitals is positively affected by the degree that a hospital corrects procedures and surgeries.

5. The path coefficient between the implementation of goal (5): reduce healthcare-associated infection and PSC in Palestinian hospitals is positive with a value of (0.462), which indicates that the increase in the implementation of goal (5) by one degree (unit) results in the increase of (0.462) degrees in the PSC. We also find that the value of (T=23.782) is significant at (P≤0.001), which indicates a strong significance level, which in turn validates the relationship between the implementation of goal (5) and PSC in Palestinian hospitals and that PSC in Palestinian hospitals is positively affected by the degree that a hospital reduces healthcare-associated infection.
6. The path coefficient between the implementation of goal (6): reduce the harm from falls and PSC in Palestinian hospitals is negative with a value of (-0.046), which indicates that there is no significant effect of goal (6) on PSC in the Palestinian hospitals, and that the value of (T=1.632≤1.96) is not significant at (P=0.103≥0.05).

There are no statistical differences in the responses regarding PSC due to their demographic and institutional factors.

1. Gender

To test this hypothesis, an Independent Sample T-test was conducted as follows:

Table (4.27)

Independent Sample T-test (Gender)

	Gender	Frequency	Mean	STDEV	T-Value	P-Value
Patient Safety Culture	Male	254	3.8530	0.4715	3.666	≤0.001**
	Female	82	4.0731	0.4755		

Highly Significant **P≤ 0.01, significant *P≤ 0.05

Table (4.27) shows that (P-Value ≤ 0.001) the null hypothesis is rejected, indicating statistically significant differences in responses on the subject of PSC due to gender, where the average response for males was (0.220), which is less than the average response for females.

2. Age

To test this hypothesis a One-way ANOVA test was conducted as follows:

Table (4.28)

One-Way ANOVA (Age)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0.697	3	0.232	1.003	0.392
Within Groups	76.888	332	0.232		
Total	77.585	335			

Highly Significant **P≤ 0.01, significant *P≤ 0.05

Table (4.28) shows that p-value ≥ 0.05, the null hypothesis is accepted indicating that there are no statistically significant differences between the responses due to age.

3. Educational qualification

To test this hypothesis a One-way ANOVA test was conducted as follows:

Table (4.29)

One-Way ANOVA (Educational Qualification)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4.644	4	1.161	5.268	≤0.001**
Within Groups	72.941	331	0.220		
Total	77.585	335			

Highly Significant **P≤ 0.01, significant *P≤ 0.05

Table (4.29) shows that p-value ≤ 0.05, the null hypothesis is rejected, indicating that there are statistically significant differences between the responses due to educational qualification. An LSD multiple comparison test was carried out to check for these differences, and the results are shown in Table 4.30:

Table (4.30)

LSD multiple comparison test (Educational Qualification)

Educational Qualification			Mean Difference	Std. Error	Sig.
LSD	Diploma (2yrs)	Bachelor's Degree	-0.13059	0.08579	0.129
		Postgrad Diploma	-.76866*	0.19484	0.000
		Specialty	0.13468	0.14907	0.367
		Higher education	-0.21856	0.11759	0.064
	Bachelors' Degree	Diploma (2yrs)	0.13059	0.08579	0.129
		Postgrad Diploma	-.63807*	0.17989	≤0.001
		Specialty	.26527*	0.12891	0.040
		Higher education	-0.08796	0.09068	0.333
	Postgrad Diploma	Diploma (2yrs)	.76866*	0.19484	≤0.001
		Bachelors' Degree	.63807*	0.17989	≤0.001
		Specialty	.90334*	0.21730	≤0.001

		Higher education	.55011*	0.19704	0.006
	Specialty	Diploma (2yrs)	-0.13468	0.14907	0.367
		Bachelors' Degree	-.26527*	0.12891	0.040
		Postgrad Diploma	-.90334*	0.21730	≤0.001
		Higher education	-.35324*	0.15194	0.021
	Higher education	Diploma (2yrs)	0.21856	0.11759	0.064
		Bachelors' Degree	0.08796	0.09068	0.333
		Postgrad Diploma	-.55011*	0.19704	0.006
		Specialty	.35324*	0.15194	0.021

Before the LSD test was carried out, the researcher grouped master's degree and doctoral degree holders into one group called "higher education" because this test can't be carried out if a group has less than one observation, which is the case with the doctoral degree group. Table 4.30 shows that there are statistically significant differences at ($p \leq 0.05$) between diploma holder responses (2 years) and postgrad diploma holder responses regarding PSC and that the postgrad diploma holders had a better understanding of it with a mean difference of 0.76866. It also shows that there are statistically significant differences at ($p \leq 0.05$) between bachelors' degree holder responses and postgraduate diploma holder responses towards PSC, with postgraduate diploma having a (0.63807) high mean, and that there are statistically significant differences at ($p \leq 0.05$) between bachelors' degree holder responses and specialty holder responses towards PSC, with bachelors' degree holders having a (0.26527) high mean.

Table 4.30 also shows that there are statistically significant differences at ($p \leq 0.05$) between diploma holder responses and all other group responses towards PSC, with high means of (0.78866, 0.63807, 0.90334, 0.55011) for (diploma, bachelors', specialty, and higher education) holders, respectively. As for specialty holder responses, the results showed statistically significant differences at ($p \leq 0.05$) with bachelors' degree holder responses, which had a (0.90334) mean difference; postgrad

diploma holder responses had a (0.90334) mean difference, and that higher education holder responses had a (0.35324) mean difference.

4. Career experience

To test this hypothesis a One-way ANOVA test was conducted as follows:

Table (4.31): One-Way ANOVA (career experience)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0.545	3	0.182	0.782	0.504
Within Groups	77.040	332	0.232		
Total	77.585	335			

Highly Significant **P≤ 0.01, significant *P≤ 0.05

Table 4.31 shows that the p-value ≥ 0.05; the null hypothesis is accepted indicating that there are no statistically significant differences in the responses between groups due to career experience.

5. Specialty

To test this hypothesis a One-way ANOVA test was conducted, and the results are presented as follows:

Table (4.32): One-Way ANOVA (Specialty)

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	4.644	4	1.161	5.268	≤0.001**
Within Groups	72.941	331	0.220		
Total	77.585	335			

Highly Significant **P≤ 0.01, significant *P≤ 0.05

Table 4.32 shows that the p-value ≤ 0.05; the null hypothesis is rejected, indicating that there are statistically significant differences in the responses between groups due to specialty. An

LSD Multiple comparison test was carried out to check for these differences, as shown in table (4.33):

Table (4.33): LSD Multiple Comparison Test (Specialty)

Specialty		Mean Difference	Std. Error	Sig.
Medical lab	Physician	1.25846*	0.25324	≤0.001
	Nurse	1.03297*	0.23446	≤0.001
	Pharmacist	1.22321*	0.32943	≤0.001
physician	Medical lab	-1.25846*	0.25324	≤0.001
	Nurse	-.22549*	0.10284	0.029
	Pharmacist	-0.03524	0.25324	0.889
Nurse	Medical lab	-1.03297*	0.23446	≤0.001
	Physician	.22549*	0.10284	0.029
	Pharmacist	0.19024	0.23446	0.418
Pharmacist	Medical lab	-1.22321*	0.32943	≤0.001
	Physician	0.03524	0.25324	0.889
	Nurse	-0.19024	0.23446	0.418

Table 4.33 shows that there are statistically significant differences at ($p \leq 0.05$) between medical lab employees responses regarding PSC and that they had a better understanding of it with a mean difference of (1.258), which is higher than physicians' responses with a mean difference of (1.03297), which is higher than nurses' responses, and (1.22321) which is higher than pharmacists' responses, and it also shows that there are statistically significant differences at ($p \leq 0.05$) between physicians and nurses responses with a mean difference of (0.22549) in favor of the nurses' responses.

