

Knowledge and Practice of International Patient Safety Goals and its Relation to Patient Safety Culture



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ABSTRACT

Background: Patient safety is a crucial element in the quality of patient care. The implementation of internationally patient safety goals in healthcare establishments is increasingly crucial in enhancing the safety culture of patients. **Aim:** Investigate relation between knowledge and practice of internationally patient safety goals and patient safety culture. **Methods:** A descriptive correlational design was utilized in conducting the study with a convenient sample of (90) staff nurses assigned to work in medical and surgical departments at Kafr El Sheikh University Hospital. Data was collected using an International Patient Safety Goals Knowledge Questionnaire, Nurses Observational Checklist for International Patient Safety Goals and Patient Safety Culture Questionnaire. **Results:** indicated that almost all of the nurses in the study had low levels of knowledge and practice regarding internationally patient safety goals and low perceptions of patient safety culture. **Conclusion:** This study concluded that there were highly positive statistically significant correlations among studied nurses' internationally patient safety goals knowledge, practice and patient safety culture. **Recommendations:** Patient safety culture development among nurses can be further enhanced by close and ongoing supervision of the implementation of IPSGs in all settings.

Keywords: International Patient Safety Goals, Patient Safety Culture

Introduction

Healthcare organizations are multifaceted and complex units. These organizations need to adapt to changes, affordable services for the health requirements of the society and increase the satisfaction of health care providers as well as patients. The increasing demand for high quality health care needs understanding how staff nurses continually increase their knowledge and experience. Understanding the complexity of health care and health workforce concerns its impact on staff to maintain the future workforce and a positive workplace environment (Basiony, Elshahat, & Farghaly, 2023).

The growing complexity of healthcare systems and the resulting increase in patient injury in healthcare institutions led directly to the medical specialty of patient safety. Also, providing high-quality, fundamental health services depend on patient safety. In order to provide patients with the best possible treatment, it strives to prevent and minimize risks, mistakes, and injury (Nymark, von Vogelsang, Falk, & Göransson, 2022).

This involves minimizing and preventing medical errors, which frequently have detrimental effects on patients' health. Healthcare experts should create standards for evaluating the efficacy of initiative well-being and health managing systems. To boost adherence to safety culture, administrators should routinely conduct organizational performance reviews and involve all managers and workers in the proper decision-making procedures (Tingle, Néill & Shimwell, 2018).

The adoption of various interventions could modify the organizational safety culture and improve outcomes. Patient safety culture has a positive influence on results. By identifying the strengths and flaws that shape the way healthcare professionals think, act, and approach their work. There are several stages of the healthcare system at which the patient safety culture can be evaluated. (Kumbi, Hussen, Abate Lette & Morka, 2020). Staff nurses are essential to improving the patient safety culture. Providing high-quality healthcare services requires a culture of patient safety (Alharbi, & Alilyyani, 2023).

The study's significance

Every year, it is projected that 64 million disability-adjusted life years are lost due to hazardous care around the world. Data available indicates that each year in hospitals in low- and middle-income states, there are 2.6 million deaths and 134 million adversative events related to harmful care; consequently, patient damage resulting from adverse events ranks in the topmost 10 reasons of death and impairment globally. In high-income countries, 10% of patients experience an injury during their hospital stay (National Academies of Sciences, Engineering, and Medicine, 2018).

In Egypt, there were a lot of studies being done on patient safety. Moreover, the views of staff nurses regarding the association between patient safety culture and the application of international safety goals have received less attention than other aspects of safety culture management.

Aim of the study

This study aimed to investigate relation between knowledge and practice of internationally patient safety goals and patient safety culture among staff nurses at Kafr El Sheikh University Hospital.

Research Questions

RQ1: Is there a relation between nurses' knowledge of internationally patient safety goals and patient safety culture at Kafr El Sheikh University Hospital?

RQ2: Is there a relation between nurses' practice of internationally patient safety goals and patient safety culture at Kafr El Sheikh University Hospital?

