



Assessing Patient Safety Culture and its Relation to Nurse's Practice of International Patient Safety Goals at Kafr El Sheikh University Hospital

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Abstract: Background: Quality healthcare delivery is contingent upon effective patient safety culture and a patient safety. Patient safety culture is essential for ensuring high-quality healthcare delivery and international patient safety goals are a set of requirements that are crucial for the foundation of a patient safety approach at hospital level. Aim: Assess patient safety culture and its relation to nurses practice of international patient safety goals at Kafr El Sheikh University Hospital. Methods: A descriptive correlational design was utilized in conducting the study with a convenient sample of (90) nurses assigned to work in inpatient departments at Kafr El Sheikh University Hospital. Data was collected using Patient Safety Culture Questionnaire and Nurses Observational Checklist for International Patient Safety Goals. Results: Indicated that around two third of the nurses in the study had low perceptions to patient safety culture and majority of them have low levels of practice regarding international patient safety goals. Conclusion: This study concluded that there were positive statistically significant correlations between nurse's perceptions to patient safety culture and their practice regarding international patient safety goals. Recommendations: Conduct training program for nurses about patient safety culture and quality practice regarding international patient safety goals. Also, recognition system has to be applied for units or nursing personnel who had practice regarding international patient safety goals of optimal level.

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1. Introduction

Nurses represent the furthestmost of health care organizations that have a regular contact with patient and deliver full crucial nursing care in professional manner under different types of demands and stressors with high quality of care. Nurses assess and monitor conditions for patients, coordinate with physicians to create a treatment plan and assist patients in carrying it out. Additionally, because they are the medical professionals who have the biggest influence on the implementation of a high-quality and safe culture (Kim et al., 2023).

Around the world, healthcare organizations acknowledge patient safety culture (PSC) as a fundamental concern. Safety culture is referred to as "the outcome of individual and group beliefs, behaviors, points of view, capabilities, and social habits that impact the loyalty to, and the approach and expertise of the organization's health and safety management." Establishing objectives for patient safety treatments, evaluating their effectiveness, meeting regulatory requirements, and conducting

benchmarking are all accomplished by organizations using safety culture (Arzahan et al., 2022).

Examining how individual and group attitudes, behaviors, and skills impact an organization's dedication, style, and competence in health and safety management is known as patient safety culture. Employing patient safety culture, organizations can determine the goals of patient safety initiatives, assess their efficacy, and comply with legal requirements (Karaca et al., 2022).

The concept of safety is essential to the harm-free healthcare philosophy and a priority for healthcare organizations and practitioners worldwide. One of the key procedures that guarantees a high quality of life is patient safety. Additionally, as demonstrated by healthcare regulations, safety is a top priority for many nations and international health organizations (Jafaru and Abubakar, 2022).

In healthcare institutions, patient safety is a top priority. This involves minimizing and prevent healthcare mistakes, which can have detrimental effects on health. Healthcare providers should create standards for evaluating the efficacy of organization's

safety and health management systems. To encourage adherence to safety standards, hospital administrators should routinely evaluate organizational performance and include all managers and employees in suitable decision-making processes (Tingle et al., 2018).

Patient safety goals were established by the Joint Commission Accreditation Health Organization (JCAHO), which developed internationally recognized patient safety standards. JCAHO is an independent organization dedicated to improving hospital healthcare quality worldwide. In addition to other important issues related to patient safety and quality assurance that aim to lower errors in care settings, JCAHO provides data and statistics on metrics to evaluate healthcare quality (Askari et al., 2023).

The six international patient safety goals are as follows: *Goal one* focuses on improving the accuracy of patient identification, *Goal two*: focuses on improving the effectiveness of communication, *Goal three* focuses on improving the safety of high alert medications, *Goal Four* focuses on ensuring the correct surgical procedure, *Goal five* focuses on reducing the risk of health care acquired infections and lastly *Goal six* focuses on reducing the risk of patient harm resulting from fall as figure-1 (Despotou and Arvanitis, 2020).