6. Institutional factors

To test this hypothesis an Independent Sample T-test was conducted, and the results are presented as follows:

Table (4.34): Independent aample t-test (institutional factors)

	Factor		Frequency	Mean	STDEV	T-Value	P-Value
Patient Safety Culture	Quality department	Yes	334	3.908	0.4724	0.778	0.437
		No	2	3.642	1.7624		
	Department of work	In-patient	303	3.928	0.4712	2.234	0.031
		Out-patient	33	3.711	0.5339		
	Infection control department	Yes	312	3.957	0.4495	8.317	≤0.001
		No	24	3.251	0.3968		
	Infection control officer	Yes	314	3.955	0.4504	7.595	≤0.001
		No	22	3.210	0.3555		
	Hospital Accreditation	Yes	75	4.193	0.4850	5.911	≤0.001
		No	261	3.824	0.4481		

Highly Significant **P≤ 0.01, significant *P≤ 0.05

Table 4.34 shows that there are no statistically significant differences in responses due to the presence of the quality department. The researcher attributes this to an error in the responses as all the hospitals have a quality department but only two respondents did not have the right information, as for the department of work. There were significant differences in responses between Outpatient and Inpatient Departments with an in-patient department worker having a higher mean. As for the infection control (department and/or officer), there was a significant difference in the responses as the hospitals that have an infection control department and/or officer had a higher mean than those who don't; as for accreditation, there was a significant difference in views towards PSC and the hospitals that have accreditation as they had a better understanding of it with a higher mean than those who don't.

Chapter five

Result discussion and recommendations

This chapter discusses the results in relation to the previous studies and recommendations, limitations, and future studies:

5.1Results

5.2 Demographic characteristics discussion

Based on the examination of demographic data, the findings indicate that the proportion of males surpasses that of females, suggesting that a majority of employees in both private and governmental healthcare facilities are male, potentially due to cultural constraints. In relation to age, the predominant demographic consisted of individuals under the age of 30, a finding that aligns with the research conducted by Abousallah (2018). In terms of educational attainment, the bachelor's degree represents the highest level of academic achievement. This aligns with the research conducted by Abousallah (2018), which suggests that individuals who hold this degree possess a greater degree of knowledge and expertise due to their extensive training in hospitals and coursework within their field of study. The demographic data of the research sample was subjected to a descriptive frequency analysis, which revealed that the majority of the participants belonged to the nursing profession. This finding is in line with the 2021 Palestinian Healthcare Annual Report (MOH, 2022), which reported a nurse-to-physician ratio of 1.3. The congruence observed between the present study and prior research as well as national statistics enhances the credibility and generalizability of the study sample with respect to the intended population of interest.

5.3 International patient safety goals results

The Palestinian hospitals have achieved a high level of implementation of the IPSGs, with the most successfully implemented goal being the accurate identification of patients. The study revealed that hospitals and healthcare professionals prioritize patient identification as the primary step in ensuring patient safety. This is followed by the goal of reducing healthcare-associated infections, which can lead to increased harm and medical procedures if left untreated or contracted during

hospital admission. The goal of correct procedures and surgeries is also deemed crucial in ensuring optimal healthcare and patient safety. Additionally, reducing harm from falls and effective communication are also prioritized. However, the goal of ensuring the safety of high alert medication received the lowest degree of importance.

The aforementioned objectives have been deemed significant by the researcher, particularly in relation to the Palestinian healthcare facilities that were included in this investigation. The absence of a specific procedural guideline for the implementation of these goals in most hospitals, excluding those with accreditation such as Alnajah Hospital and Istishari Hospital, mitigates any negative connotations associated with the varying degrees of implementation observed.

The implementation of the IPSGs was observed to be highest in "Al-Najjah Hospital", followed by "Ibn Sena Hospital", "Istishari Hospital", "Palestine Medical Complex", "Alia Hospital", "Jenin Hospital", "Rafedia Hospital", "Al-Ahli Hospital", and "Tulkarm Hospital", while the lowest implementation of IPSGs was noted in "Al-Isra Hospital". The study revealed that hospitals that have obtained accreditation demonstrate a superior comprehension and execution of the aforementioned objectives, whereas non-accredited public hospitals exhibit a lower likelihood of implementing and comprehending the significance of these goals.

5.4Patient safety culture results

What is the current state of PSC in Palestinian hospitals?

The significance of patient safety has been recognized as a fundamental element of hospitals' accomplishments in Palestine, leading to an increase in the number of hospitals that are presenting applications for Joint Commission International Accreditation (JCIA). The An-Najah National University Hospital (NNUH) has recently obtained accreditation. Furthermore, the Ministry of Health and NNUH have collaborated with the World Health Organization's Patient Safety Friendly Hospital Initiative.

Based on the perspective of healthcare professionals, the level of PSC in Palestinian hospitals is deemed to be high, with an average score of 3.907. This finding is in line with the research conducted by Zabin et al. (2022) and Abousallah (2018). The study conducted by the researcher revealed that hospitals which implement the IPSGs and possess accreditation demonstrate higher (PSC) scores. This suggests that a more organized and proficient implementation of these goals has a positive impact on the PSC of a hospital, as evidenced by the accredited hospitals in this study, namely Al-Najjah Hospital and Istishari Hospital. Conversely, hospitals with a lower degree of implementation exhibit lower safety culture scores.

What is the impact of application of the IPSGs on improving PSC in Palestine?

The preceding chapter's findings suggest that IPSGs have a noteworthy favorable influence on PSC in Palestinian hospitals, as perceived by healthcare staff. The present findings corroborate the results obtained by Kalsoom et al. (2022) in their investigation on the determinants of patient safety, as well as those reported by Saaid et al. (2020) in their exploration of the effects of an IPSG training program on PSC, and by Abousallah (2018) in their examination of the influence of international safety goals implementation on PSC. The findings suggest a significant correlation between the IPSGs and the PSC. The sole deviation of this investigation from antecedent research lies in the observation that the implementation of "Reduce the harm from falls" in Palestinian hospitals, despite being prevalent, did not yield a discernible effect on the (PSC) as perceived by healthcare practitioners. The potential correlation between the healthcare approach towards patients in Palestinian hospitals and the incidence of falls among patients, as outlined in the "Reduce the harm from falls" initiative, may be attributed to the prevalent cultural norms in Arabic Muslim societies. Specifically, patients who are at risk of falling are often accompanied by family members who adhere to the tradition of remaining by their loved one's side. Healthcare professionals in these settings may rely on the family members to provide support and assistance to the patient.

5.4.1 Results related to the first question

What is the current state of practice in terms of international safety goals?