RQ3: Is there a relation between nurses' knowledge of international patient safety goals and practice at Kafr El Sheikh University Hospital?

Methods

Study Design

The study design employed a quantitative, descriptive - correlational design.

Study Setting

This study was carried out at Kafr El Sheikh University Hospital that Provide a wide range of healthcare services in the delta region. The hospital opened for business in February 2017 with 365 beds total capacity. It is furnished with the most up-to-date international technology and instruments.

Study Subjects

The study sample was included all available staff nurses (n=90) assigned to work in medical and surgical departments, with a minimum of one year's experience to be aligned for working conditions during the data collected period.

Data Collection Tools

Three tools were used in the collection of data for this study:

Tool I: International Patient Safety Goals Knowledge Questionnaire

There are two elements to the tool: -

The first element: is used to evaluate the study nurses' personal attributes, including their age, gender, years of experience, level of education, and attendance at training programs.

Second element: This part was developed by researcher based on reviewing literature (JCI, 2021 & World Health Organization, 2021) and intentional to evaluate staff nurses' knowledge about international patient safety goals It consists of 50 questions in form true / false and MCQ questions that cover key dimension, internationally patient safety goals concept (6 questions), correct patients identification (7questions), improving effectiveness of communication(6 questions), improving the safety of high-alert medications(10 questions), ensuring correct surgery (7 questions), reducing the risk of health care-associated infections(8 questions) and reducing the risk of patient harm resulting from fall (6 questions). For true & false and MCQ questions. The correctly answered response received a point, whereas the wrong response received none. One point was given for each correct answer.

Tool II: Nurses Observational Checklist for International Patient Safety Goals

This tool was developed by Attia, Saeed & Moustafa (2021) to evaluate staff nurses' practice of international patient safety goals. This element was consisted of six dimensions based on international patient safety goals as the *following*; correct patient identification (7 items), improving effectiveness of communication among health care provider (5 items), improving the safety of high alert medications (11 items), ensuring correct surgery (4 items), reducing the risk of health care-associated infections (8 items) and reducing the risk of patient harm that result from fall (6 items). The items labelled as "not done" and "done" on the observation checklist acquired scores of "zero" and "1," respectively.

Tool III: Patient Safety Culture Questionnaire

This tool was developed by Agency for Healthcare Research and Quality publication (2018) to measure nurses' perception regarding patient safety culture in the study units. There were 42 items in the survey, which have been organized down into 12 categories. The domains under consideration encompassed a range of aspects, such as teamwork within units, expectations and actions of supervisors and managers to promote patient safety, organizational learning, management support for patient safety, perceptions of patient safety, communication and feedback about errors, openness in communication, frequency of reported vents, teamwork across units, staffing, handoffs & transitions, non-punitive response to errors, and communication and feedback about errors.

To find the mean scores for the entire HSPSC, the negative items were reverse coded. A five-point Likert scale, ranging from 1 (strongly disagree or never) to 5 (strongly agree or always), was used to measure participant responses to the questionnaire about patient safety culture in healthcare organizations.

Reliability of the study tool

Cranach's Alpha was used to examine the study tools' reliability, including Knowledge Questionnaire on Internationally Patient Safety Goals, Nurses Observational Checklist for Internationally Patient Safety Goals, and the Patient Safety Culture Questionnaire. The calculated values of reliability were (0.94), (0.92), and (0.86).

Pilot Study

Prior to starting data collecting, there was a pilot study performed on 10% of the entire study sample that was picked at random. This was done to verify that the tools were applicable and clear and to determine how long it would take each participant to complete the tool's questions. All required adjustments were made, and research subjects from the pilot study were excluded.

Ethical Consideration

Official agreement was being attained from the Research Ethics Committee of Faculty of Nursing, Mansoura University. The competent hospital administrator granted formal approval to conduct the study, and participation was entirely voluntary. All data was implicit to ensure the subject's privacy. The study sample's privacy was protected. The results were utilized as a part of the required research as well as for upcoming publications and educational purposes, all while maintaining the confidentiality of the data obtained.