One of the major priorities for healthcare organizations worldwide over the last 20 years has been the successful implementation of international patient safety goals and the development of a patient safety culture. Policies, methods, and practices have been developed and changed for distribution and implementation in order to significantly reduce errors and ensure the safety and quality of care delivery. Therefore, it is highly recommended that healthcare facilities support an integrated approach to preventing unfavorable events and ensuring constant safety culture. To provide high-quality care, hospitals need to set up a safe, effective, and well-managed infrastructure (Gunawan and Hariyati, 2019).

The study's significance:

It is thought to be crucial to concentrate on how instructional and instructional interventions might enhance nurses' related practice with standard to international patient safety goals, as patient safety culture remains a persistent and significant concern for the national and international health service. Preventing injury throughout the medical process or lowering the risk of "unnecessary" harm to a manageable level must be the top priority in the field of patient safety. There is a 1 in 300 risk that a patient would suffer injury while receiving medical care, and 421 million hospitalizations take place worldwide each year, with about 42.7 million adverse events

occurring during these stays. Hospitals now place a greater emphasis on patient safety. Nurses are the driving force behind patient perceptions of safety and it also is a concern among nursing professionals. So this study aimed to assess relation between nurse's perception to patient safety culture and their practice regarding international patient safety goals at Kafr El Sheikh University Hospital (WHO, 2020).

Aim of the study

This study aimed to assess patient safety culture and its relation to nurses practice of international patient safety goals at Kafr El Sheikh University Hospital.

Research questions: -

RQ1: What is the level of nurse's perception to patient safety culture at Kafr El Sheikh University Hospital?

RQ2: What is the level of nurse's practice regarding international patient safety goals at Kafr El Sheikh University Hospital?

RQ3: Is there a relation between nurse's perception to patient safety culture and their practice regarding international patient safety goals at Kafr El Sheikh University Hospital?

2. 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 provides 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 in-patient departments.

Data collection tools:

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

Tool (I): Patient Safety Culture Questionnaire

There are two components to the tool: -

The initial component: is used to evaluate the nurses' personal qualities, including their age, gender, years of experience, level of education, and attendance at training programs.

Second component: This tool was developed by Agency for Healthcare Research and Quality publication (2018) to assessed nurses' perception to patient safety culture in the study units. It consisted of two

dimensions based on the extent to which they described patient safety culture in hospital. First: Hospital-Level Dimension which include Management support for patient safety, Organizational learning & continuous improvement, Teamwork across units, Perceptions of patient safety, and Handoffs & transitions. Second: Unit Level Dimension which include, Feedback & communication about error, Frequency of events reported, teamwork within units, non-punitive response to error, Supervisor/manager expectations & actions promoting safety, staffing and Communication openness health care Staff.

Participants responses for patient safety culture in healthcare organizations questionnaire were measured using a five-point Likert Scale that ranged from (1= Strongly disagree or never and 5= Strongly agree or always) To find the mean scores for the entire HSPSC, the negative items were reverse coded.

Tool II: Nurses Observational Checklist for International Patient Safety Goals

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

Reliability of the study tool:

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

Pilot study:

Prior to starting data collecting, there was a pilot study performed on nine nurses (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 patient safety culture questionnaire took about fifteen to twenty minutes. The researcher observed nurses' practice regarding international patient safety goals; the observation took twenty to thirty minutes to complete. The data was collected in the morning and afternoon shifts on Saturday, Sunday, 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. 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).

3. Results:

Table (1): illustrates Frequency and distribution of the studied nurses according to personal data. As noticed in this table, more than three quarters of studied nurses were (78.9%) aged between 20 and 30 years old. The common of the nurses (66.7%) were female, and more than half (52.2%) of them were married. As regards education qualification, the highest percent of nurses (90%) graduated from nursing technical institute degrees and slightly less than half (47.8%) of them had experience ranged from 5 years <10 years. Moreover, more than three quarters (78.9) of them didn't attending previous training program about international patient safety goals.

Table (1): Frequency and distribution of the studied nurses according to personal data (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): clarifies the level of nurses' perception to patient safety culture at Kafr El Sheikh university hospital. It highlights that approximately two third (67.8%) of nurses had low level of perception to patient safety culture followed by (28.9) of them have average level of perception to patient safety culture. While only (3.3%) of them have good level of perception to patient safety culture.