Based on the results, it is evident that the level of execution of the "Identify patients correctly" objective was substantial. All the hospitals that participated in this study regarded this goal as particularly significant, concurring with the viewpoints of Abousallah (2018) and Kalsoom et al. (2022). The hospitals placed great emphasis on accurately associating the service or treatment with the patient and correctly identifying them as the intended recipient of the service or treatment. Furthermore, there is a consensus among them that accurate identification is the initial stage in ensuring secure healthcare provision. Notably, "Al-Najah Hospital" exhibited the highest level of adherence to this objective, while "Al-Ahli Hospital" demonstrated the lowest level of compliance. The observed disparity in the execution of the objective can be attributed to the inadequate management of the Ministry of Health (MOH) and the inconsistent implementation of the objective in all hospitals within the West Bank. This underscores the necessity for enhanced execution of policies, strengthened enforcement measures, and increased provision of training and education pertaining to the subject matter. Incorrect patient identification can result in a range of adverse events, including medication errors, transfusion reactions due to receiving blood from a patient with a different blood type, missed diagnoses of life-threatening diseases, unnecessary procedures, and treatment based on incorrect diagnostic lab results.

The IPSG goal of "Effective communication" is deemed crucial by Palestinian hospitals for enhancing healthcare quality. This is attributed to the high degree of implementation observed, which aids in identifying areas where communication has been inadequate and implementing corrective measures to improve it. Effective communication between patients and physicians is crucial for reducing medical errors, as supported by Abousallah (2018) and Kalsoom et al. (2022). The objective in question was found to have been executed to the highest degree at "Al-Najah Hospital", while its implementation was observed to be the least at "Al-Isra Hospital". The researcher has observed that

hospitals and other medical institutions have conventionally adopted a hierarchical structure, wherein physicians occupy the highest rung of the authority ladder, while other healthcare professionals are positioned below them. Consequently, a culture characterized by restricted and inhibited communication tends to emerge, rather than one that fosters transparency and security.

The level of execution of the "Safety of the high alert medication" protocol is significant, and there is a consensus among healthcare facilities that appropriate management of medications is imperative in safeguarding patient well-being as an integral component of their treatment regimen. Improper usage of medication, including those that are available without a prescription, can potentially result in harm. Nonetheless, the administration of high-alert medications in an inappropriate manner may result in exacerbated patient distress and increased harm. This discovery corroborated the results reported by Abousallah (2018). The objective in question was observed to have been executed to the greatest extent at "Al-Najah Hospital", while its implementation was found to be the least at "Al-Isra Hospital". Enhancement of medication safety can be achieved throughout the entire medication-use process through the identification of high-alert medications and subsequent implementation of suitable measures. The mitigation of errors can be achieved through the implementation of preventive measures, enhancing visibility, and/or employing damage control tactics.

The study reveals a high level of implementation of "correct procedures and surgeries" in the hospitals under investigation. The hospitals prioritize the evaluation of all surgical procedures prior to their execution, taking into account the individual requirements of patients, such as age, weight, and height. This finding is consistent with the research conducted by Abousallah (2018) and Kobayashi et al. (2021). The objective in question was found to have been executed to the greatest extent in "Al-Najah Hospital", while its implementation was observed to be the least in "Al-Isra Hospital". The researcher ascribes the low degree to the hospital's limited scale, in addition to the absence of systematic implementation of quality measures at Al-Isra hospital.

The level of execution of the initiative "reduce healthcare-associated infection" is considerable. A significant number of healthcare establishments encounter challenges in preventing and controlling infections, and there is growing apprehension among patients and healthcare practitioners regarding the escalating incidence of healthcare-associated infections. The findings indicate that with the exception of "Al-Isra Hospital," every hospital surveyed has an infection control department or officer. The aforementioned results corroborate the findings of Abousallah's (2018) study. The objective was most effectively executed at "Al-Najah Hospital" while it was least effectively executed at "Al-Isra Hospital".

The implementation level of the "reduce the harm from falls" initiative is significant. Acute care hospitals recognize that falls represent a significant concern and can result in fatal consequences, particularly for elderly patients. Consequently, it is imperative to conduct research and implement measures aimed at preventing falls. The outcome was in line with Abousallah's (2018) research, indicating that the objective was most effectively executed in "Al-Najah Hospital" and least effectively in "Al-Isra Hospital."

How does identifying patients correctly contribute to the patient safety culture?

The results show that there is a relationship between the implementation of "Identify patients correctly" and PSC in Palestinian hospitals and that PSC in Palestinian hospitals is positively affected by the degree that a hospital identifies its patients correctly. This result is consistent with what Abousallah (2018) found in studying the impact of IPSGs on PSC in Jordanian private hospitals in Amman.

Do effective communications improve the patient safety culture?

The study results validate the relationship between the implementation of "Effective communication" and PSC in Palestinian hospitals and that PSC in Palestinian hospitals is positively affected by the degree that a hospital conducts effective communications, and this result is consistent with what Abousallah (2018) found in studying the impact of IPSGs on PSC in Jordanian private hospitals in

Amman.

How is the PSC affected by improving the safety of high-alert medications?

The study results validate the relationship between the implementation of "Safety of the high alert medication" and PSC in Palestinian hospitals and that PSC in Palestinian hospitals is positively affected by the degree that a hospital pays attention to the safety of the high alert medication, and this result is consistent with what Abousallah (2018) found in studying the impact of IPSGs on PSC in Jordanian private hospitals in Amman.

How does ensuring safe surgery affect patient safety culture?

The study results validate the relationship between the implementation of "Correct procedures and surgeries" and PSC in Palestinian hospitals and show that PSC in Palestinian hospitals is positively affected by the degree to which a hospital implements correct procedures and surgeries, and this result is consistent with what Abousallah (2018) found in studying the impact of IPSGs on PSC in Jordanian private hospitals in Amman.

Does the reduction of the risk of health care-associated infections improve the patient safety culture?

The study results validate the relationship between the implementation of "Reduce healthcare-associated infection" and PSC in Palestinian hospitals and that PSC in Palestinian hospitals is positively affected by the degree that a hospital reduces healthcare-associated infection, and this result is consistent with what Abousallah (2018) found in studying the impact of IPSGs on PSC in Jordanian private hospitals in Amman.

Does the reduction of the risk of patient harm resulting from falls improve the patient safety culture?

The study results indicate that there is no significant effect of "Reduce the harm from falls" on PSC in the Palestinian hospitals, and this result is not consistent with what Abousallah (2018) found in studying the impact of IPSGs on PSC in Jordanian private hospitals in Amman. The researcher finds

that this result is due to the different nature of Palestinian society, as this issue is not an issue for debate or discussion; it's a built-in attribute of the overall culture to help and take care of sick people by their relatives and friends.

5.5 Recommendations

The study recommends the following:

For top level management in hospitals:

1. It is imperative for upper-level management to accord priority to patient safety in their healthcare policies and allocate adequate resources to facilitate the implementation of (IPSGs) in healthcare facilities. It is imperative that they collaborate closely with healthcare organizations to ensure the efficacious implementation and adherence monitoring of (IPSGs).
2. It is imperative to establish policies aimed at guaranteeing that healthcare practitioners receive sufficient instruction on (IPSGs) and comprehend the significance of cultivating a PSC within healthcare environments. It is imperative to devise strategies that account for cultural variables that could potentially influence the execution of IPSGs across diverse contexts.
3. It is recommended that upper-level management implement a mechanism for the documentation and communication of unfavorable occurrences and close calls within healthcare environments, with the aim of fostering openness and responsibility.
4. It is recommended that policies be formulated to facilitate the participation of patients and their families in healthcare decision-making processes, while also guaranteeing that they are adequately informed and educated regarding their entitlements and obligations.
5. It is recommended that policies be formulated to provide incentives to healthcare organizations that exhibit a robust dedication to ensuring patient safety and the efficient execution of (IPSGs).
6. It is imperative for upper-level management to promote the exploration and innovation of novel technologies and methodologies aimed at enhancing patient safety within healthcare environments.