Data Collection

Completing the knowledge questionnaire on the internationally patient safety goals took about fifteen to twenty minutes. The researcher observed staff nurses' performance regarding international patient safety goals; the observation took twenty to thirty minutes to complete. the patient's safety culture questionnaire took between fifteen and twenty minutes for staff nurses to complete. The data was collected in the morning and afternoon shifts on Sunday, Tuesday, and Wednesday of each week. The period from the beginning of March 2023 to the end of April 2023 for data gathering was two months.

Statistical Analysis

Using SPSS software version 22, the gathered data were arranged, tabulated, and statistically examined. Frequency and percentage were used to express categorical variables. The mean and standard deviation were used to represent continuous variables. The independent t-test was working to inspect the discrepancy concerning binary continuous variable means. The ANOVA test is employed to examine the discrepancy among binary or more continuous variable means. A test of the Pearson correlation coefficient was used to determine whether binary continuous variables were related. If the p-value was less than 0.05, it was regarded to be at a statistically significant level; if it was greater than 0.001, it was at a highly significant level (Agresti, 2018).

Results

Table 1: shows personal characteristics of the studied nurses. Regarding their ages, further than three quarters of studied nurses were (78.9%) aged between 20 and 30 years old. The common of the studied nurses (66.7%) were female, and more than half (52.2%) of them were married. As regards education qualification, the highest percent of them (90%) were holding nursing technical institute degrees and (47.8%) of them had experience ranged from 5 years <10 majority years with and the almost (78.9) of them didn't attending previous training program about international patient safety goals.

Table 2: shows mean score of the studied nurse's knowledge of total six internationally patient safety goals (IPSGs). The table show the mean score of improving the safety of high alert medication domain was the highest mean score (2.17±1.48) followed by ensure correct surgery domain with mean score (1.61±1.05), while the lowest was for improve effectiveness of communication domain with mean score

(1.06±0.87), followed by international patient safety goals concept domains with mean score (1.25±1.04) of knowledge of six internationally patient safety goals domains between studied nurses.

Figure 1: reveals studied nurses' knowledge of internationally patient safety goals at Kafr El Sheikh university hospital. It was observed (96.7%) of studied sample had low level of knowledge of internationally patient safety goals and (3.3%) of them have average level of knowledge of internationally patient safety goals.

Table 3: show the mean score of improve effectiveness of communication domain was the utmost mean score (8.66±3.93) followed by reducing the risk of health care associated infection domain with mean score (4.35±1.86), while the lowest was for ensure correct surgery domain with mean score (3.16±0.37), followed by improving the safety of high alert medication domain with mean score (3.58±1.11) regarding practice of internationally patient safety goals domains amongst studied nurses.

Figure 2: shows studied nurses' practice of international patient safety goals between the studied staff nurses at kafr el sheikh university hospital. (94.4%) of studied sample had poor level of practice about internationally patient safety goals and (5.6%)of them have average level of practice about internationally patient safety goals.

Table 4: reveals mean score of patient safety culture as perceived by the studied nurses (N=90).The table display the mean score of overall

perceptions of patient safety domain was the utmost mean score (12.95±1.91) followed by manager expectations and actions domain with mean score (12.38±1.83), while the lowest was for staffing domain and communication openness domain with mean score (8.68±1.64), followed by non-punitive response to errors domain with mean score (8.88±1.19) regarding perception of patient safety culture domains amongst staff nurses. **Figure (3):** Shows studied nurses' perception of patient safety culture as perceived at kafr el sheikh university hospital. (67.8%) of studied sample had poor perception level about patient safety culture and (28.9%)of them have average perception level about patient safety culture,

while (3.3%) of studied sample had good perception level about patient safety culture.

Figure (4): Demonstrate that there was statistical significant positive correlation between total knowledge and total practice of international patient safety goals as perceived by staff nurses at Kafr El Sheikh University Hospital.

Figure (5): Demonstrate that there was statistical significant positive correlation between total knowledge of international patient safety goals and patient safety culture as perceived by staff nurses at Kafr El Sheikh University Hospital.