Table (2): Overall levels of nurses' perception of patient safety culture (IPSGs) at Kafr El Sheikh University Hospital (n=90).

| Safety Culture dimensions | Perception level | | | | | |
|--|------------------|-------------|-----------|-------------|----------|------------|
| | Poor | | Average | | Good | |
| | No. | % | No. | % | No. | % |
| Manager expectations and Actions | 59 | 65.6 | 26 | 28.8 | 5 | 5.6 |
| Organizational Learning Continuous Improvement | 20 | 22.2 | 49 | 54.4 | 21 | 23.4 |
| Teamwork Within Units | 84 | 93.3 | 6 | 6.7 | 0 | 0 |
| Non punitive Response to Errors | 66 | 73.3 | 24 | 26.7 | 0 | 0 |
| Staffing | 72 | 80 | 18 | 20 | 0 | 0 |
| Management Support for Patient Safety | 35 | 38.9 | 55 | 61.1 | 0 | 0 |
| Teamwork Across Units | 80 | 88.9 | 10 | 11.1 | 0 | 0 |
| Handoffs & Transitions | 81 | 90 | 9 | 10 | 0 | 0 |
| Frequency of Events Reported | 40 | 44.4 | 49 | 54.5 | 1 | 1.1 |
| Overall Perceptions of Patient Safety | 31 | 34.4 | 55 | 61.2 | 4 | 4.4 |
| Communication Openness | 76 | 84.4 | 8 | 8.9 | 6 | 6.7 |
| Feedback & Communication About Error | 29 | 32.2 | 55 | 61.1 | 6 | 6.7 |
| Overall level nurses perception to patient safety culture | 61 | 67.8 | 26 | 28.9 | 3 | 3.3 |

Table (3): presents the level of nurses' practice regarding international patient safety goals at kafr el sheikh university hospital. It highlights that almost of (94.4%) of nurses had poor level of practice about internationally patient safety goals. While (5.6%) of them have average level of practice about internationally patient safety goals.

Table (3): Overall levels of nurses practice regarding international patient safety goals (IPSGs) at Kafr El Sheikh University Hospital (n=90).

| Practice regarding international patient safety goals domains | Practice level | | | | | |
|--|----------------|------|---------|------|------|-----|
| | Poor | | Average | | Good | |
| | No | % | No | % | No | % |
| Correct patients Identification domain | 85 | 94.4 | 5 | 5.6 | 0 | 0 |
| Improving effectiveness of communication domain | 89 | 98.9 | 1 | 1.1 | 0 | 0 |
| Improving the safety of high alert medications domain | 88 | 97.8 | 2 | 2.2 | 0 | 0 |
| Ensuring correct surgery domain | 75 | 83.3 | 15 | 16.7 | 0 | 0 |
| Reducing the risk of health care associated infection domain | 84 | 93.3 | 5 | 5.6 | 1 | 1.1 |
| Reducing the risk of patient harm resulting from fall domain | 85 | 94.4 | 1 | 1.1 | 4 | 4.5 |
| Overall practice regarding international patient safety goals | 85 | 94.4 | 5 | 5.6 | 0 | 0 |

Figure (1): demonstrate that there was statistical significantly positive correlation between nurse’s perception to patient safety culture and their practice regarding international patient safety goals at Kafr El Sheikh University Hospital.

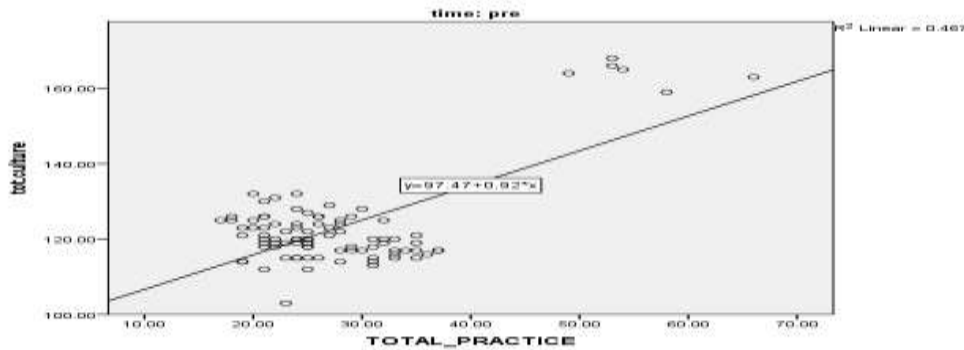


Figure (2): Correlation between patient safety culture and nurse’s practice of international patient safety goals at Kafr El Sheikh University Hospital (n=90).