7. It is imperative to establish policies that guarantee patients are adequately informed about their entitlements and obligations, as well as providing them with the necessary resources to make informed decisions regarding their healthcare.

For health care professionals:

1. Healthcare professionals should prioritize patient safety in their practice and be familiar with the IPSGs and their implementation in their healthcare setting.
2. Professionals should receive training on IPSGs to ensure that they understand their importance and can effectively implement them in their practice.
3. Healthcare professionals should engage in open communication with patients and their families to involve them in the decision-making process and provide them with information about their care.
4. Healthcare professionals should work collaboratively with their colleagues to promote best practices and the sharing of information to improve PSC.
5. Healthcare professionals should report adverse events and near-misses in healthcare settings to encourage transparency and accountability.
6. Professionals should actively engage in continuing education and professional development to stay up-to-date on the latest developments in PSC.
7. Healthcare professionals should promote a culture of safety within their organization and encourage their colleagues to prioritize patient safety in their practice.
8. Professionals should be mindful of cultural factors that may impact PSC in their healthcare setting and work to adapt IPSGs to align with local values and beliefs.
9. Healthcare professionals should advocate for policies and procedures that support a PSC in healthcare settings.

10. Professionals should strive to create a safe and respectful environment for patients and their families, including addressing any issues related to discrimination, bias, or harassment.

Conclusion:

The present study examined the perceived influence of IPSGs on PSC in Palestinian hospitals, as reported by healthcare professionals. Ultimately, the findings suggest that IPSGs have an impact on PSC in this context. The research revealed a noteworthy favorable impact of Interprofessional Practice and Education Groups (IPSGs) on (PSC) within healthcare facilities in Palestine, which is consistent with prior studies conducted in this area. Nevertheless, the research revealed that the implementation of the "Reduce the harm from falls in Palestinian hospitals" initiative did not have a significant effect on the perception of (PSC) among healthcare practitioners. This outcome could be attributed to cultural aspects concerning the involvement of family members in patient care.

The results of the study indicate that the implementation of IPSGs is imperative for enhancing PSC within healthcare environments. It is imperative for policymakers, healthcare professionals, and healthcare organizations to accord utmost importance to patient safety and foster a safety-oriented culture that places significant emphasis on the adoption of IPSGs. It is imperative to take into account cultural factors in order to ensure that IPSGs are in accordance with the prevailing local values and beliefs.

Subsequent investigations ought to examine the influence of Interprofessional Practice and Education Guidelines (IPSGs) on the culture of patient safety within diverse cultural settings, with the aim of ascertaining whether comparable cultural elements impact their adoption. It is recommended that further inquiry be conducted to determine the underlying causes for the lack of impact of the "Reduce the harm from falls" initiative on PSC in Palestinian hospitals, with the aim of enhancing its efficacy in enhancing PSC.

In the realm of healthcare, enhancing the culture of patient safety ought to be a topmost concern for all parties involved, and the employment of IPSGs should be regarded as a crucial mechanism in attaining this objective.

Strengths and limitations

- **Strengths**: This study can be generalized to governmental and private hospitals, as the researcher took 10 hospitals that are distributed over the main geographical areas of the West Bank of Palestine. The first study in Palestine studied the relationship between IPSGs and PSC in governmental and private hospitals that attained and did not attain accreditation. The analysis of the results found that there is a significant relationship between the IPSGS and PSC.
- **Limitations**: This research was based on a convenient sample. This was the only available approach for the researcher to use, as there is no database or register to draw samples from in the healthcare system in Palestine. In this study, only a questionnaire was distributed; no interviews were done, so there may be a shortage in the collected data.

Future researches

Based on the study's findings, the following recommendations for future research can be made:

1. Investigate the impact of IPSGs on PSC in different healthcare settings, such as primary care centers, outpatient clinics, and long-term care facilities.
2. Examine the relationship between PSC and healthcare outcomes such as patient satisfaction, healthcare-associated infections, and medication errors.
3. Explore the factors that influence the implementation of IPSGs, including organizational culture, leadership support, and resource availability.

4. Investigate the impact of IPSGs on PSC in different cultural contexts, particularly in societies where the role of family members in patient care is significant.
5. Study the impact of IPSGs on healthcare professionals' attitudes towards patient safety and their willingness to report adverse events and near-misses.
6. Assess the effectiveness of different strategies for promoting a culture of safety in healthcare settings, such as training programs, communication strategies, and reporting systems.
7. Investigate the impact of IPSGs on a PSC in low-resource settings, where resource constraints may limit their implementation.
8. Study the impact of incorporating patient and family involvement in the implementation of IPSGs on PSC.
9. Explore the impact of IPSGs on healthcare professionals' job satisfaction and burnout levels.
10. Investigate the impact of new technologies and innovations on the implementation of IPSGs and a PSC in healthcare settings.

Overall, future research should focus on the effectiveness of IPSGs in improving patient safety culture and outcomes in different healthcare settings and cultural contexts, as well as the factors that influence their implementation and effectiveness.

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Appendix (1): Questionnaire

The impact of implementing IPSG's on PSC among Palestinian health care professionals

Section 1: Background Questions

I would like to know some basic background information about you in this part. Please circle for the appropriate answer.

1. Gender	☐ Male	Female☐				
2.Age: ----------years						
3.Educational Qualification	Diploma(2yrs)	Bachelor's degree	Post grad diploma	Specialty	Master's degree	Doctoral degree
4. Career experience	Less than1 year	1to 5years	6 to 10years	11 or more years		
5. Specialty	Medical lab	physiotherapist	physician	Nurse	Pharmacist	Other, please specify: ----------
6. Department of Work	☐ In-Patient Department	☐ Out-Patient Department				
7. Is there a quality department/ quality officer at your hospital?	☐ Yes	☐ No				
8.Is there an infection control	☐ Yes	☐ No				

program at your hospital?		
9.Is there an infection control officer at your hospital?	☐ Yes	☐ No
10. Is your hospital have accreditation?	☐ Yes	☐ No

Section2: The following items indicate IPSG's. Please respond to these questions based on your perception by putting a circle around the answer.1 = strongly disagree (SD), 2 = disagree(D), 3 =Neutral(N), 4 = agree(A), 5 = strongly agree (SA).

	Goal 1: Identify patients correctly	SD	D	N	A	SA
1	Identities of patients are verified before any medical procedure is performed					
2	The hospital is committed to providing the patient with the bracelet					
3	Immediately after taking a sample from patient, the hospital labels it					
4	Patient data are checked by the treating nurse or physician to ensure that they are complete					
	Goal 2: Effective communication					
1	The hospital has a clear written policy for verbal orders					
2	Drug order signed on time of administration by nurses					
3	The hospital Follows Standardized approach for hands off process					
4	The hospital has a policy for reporting critical lab results and radiology results					
	Goal 3: Safety of the high alert medication					
1	The hospital identifies a high-risk drug list with high alert sign.					