Figure (6): Demonstrate that there was statistical significant positive correlation between total practice of international patient safety goals and patient safety culture as perceived by staff nurses at Kafr El Sheikh University Hospital.

Table (1): Personal Characteristics of the Studied Nurses (n=90)

Characteristics	no	%
Age (Years)		
20 < 30	71	78.9
30 < 40	18	20
≥ 40	1	1.1
Mean ±SD	28.14±3.74	
Gender		
Male	30	33.3
Female	60	66.7
Marital status		
Single	42	46.7
Married	47	52.2
Widow	1	1.1
Educational qualification		
Technical Institute of Nursing	81	90
Bachelor of Nursing	9	10
Experience (Years)		
1 < 5	38	42.2
5 < 10	43	47.8
10 < 15	9	10
Mean ±SD	6.78±1.39	
Training program on patient safety		
Yes	19	21.1
No	71	78.9

Table (2): Mean Score of the Studied Nurse’s knowledge of Total Six Internationally Patient Safety Goals (IPSGs) (n=90).

Knowledge regarding total six international patient safety goals domains	Range	Mean±SD
International patient safety goals concept domains	0 – 6	1.25±1.04
Identify patients correctly domain	0 – 7	1.45±1.34
Improving effectiveness of communication domain	0 – 6	1.06±0.87
Improving the safety of high alert medication domain	0 – 10	2.17±1.48
Ensuring correct surgery domain	0 – 7	1.61±1.05
Reducing the risk of health care–associated infections domain	0 – 8	1.41±1.34
Reducing the risk of patient harm resulting from falls domain	0 – 6	1.42±0.88
Overall knowledge regarding total six international patient safety goals	0 – 50	9.24±4.91

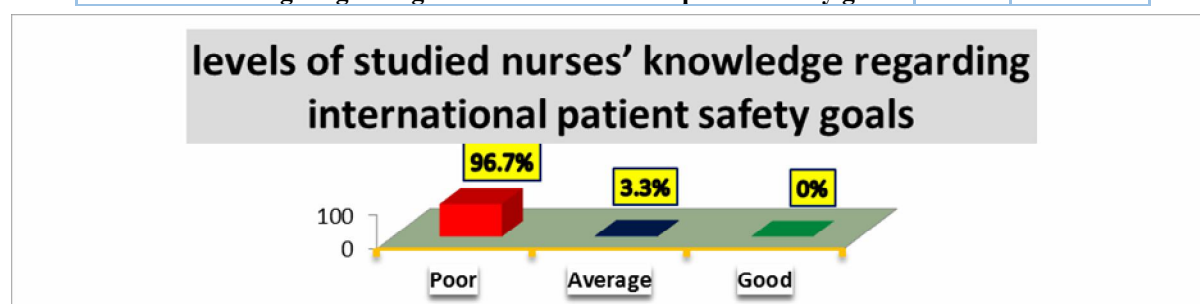


Figure (1): levels of studied nurses’ knowledge of internationally patient safety goals (n=90)

Table (3): Mean Score of the Studied Nurse’s Practice of Total six International Patient Safety Goals (IPSGs) (n=90).

Practice regarding total six international patient safety goals domains	Range	Mean±SD
Correct patients Identification domain	0 – 10	4.10±1.34
Improving effectiveness of communication domain	0 – 34	8.66±3.93
Improving the safety of high alert medications domain	0 – 11	3.58±1.11
Ensuring correct surgery domain	0 – 5	3.16±0.37
Reducing the risk of health care associated infection domain	0 – 13	4.35±1.86
Reducing the risk of patient harm resulting from fall domain	0 – 13	4.10±1.98
Overall practice regarding total six international patient safety goals	0 – 86	27.97±8.98