Table (4): denotes the univariate linear regression between nurse’s perception to patient safety culture and their practice regarding international patient safety goals. The table shows a statistically contribution to the prediction of the explained variance between overall nurses’ perception to patient safety culture and practice regarding international patient safety goals with regression coefficient $R^2 = 0.749$, $F = 262.008$ with a high significant level at $p < 0.001$.

Table (4): Regression coefficients of simple linear regression of nurses’ overall perception of safety culture at Kafr El Sheikh University Hospital (n=90).

| Model | Unstandardized Coefficients | | Standardized Coefficients | t-test | P-value |
|--|-----------------------------|------------|---|--------|---------|
| | B | Std. Error | | | |
| Constant | 19.914 | 0.690 | | 28.858 | 0.000** |
| Patient safety culture | 0.872 | 0.054 | 0.865 | 16.187 | 0.000** |
| Independent variable: <i>Patient safety culture</i> . Model AOVA: $F=262.008$ ** Significant correlation at $P < 0.01$. | | | Dependent variable: <i>Practice</i> . $R^2 = 0.749$ $P = 0.000$ ** * Significant correlation at $P < 0.05$ | | |

4. Discussion:

The way to improve safety is learning about causes of error and use this practice to design systems of care to make errors less common and less harmful. Policymakers and health care providers have intensified their efforts to understand and change

organizational conditions, components and processes of health care systems as they relate to patient safety (Lewis et al., 2024).

Regarding the present study revealed that most of nurses were had poor level of perception about patient safety culture. This could be caused by the

fact that nurses don't know enough about the international patient safety goals and safety culture 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, et al. (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 engagement 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 fifty 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.

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. Also, Lack of resources and consumables for implementing the internationally patient safety goals is another issue.

The findings of this study are corroborated by Hamed et al. (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 three quarter 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 et al. (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 IPSGs.

However, the study carried out by Brasaitte et al. (2017), which evaluated healthcare professional's knowledge's of patient safety, contradicts this finding, demonstrating that the majority of healthcare professionals were proficient in IPSPG skills.

These results demonstrated that there were highly statistically significant correlations among nurses' perception to patient safety culture and their practice regarding international patient safety goals. This result may be attributed to the great role of nurse's perception to patient safety culture that reflect in their practice regarding international patient safety goals and there that make nurse more knowledgeable, more mindful and help them in continues self-development.

According to Alrasheadi et al., (2022) who evaluate and measure the existing safety culture and safety of patients in medical& surgical wards (MSW) in hospitals and mentioned nurses, the largest group of direct health care providers, are indispensable members of the health care system; therefore, they shoulder the responsibility of patient safety in hospitals. And added Measuring the existing safety culture of hospitals and the perceptions of nurses toward a safety culture enables the identification of strengths, areas for improvement, and possible interventions.

Conclusion:

Two third of nurses had poor perception to patient safety culture and Utmost of them had poor performance regarding international patient safety goals. According to the study's findings, there were highly statistically significant correlations among nurses' perception to patient safety culture and their practice regarding international patient safety goals.

Recommendations:

- Conduct training program for nurses to promote patient safety culture and quality practice regarding international patient safety goals.
- Conduct periodic meeting for discussion and solving obstacles facing nurses regarding application international patient safety goals.
- Recognition system have to be applied for units or personnel who had practice of optimal level.

- Engaging nurses must be in their professional development to strive for excellence in nursing competencies, contributing to patient safety.
- Attending training course and education program for refreshing and increasing knowledge and skills about patient safety culture for nurses.

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