2	High alert medication prepared by the pharmacist and administered and signed by the nurse.					
3	The hospital removes the high-alert drugs from open departments.					
4	A red label is placed on the high alert medication when dispensed from the pharmacy to the open department					
5	The hospital separates similar medications by name in different places					
6	The hospital identifies in writing its list of look-alike/sound-alike medications					
7	The hospital annually reviews and updates its list of look-alike/sound-alike medications.					
8	Double checked and signed by two nurses to manage and prevent errors					
9	The physician / nurse tells the patient about the medication, its properties and possible side effects.					
Goal 4: Correct procedures and surgery						
1	The Surgeon or his/her assistant mark the Site of surgery with a visual mark.					
2	Before performing the surgery, all team members approve the timeout check of the correct surgery					
3	Anesthesia data forms are completed by anesthetist / technician					
4	Time out check protocol is done just before starting any surgical procedure by the nurse and the surgeon.					
Goal 5: Reduce healthcare -associated infection						
1	Health care providers are committed to hand washing protocol					
2	Hand washing instructions are available on all basins.					
3	Hand washing is required for every medical procedure/patient contact.					
4	The jewelers are removed during work					
5	Every medical procedure with direct contact with body fluids of patients requires the use of protective gloves.					
6	The hospital identifies and implements a process to manage and prevent (healthcare associated infection) such as CAUTI, by applying the bundles of prevention for all patients who meet the criteria					
7	In the hospital, sterilized appliances, equipment and tools are available					
Goal 6: Reduce the harm from fall						

1	There is a policy to ensure safety for patients from fall while in hospital					
2	To deal with cases of patient fall, the precautions are put in place					
3	To deal with unexpected events, a special incident form is applied					
4	Cases of falls are reported and documented for follow up and indicator calculation					

Section 3: Healthcare providers' perception about patient safety culture.

Please select the most appropriate answer according to your own perception of patient safety at your hospital / healthcare facility?

Supervisor/Manager Expectations & Actions Promoting Patient Safety		SD	D	N	A	SA
1	The Supervisor or manager seriously considers staff suggestions for improving patient safety					
2	If the number of patients in the department increases, the manager asks the team to work quickly and concisely					
3	Concerns about patient safety are addressed by the supervisor or the manager					
Organizational Learning—Continuous Improvement						
1	Safety measures are taken by the hospital to improve patient care					
2	The medical errors are used as a tool for positive change					
3	A patient safety evaluation is conducted regularly in the hospital					
4	Prior to affecting the patient's safety, the errors are corrected.					
Non punitive Response to Errors						
1	Work errors are handled transparently.					
2	Instead of focusing on penalties, the focus is on addressing errors.					
3	Errors can be recorded in the job file without fear or hesitation					
Staffing						
1	There is enough staff to manage the workload with minimal risk on patient safety					
2	If the workload increases, temporary staff can be used to provide better and safe care					

3	In the event of an increase in workload, the staff work more quickly with less safety					
Management Support for Patient Safety						
1	An environment that promotes patient safety is provided by hospital management.					
2	Patient safety is a priority for hospital management					
3	Patient safety is important to management always, not just when mistakes are made.					
Teamwork Across and within Units						
1	In the department, the staff members support one another.					
2	staff work together to get the job done quickly (if units are overloaded).					
3	In this department, staff members treat one another with respect					
4	The hospital departments work well together for best patient care					
5	There is good cooperation among hospital units that must collaborate.					
6	The hospital departments collaborate to improve patient safety					
7	Working with other departments is frequently simple and safe.					
Handoffs & Transitions						
1	When transferring patients between departments, errors are relatively rare.					
2	Important patient information is rarely lost throughout a shift.					
3	Problems rarely occur in the exchange of information across hospital departments					
4	Changing shifts is not a major concern for patients' safety at this hospital.					
Feedback & Communication About Error						
1	When staff notice things that are affecting the safety of patient, they speak to supervisor /manager freely with no fear.					
2	The staff have the right to ask about decisions made by management about incidents they were involved in or were occurred in their department. .					
3	The staff aren't afraid to ask questions when something does not seem right.					

4	Errors that may occur within the department are reported to management / supervisor					
5	Feedback about changes / errors is given based on event reports to the staff of the department					
6	The department discusses ways to avoid repetition of similar mistakes.					
7	Corrected errors are documented.					
8	harmless errors to the patient are documented					
9	serious errors that harm the safety of the patient are documented					
Overall Perceptions of Patient Safety						
1	Hospital procedures and policies are effective in preventing errors in my hospital					
2	Serious errors are relatively rare in this hospital					
3	In this department, the number of errors in patient safety is few					

Appendix (2): List of arbitrators'

#	Arbitrator name	Title	Institution
1	Dr. Asma M. Imam	Associate Professor	Al Quds University
2	Eba’a Barghouthi	Director of Quality Department	Arab Hospitals Group
3	Dr. Wasim Sultan	Assistant Professor	Palestine Polytechnic University
4	DR. Motasem Hamdan	Professor	Al Quds University

Appendix (3): Approval from AAUP

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 Impact of Application of International Safety Goals on Patient Safety Culture: A Field Study in Private Hospitals That Working in the West Bank of Palestine

Submitted by: Rafeef Nader Hafeth Qubbaj

Date received: 20 August 2022

Date reviewed: 21 September 2022

Date approved: 21 September 2022

Your Study titled **"The Impact of Application of International Safety Goals on Patient Safety Culture: A Field Study in Private Hospitals That Working in the West Bank of Palestine"** With archived number 2022/C/13/N was reviewed by the Arab American University IRB committee and was approved on 21st September 2022.

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

General Conditions:

1. Valid for 1 year 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 (4): Informed consent

أنا ..... (اسم المشارك / اختياري) أوافق بموجبه على المشاركة في البحث (دراسة استبيان) المحددة أدناه:

عنوان الدراسة: أثر تطبيق الاهداف الدولية للسلامه على ثقافة سلامة المرضى لدى المهنيين الصحيين الفلسطينيين.
لاستكمال متطلبات الحصول على درجة الماجستير في الجامعه العربيه الامريكيه.
(برنامج ادارة الجوده)

لقد تم إخباري عن طبيعة البحث من حيث المنهجية والهدف من هذا البحث, كما تم اخباري أنه سيتم المحافظة على سرية معلوماتي الشخصيه .بعد معرفة وفهم جميع المزايا والعيوب المحتملة لهذا البحث ، أوافق طواعية بمحض إرادتي على المشاركة في البحث المحدد أعلاه .أفهم أنه يمكنني الانسحاب من هذا البحث في أي وقت دون إبداء أي سبب على الإطلاق.

توقيع المشارك:---------- التاريخ:----------
توقيع الشاهد:---------- التاريخ :----------

أؤكد أنني أوضحت للمشارك طبيعة وهدف البحث المذكور أعلاه.