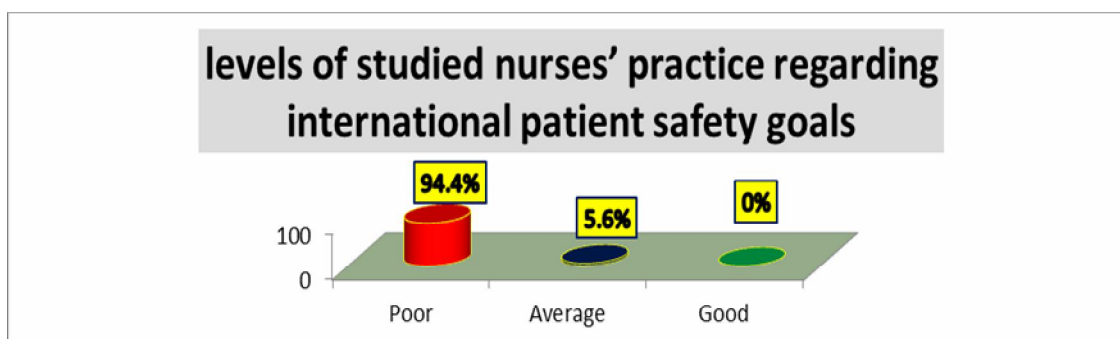


Figure (2): levels of studied nurses’ practice of international patient safety goals (n=90).

Table (4): Mean Score of Patient Safety Culture as Perceived by the Studied Nurses (n=90).

Safety Culture dimensions	Range	Mean±SD
Manager expectations and actions	4 – 20	12.38±1.83
Organizational learning continuous improvement	4 – 20	11.77±2.49
Teamwork within units	3– 15	9.93±2.03
Non punitive response to errors	3 – 15	8.88±1.19
Staffing	4 – 20	8.68±1.09
Management support for patient safety	3 – 15	9.46±1.35
Teamwork across units	4 – 20	10.34±1.72
Handoffs & transitions	4 – 20	10.12±1.98
Frequency of events reported	3 – 15	9.94±1.61
Overall perceptions of patient safety	4 – 20	12.95±1.91
Communication openness	3 – 15	8.68±1.64
Feedback & communication about error	3 – 15	10.07±2.01
Overall safety culture	42-210	123.20±12.08

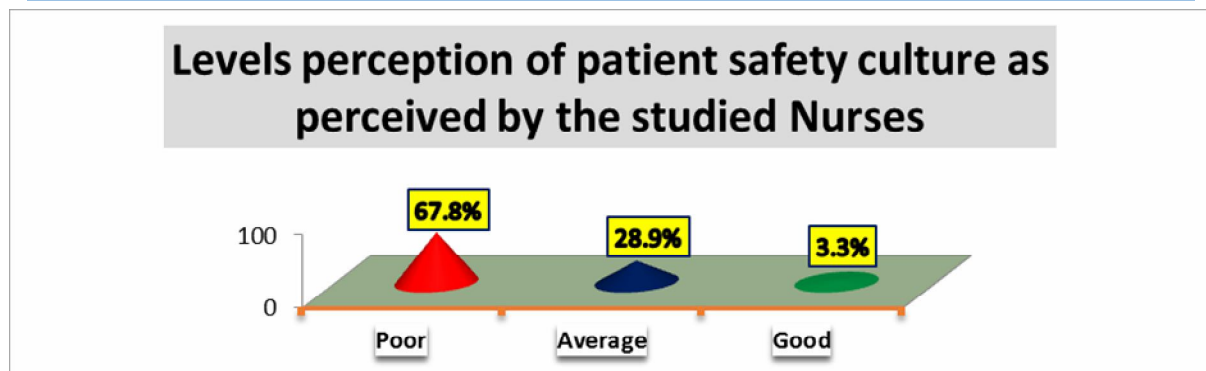


Figure (3): Levels perception of patient safety culture as perceived by the studied nurses (n=90).