.توقيع الباحث:---------- التاريخ:----------

Appendix (5): Approval from private and governmental hospitals

State of Palestine
Ministry of Health
General Directorate of Education in
Health and Scientific Research

دولة فلسطين
وزارة الصحة
الإدارة العامة للتعليم الصحي
والبحث العلمي

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

الرقم: ع ت/ ١٨٤٣/ ٢٠٢١
التاريخ: ٢٠٢١/٧/٧

عطوفة الوكيل المساعد لمجمع فلسطين الطبي المحترم،،،
الأخ مدير عام الادارة العامة للمستشفيات المحترم،،،
تحية واحترام...

الموضـــوع: تسهيل مهمة بحث

يرجى التكرم بتسهيل مهمة الطالبة: رفيف نادر قبج– ماجستير ادارة جودة– الجامعة العربية الامريكية، لعمل بحث بعنوان:

" The Impact of implementing International Safety Goals on Patient Safety Culture among Palestinian Healthcare professionals "

حيث سيقوم الباحث بجمع معلومات من خلال تعبئة استبانة الدراسة من الكادر الصحي، علما ان البحث باشراف د. محمد خليف، وذلك في:

- مجمع فلسطين الطبي
- مستشفى رفيديا – مستشفى عالیه – مستشفى طولكرم

على ان يتم الالتزام بالمحافظة على اخلاقيات البحث العلمي وسرية المعلومات.
على ان يتم الالتزام بجميع تعليمات واجراءات الوقاية والسلامة الصادرة عن وزارة الصحة بخصوص جائحة كورونا، وتحت طائلة المسؤولية. وإبراز شهادة التطعيم قبل دخول مرافق وزارة الصحة.
على ان يتم تزويد الوزارة بنسخة PDF من نتائج البحث، التعهد بعدم النشر لحين الحصول على موافقة وزارة الصحة.
ان يكون واضح في البحث انه بالشراكة مع وزارة الصحة وانها مصدر المعلومات.

مع الاحترام...

رئيس وحدة التعليم الصحي والبحث العلمي

نسخة: عميد كلية الدراسات العليا المحترم/ الجامعة العربية الامريكية

Telfax.:09-2333901 scientificresearch.dep@gmail.com تلفاكس: 09-2333901

State of Palestine
Ministry of Health
General Directorate of Education in
Health and Scientific Research

دولة فلسطين
وزارة الصحة
الإدارة العامة للتعليم الصحي
والبحث العلمي

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

الرقم: ع.ب/ ١٩٦٥/ ٢٠٢٢ ع.ب
التاريخ: ١٩/١٠/٢٠٢٢ ع.ب

الأخ مدير عام الادارة العامة للمستشفيات المحترم،،،

تحية واحترام...

الموضـــوع: تسهيل مهمة بحث

يرجى التكرم بتسهيل مهمة الطالبة: رفيف نادر قبج– ماجستير ادارة جودة– الجامعة العربية الامريكية، لعمل بحث بعنوان:

" The Impact of implementing International Safety Goals on Patient Safety Culture among Palestinian Healthcare professionals "

حيث سيقوم الباحث بجمع معلومات من خلال تعبئة استبانة الدراسة من الكادر الصحي، علما ان البحث باشراف د. محمد خليف، وذلك في:

– مستشفى جنين

على ان يتم الالتزام بالمحافظة على اخلاقيات البحث العلمي وسرية المعلومات.
على ان يتم الالتزام بجميع تعليمات واجراءات الوقاية والسلامة الصادرة عن وزارة الصحة بخصوص جائحة كورونا، وتحت طائلة المسؤولية. وابراز شهادة التطعيم قبل دخول مرافق وزارة الصحة.
على ان يتم تزويد الوزارة بنسخة PDF من نتائج البحث، التعهد بعدم النشر لحين الحصول على موافقة وزارة الصحة.

مع الاحترام...

د. عبد الله القواسمي
رئيس وحدة التعليم الطبي والبحث العلمي

نسخة: عميد كلية الدراسات العليا المحترم/ الجامعة العربية الامريكية

Appendix (6): Power test for sample significance

	Test Value = 0			
paragraph	t	df	Sig. (2-tailed)	Mean Difference
1	114.910	335	0.000	4.286
2	102.774	335	0.000	4.313
3	114.080	335	0.000	4.223
4	116.232	335	0.000	4.226
5	71.162	335	0.000	3.896
6	105.406	335	0.000	4.176
7	87.051	335	0.000	4.083
8	82.441	335	0.000	4.101
9	104.786	335	0.000	4.229
10	61.780	335	0.000	3.735
11	73.192	335	0.000	3.929
12	96.584	335	0.000	4.211
13	101.901	335	0.000	4.068
14	92.619	335	0.000	3.902
15	89.326	335	0.000	3.872
16	78.861	335	0.000	3.771
17	87.396	335	0.000	4.071
18	98.144	335	0.000	4.068
19	112.049	335	0.000	4.092
20	117.965	335	0.000	4.119
21	110.198	335	0.000	4.068
22	114.600	335	0.000	4.089
23	92.218	335	0.000	4.036
24	129.675	335	0.000	4.232
25	103.996	335	0.000	4.027
26	111.492	335	0.000	4.185
27	100.771	335	0.000	4.217
28	116.294	335	0.000	4.324
29	88.406	335	0.000	4.063
30	98.911	335	0.000	4.095
31	100.837	335	0.000	4.179
32	96.998	335	0.000	4.006
33	93.564	335	0.000	3.982
34	82.655	335	0.000	3.970
35	84.268	335	0.000	4.074
36	88.730	335	0.000	3.923
37	87.083	335	0.000	3.932
38	99.660	335	0.000	3.911
39	82.763	335	0.000	3.967
40	89.170	335	0.000	3.976
41	78.927	335	0.000	3.753

42	67.526	335	0.000	3.586
43	73.631	335	0.000	3.607
44	68.318	335	0.000	3.583
45	87.340	335	0.000	3.783
46	97.928	335	0.000	3.932
47	114.240	335	0.000	4.057
48	115.639	335	0.000	4.190
49	71.989	335	0.000	3.690
50	89.248	335	0.000	3.830
51	78.648	335	0.000	3.747
52	90.112	335	0.000	3.842
53	101.157	335	0.000	4.000
54	124.538	335	0.000	4.080
55	109.768	335	0.000	4.030
56	95.857	335	0.000	4.000
57	105.592	335	0.000	3.860
58	74.509	335	0.000	3.696
59	98.340	335	0.000	4.018
60	105.277	335	0.000	3.911
61	105.544	335	0.000	4.077
62	116.454	335	0.000	4.003
63	106.873	335	0.000	3.991
64	101.138	335	0.000	4.104
65	69.255	335	0.000	3.747
66	71.380	335	0.000	3.583
67	89.672	335	0.000	4.009
68	112.812	335	0.000	4.173
69	92.031	335	0.000	3.884
70	98.277	335	0.000	3.970
71	126.246	335	0.000	4.122

Appendix (7): Correlation Coefficient

Correlations							
	G1	G2	G3	G4	G5	G6	G
G1	1						
G2	.374**	1					
G3	.660**	.547**	1				
G4	.427**	.436**	.589**	1			
G5	.539**	.462**	.703**	.675**	1		
G6	.441**	.243**	.511**	.534**	.718**	1	
G	.730**	.687**	.859**	.776**	.867**	.735**	1
C	.491**	.354**	.714**	.624**	.707**	.711**	.766**

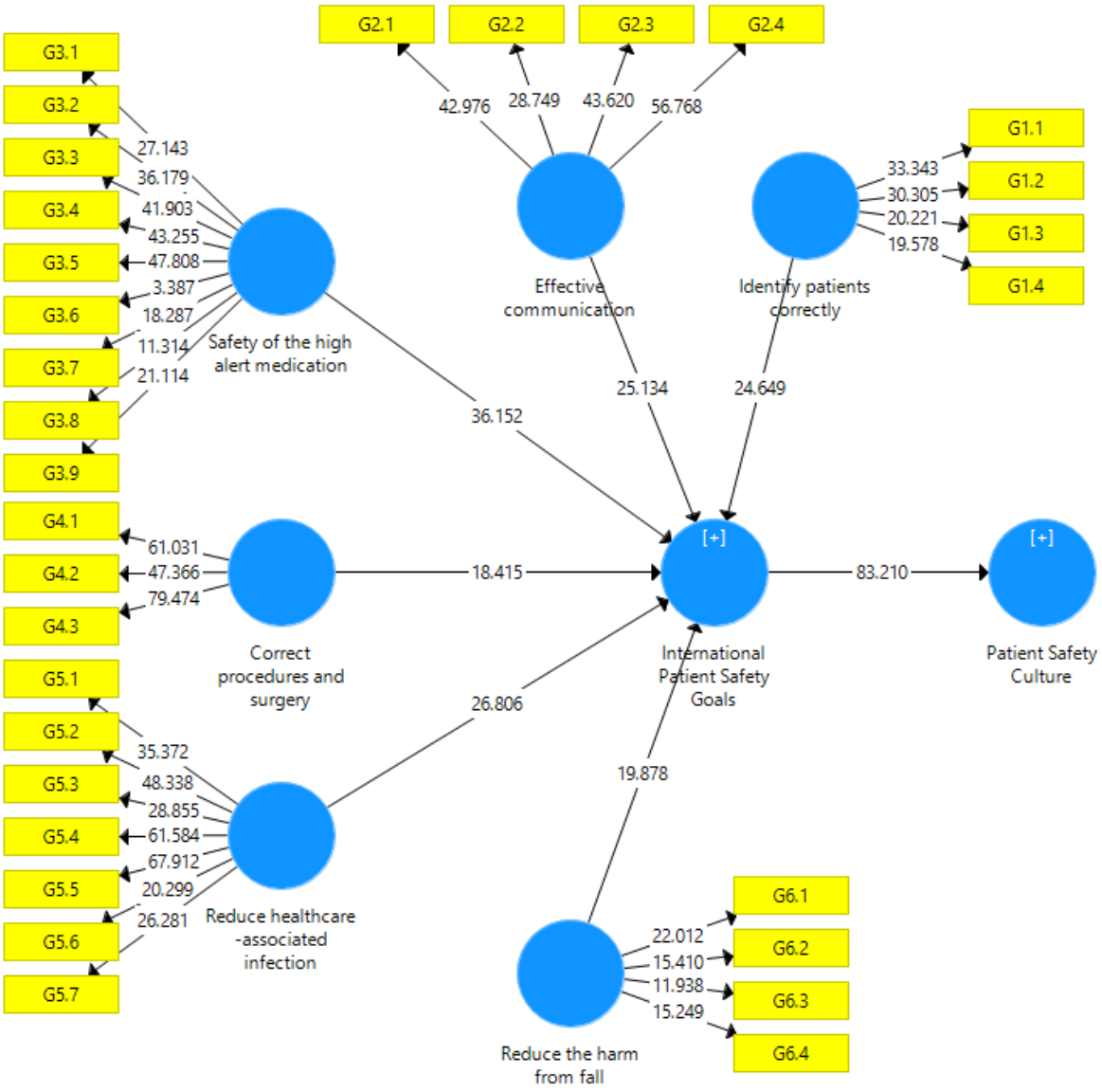
Appendix (8): PSC Dimensions

Descriptive Statistics

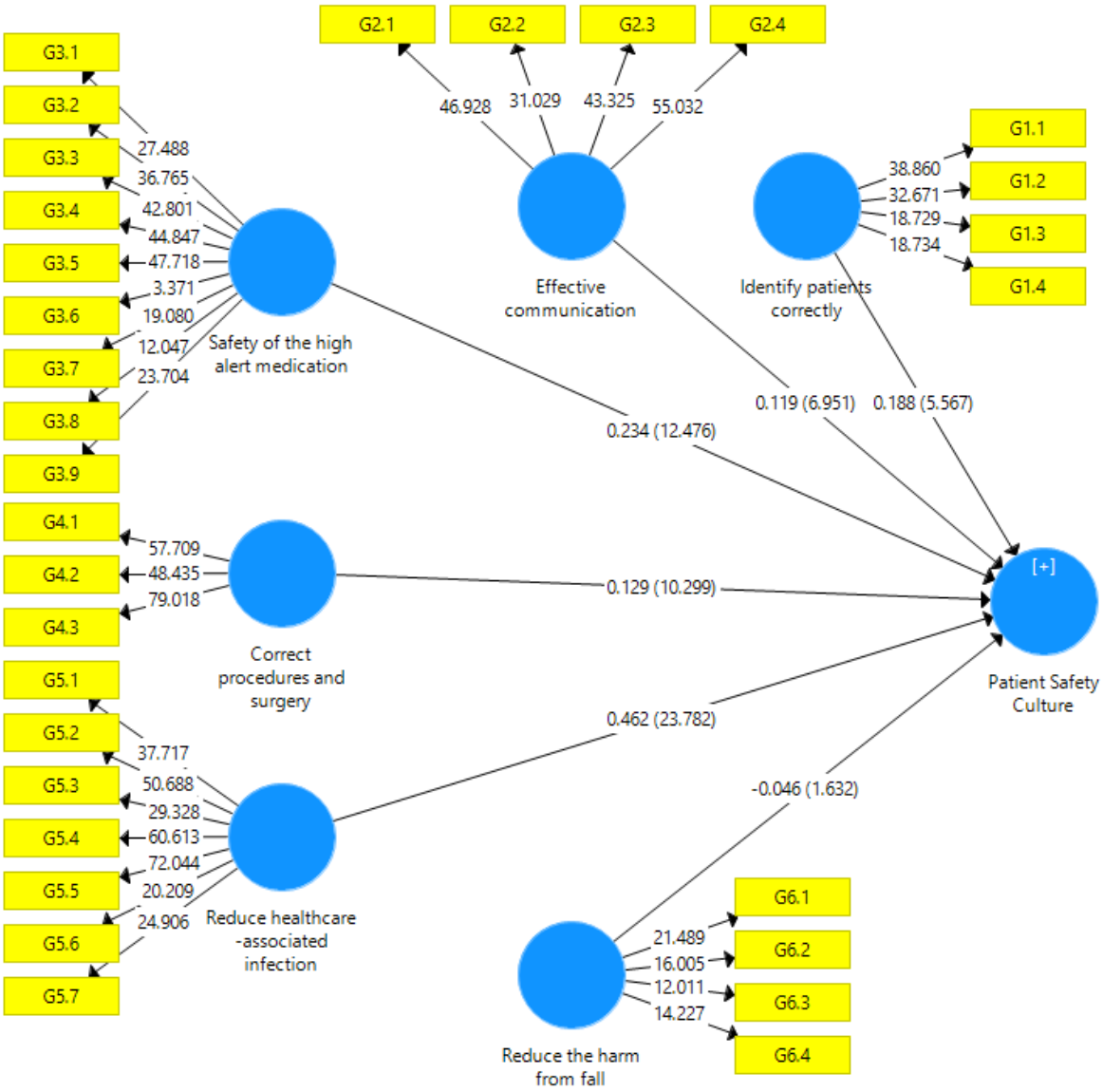
	N	Mean	Std. Deviation
The Supervisor or manager seriously considers staff suggestions for improving patient safety	336	3.98	.780
If the number of patients in the department increases, the manager asks the team to work quickly and concisely	336	3.97	.880
Concerns about patient safety are addressed by the supervisor or the manager	336	4.07	.886
Safety measures are taken by the hospital to improve patient care	336	3.92	.810
The medical errors are used as a tool for positive change	336	3.93	.828
A patient safety evaluation is conducted regularly in the hospital	336	3.91	.719
Prior to affecting the patient's safety, the errors are corrected.	336	3.97	.879
Work errors are handled transparently.	336	3.98	.817
Instead of focusing on penalties, the focus is on addressing errors.	336	3.75	.872
Errors can be recorded in the job file without fear or hesitation	336	3.59	.974
There is enough staff to manage the workload with minimal risk on patient safety	336	3.61	.898
If the workload increases, temporary staff can be used to provide better and safe care	336	3.58	.961
In the event of an increase in workload, the staff work more quickly with less safety	336	3.78	.794
An environment that promotes patient safety is provided by hospital management.	336	3.93	.736
Patient safety is a priority for hospital management	336	4.06	.651
Patient safety is important to management always, not just when mistakes are made.	336	4.19	.664
In the department, the staff members support one another.	336	3.69	.940
staff work together to get the job done quickly (if units are overloaded).	336	3.83	.787
In this department, staff members treat one another with respect	336	3.75	.873