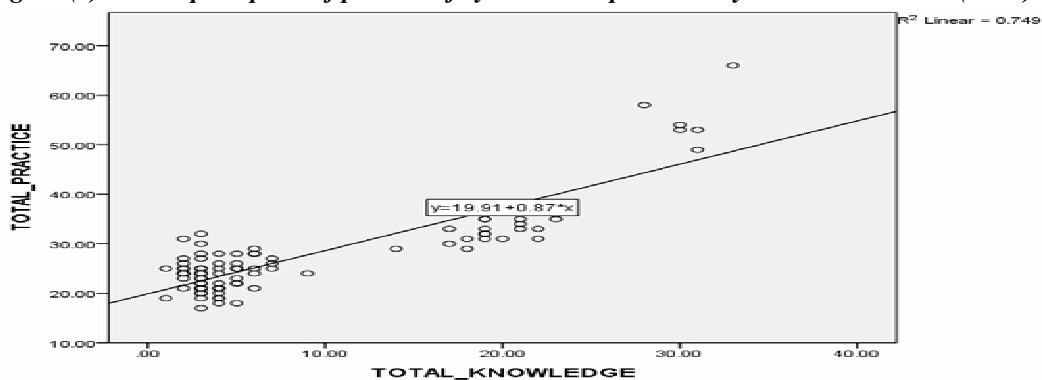


Figure (4): Correlation between total knowledge and total practice of international patient safety goals as perceived by staff nurses at Kafr El Sheikh University Hospital (n=90).

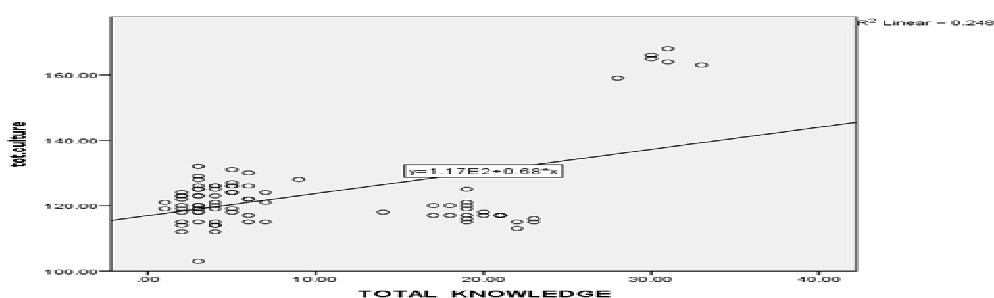


Figure (5): Correlation between total knowledge of international patient safety goals and patient safety culture as perceived by staff nurses at Kafr El Sheikh University Hospital (n=90).

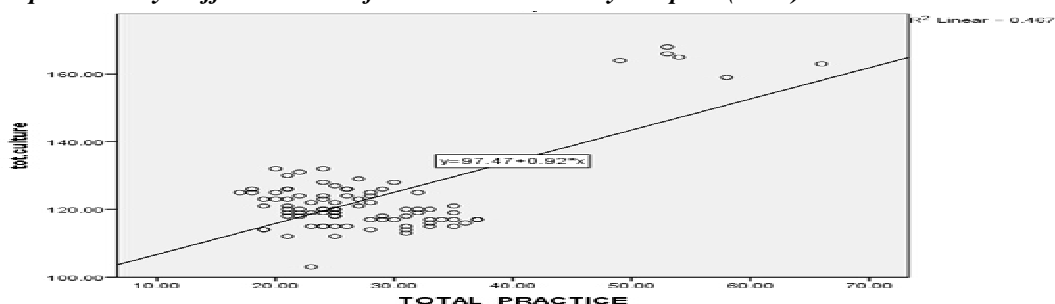


Figure (6): Correlation between total practice of international patient safety goals and patient safety culture as perceived by staff nurses at Kafr El Sheikh University Hospital (n=90).

Discussion

A vital aspect of the quality of healthcare is patient safety. It's a worldwide task requiring expertise in several fields, such as systems engineering and human aspects. Patient safety is a multifaceted, intricate topic, and a thorough evaluation is necessary. A critical factor in assessing how well healthcare organizations are able to identify and minimize risks in clinical settings and enhance patient safety culture (Shehab, Alschuler, McIlvenna, Gonzaga, Laing, deRoode, & Benin, 2024).

The result of the present study revealed that majority of studied nurses had poor level of knowledge regarding international patient safety goals.

This could be because most of the nurses in the study were under time constraint to attend hospital seminars due to numerous deadlines and work commitments, therefore they missed the preceding training session about the worldwide patient safety targets. This is in line with a study by Hamed, Fakhry, and Saad (2023) that assessed staff nurses' performance in relation to patient safety goals and discovered that staff nurses' knowledge of IPSGs was frequently lacking. Low level of satisfactory knowledge of patient safety goals among nurses would lead to more likelihood of

errors. This was most evident as relates to their knowledge of the safety aim.

Additionally, these results are consistent with a study by Ahmed, Mahmoud, and Ali (2022) that evaluated nurses' awareness and practices of patients' safety goals in critical care units. That study revealed that near one-third of the studied sample had average knowledge of patient safety goals in critical care units, and over half of the nurses studied had poor knowledge overall. Only a small percentage of them were proficient. This may be because there were no IPSG policies at the unit's ICU and most of the nurses in the study did not obtain learning sessions nearby international patient safety goals.

Furthermore, Eldeeb, Ghoneim, & Eldesouky's (2016) study, which examined nurses' perceptions of patient safety in teaching hospitals, supports the current study's findings by demonstrating that the majority of nurses lacked enough knowledge of IPSGs. This may be connected to the unfavorable impression of the workplace that nurses in this study expressed. In a similar vein, Abd El Hamid, Shazly, Fakhry, & Saad (2018) found that freshly graduate nurses in the study units have inadequate knowledge of international patient safety goals (IPSGs).

Regarding the present study revealed that majority of studied nurses had poor level of practice regarding international patient safety goals. This might be clarified by a lack of understanding on the part of the nurses or by misinformation that could lead to self-inflicted restrictions that could negatively impact routine patient safety procedures and highlight knowledge and practical deficiencies. Lack of resources and consumables for implementing the internationally patient safety goals is another issue.

The findings of this study are corroborated by Hamed, Fakhry, and Saad (2023), who evaluated the performance of staff nurses in correlation of patient safety goals and discovered that the nurses in the study settings had insufficient understanding of these goals and deficient behaviors. They suggested that in order to advance their expertise and methods, educational initiatives are required.

Similarly, Tahoun, Safan, and Ahmed (2021) found that 75% of nurse's practical internationally patient safety goals incompetently at non accreditation hospitals in their study.

Additionally, this is in line with the findings of Ahmed, Mehany, and Abd El-Hafez's (2018) which revealed that slightly less than sixty percent of nurse did not sufficiently practice patient safety in all areas. Work overload and a rise in the number of patients per nurse may be the cause of this. Additionally, the findings of this study align with those of Shaheen, Mahros, Hegazy, and Salem's (2016) evaluation of healthcare professionals' practices of patient safety, which displayed that the common of participants had practices that were not approved when it came to IPGs.

However, the study carried out by Brasaite, Kaunonen, Martinkenas, Mockiene, &Suominen (2017), which evaluated healthcare professional's knowledge's of patient safety, contradicts this finding, demonstrating that the majority of healthcare professionals were proficient in IPG skills.

Regarding the present study revealed that most of studied nurses were had poor level of perception about patient safety culture. This could be caused by the fact that studying nurses don't know enough about the worldwide patient safety goals to be able to apply them correctly, as well as by a lack of ongoing education and training, a lack of standard operating procedures, and a heavy workload in the units. This result is constant with inquiry conducted in 2024 via Attalah & Wazqar on patient safety

culture determinants and outcomes for long-term oncology nursing practice.

A cross-sectional association study conducted in Saudi Arabia found that the level of PSC was lesser than anticipated and that collaboration within the units' dimension was at a low level that needed to be strengthened.

Additionally, a study conducted by Abraham, Meyer, Godman, & Helberg (2023) who found that public hospitals had a poor patient safety culture because patients felt that reporting adverse events would be punished. It is suggested that specific patient safety measures be implemented, and then that additional study be conducted.