The hospital departments work well together for best patient care	336	3.84	.782
There is good cooperation among hospital units that must collaborate.	336	4.00	.725
The hospital departments collaborate to improve patient safety	336	4.08	.601
Working with other departments is frequently simple and safe.	336	4.03	.673
When transferring patients between departments, errors are relatively rare.	336	4.00	.765
Important patient information is rarely lost throughout a shift.	336	3.86	.670
Problems rarely occur in the exchange of information across hospital departments	336	3.70	.909
Changing shifts is not a major concern for patients' safety at this hospital.	336	4.02	.749
When staff notice things that are affecting the safety of patient, they speak to supervisor /manager freely with no fear.	336	3.91	.681
The staff have the right to ask about decisions made by management about incidents they were involved in or were occurred in their department. .	336	4.08	.708
The staff aren't afraid to ask questions when something does not seem right.	336	4.00	.630
Errors that may occur within the department are reported to management / supervisor	336	3.99	.685
Feedback about changes / errors is given based on event reports to the staff of the department	336	4.10	.744
The department discusses ways to avoid repetition of similar mistakes.	336	3.75	.992
Corrected errors are documented.	336	3.58	.920
harmless errors to the patient are documented	336	4.01	.819
serious errors that harm the safety of the patient are documented	336	4.17	.678
Hospital procedures and policies are effective in preventing errors in my hospital	336	3.88	.774
Serious errors are relatively rare in this hospital	336	3.97	.741
In this department, the number of errors in patient safety is few	336	4.12	.598
Valid N (listwise)	336		

Appendix (9): T-Values for the main Hypothesis



Appendix (10): Path coefficient and T-Values for the Sub-Hypotheses



الملخص

هدفت هذه الدراسة إلى البحث في تأثير تطبيق أهداف سلامة المرضى الدولية (تحديد المرضى بشكل صحيح، وتحسين التواصل الفعال، وتحسين سلامة الأدوية عالية الخطورة، وضمان الجراحة الآمنة، وتقليل مخاطر العدوى المرتبطة بالرعاية الصحية، وتقليل المخاطر لضرر المريض الناتج عن السقوط) لتحسين ثقافة سلامة المرضى في فلسطين، تم اعتماد المنهج الكمي في هذه الدراسة، وكانت أداة الدراسة عبارة عن استبيان منظم تم تطويره لجمع البيانات الأولية، وبلغ مجتمع الدراسة 5200 موظف في المجال الصحي يعملون في 10 المستشفيات في الضفة الغربية، تم استخدام آلية أخذ العينات الاحتمالية وتم اختيار ما مجموعه 357 فردا لتمثيل عينة الدراسة، وقد توصلت الدراسة إلى عدد من النتائج أهمها ان درجة تنفيذ الأهداف الدولية لسلامة المرضى في المستشفيات الفلسطينية عالية، وكانت الأهداف حسب درجة التنفيذ هي "تحديد المرضى بشكل صحيح، الحد من العدوى المرتبطة بالرعاية الصحية، والإجراءات والجراحة الصحيحة، وتقليل الضرر الناتج من السقوط، والتواصل الفعال، وسلامة الأدوية عالية الخطورة" على التوالي، علاوة على ذلك، تم تنفيذ الأهداف الدولية لسلامة المرضى على أعلى مستوى في" مستشفى النجاح " والأقل تطبيقا كان "مستشفى الإسراء"، بالإضافة إلى ذلك وجدت الدراسة أن درجة ثقافة سلامة المرضى في المستشفيات الفلسطينية مرتفعة وكانت الأعلى في "مستشفى النجاح" والأدنى في "مستشفى الإسراء"، كما وجدت الدراسة أن هناك علاقة إيجابية ذات دلالة إحصائية بين تنفيذ الأهداف الدولية لسلامة المرضى من (1-5) وثقافة سلامة المرضى في المستشفيات الفلسطينية وأن ثقافة سلامة المرضى في المستشفيات الفلسطينية تتأثر بشكل إيجابي بهذه الأهداف، ووجدت الدراسة أن الهدف السادس ليس له أي تأثير حول ثقافة سلامة المرضى، أوصت الدراسة بأن تقوم المستشفيات الفلسطينية بالعمل على الحصول على اعتماد اللجنة الدولية المشتركة (JCI) ، والالتزام بالمعايير الدولية سلامة المرضى، ويجب على المستشفيات التأكد من أن تكون التقنيات المستخدمة من قبل مرافق الرعاية الصحية المختلفة لتحديد المرضى متسقة، وأنه ينبغي إيلاء المزيد من الاهتمام للتواصل الفعال خاصة فيما يتعلق بالأوامر الشفهية، والانخراط في الأنشطة التي تعزز الجودة من خلا جميع العاملين في الرعاية الصحية، وأخيرا وضع تعليمات فعالة تسمح للعاملين في المهن الصحية بالاعتراف بالأخطاء ومساعدة المستشفى على التعلم من تلك الاخطاء من خلال إجراء تقييمات قائمة على الحقائق، وتقديم نقد بناء مفيد وإجراء محادثات هادفة.

الكلمات المفتاحية: أهداف سلامة المرضى الدولية، ثقافة سلامة المرضى، اعتماد اللجنة الدولية المشتركة، مؤسسات الرعاية الصحية.