The results of this study also conflict with those of Muftawu and Aldogan (2020), who conducted research to evaluate patient safety culture measurement at a teaching hospital in Ghana. Their study revealed that over 50% of respondents thought the teaching hospital's overall response to the patient safety culture dimension was low. Therefore, in order to completely comprehend and alter the patient safety culture hospitals in Ghana, healthcare workers must receive patient safety training, and a comprehensive study involving all categories of healthcare staff is imperative.

Moreover, this finding was in the same line with Khoshakhlagh et al. (2019), who discovered that the lowest mean score was for teamwork within the units. They affirmed that greater emphasis requirements to be paid to enhancing the patient safety culture trendy light of their findings.

In a similar vein, Abd El Hamid, Shazly, Fakhry, & Saad (2018) found that nurse's interns' practice and perception of patient safety culture were affected by a self-learning bundle related to patient safety goals, and that there was considerable variation in the interns' awareness of patient safety.

Regarding the incidence of occurrences reported, the lowest level of awareness was found. The results strengthen the case for conducting the current study and putting the intervention into practice by showing that nurse interns need to be more aware of reportable incidents. Furthermore, these results align with the research of Abousallah (2018), who examined the effect of implementing internationally safety goals on patient safety culture and revealed that The vast majority of managerial nurses had areas of patient safety culture (PSC) that may use improvement prior to the program's starting up.

Furthermore, this results are consistent through those of Alahmadi (2010), who conducted research to evaluate the patient safety culture in Saudi Arabian hospitals and identified a number of areas that require improvement, including communication, leadership, teamwork among hospital units, error reporting, and error response.

Eliminating blame, fear, and silence about mistakes are three detrimental components that organizations must get rid of in order to establish a safety culture. Error reporting should be seen as a tool of education from faults, the initial phase toward removing injury and enhancing patient safety, rather than as a goal unto itself. The ability of hospital management to create an environment that encourages candid communication and organizational learning is a limiting factor in the development and application of successful patient safety culture promotion initiatives. Hospital management, which places some importance on patient safety issues, saw that overall assessment of patient safety was only moderate and that there was potential for improvement.

This finding, on the other hand, contrasted with that of Olsen & Leonardsen (2021), These findings showed that the worldwide patient safety goals knowledge, practice, and patient safety culture of examined nurses were substantially statistically correlated. These results demonstrated that there were highly statistically significant correlations among studied nurses' international patient safety goals knowledge, practice and patient safety culture.

The results of Ahmed, Mahmoud, & Ali's study (2022), that study found a positively relationship ($P < 0.05$) between nurse's overall knowledge's and practices of patients' safety goals in intensive care units. Ineffective patient care, prolonged patient stays in the critical care unit, and an increase in mortality may be caused by the inadequate understanding and practice of nurses about patient safety measures.

These results are also consistent with a study by Hamdan & Saleem (2018) who found patient safety advantages and courses have positive impacted patient safety culture public hospitals in Palestine. These results also corroborate those of Aousallah (2018), who show that there is a strong association between each international patient safety goal variable in addition sustainability. There is a medium to strong correlation between the patient safety culture characteristics. Additionally, there is a significant to extremely strong association between the patient safety culture and each of the international patient safety

target variables. Moreover, the connection between patient safety in addition the whole set of internationally patient safety goals.

Conclusion:

Most of staff nurses had inadequate knowledge and performance of internationally patient safety goals, as well as poor perceptions of patient safety culture, according to the study's findings. This indicates that the international patient safety goals knowledge, practice, and patient safety culture of study nurses had very statistically significant connections.

Recommendations

- ❖ Providing all capabilities and consumables to facilitate application of technology to achieve successful implementation to internationally patient safety goals at hospital
- ❖ Using key performance indicators to continuously assess the application of international patient safety goals is one way to reinforce the system of application connected to these goals through quality audits.
- ❖ patient safety culture development can be further enhanced among nurses by close and ongoing supervision of the implementation of IPSGs in all settings.

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