NURSES' AWARENESS ON PATIENT SAFETY CULTURE IN A NEWLY ESTABLISHED UNIVERSITY HOSPITAL

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Abstract

As a vital part of patient care delivery, patient safety culture contributes to the quality of care provided by nurses. Safe patient care is positively linked to the attitudes of nurses. This study aimed to assess the perception of nurses working in a newly established teaching hospital. A cross-sectional study involving 194 nurses from three different units was conducted by using a 24-item Hospital Survey of Patient Safety Culture. Data on gender, working unit, age, years of working, and attendance in workshops on patient safety were also collected. The majority of the nurses had a positive total score of patient safety culture. The lowest score was 76 (63%), and the highest score was 120 (96%). The awareness on patient safety culture significantly differed between gender, years of working, and working units. Post-hoc comparisons using Tukey's HSD test yielded a significant difference between nurses from critical care units and those from medical and surgical units. The mean score and total positive score on awareness on patient safety culture of the former were higher than those of the latter. Overall, the majority of the staff nurses in International Islamic University Malaysia Medical Center had a positive total score on awareness on patient safety culture. Awareness on patient safety, which is considered crucial worldwide, should be enhanced to influence the development of a positive patient safety culture within hospitals. This implementation would directly develop high-quality care to patients and positively impact health organizations.

Keywords: culture, hospital, nurses, patient safety

Abstrak

Kesadaran Perawat terhadap Budaya Keselamatan Pasien di Rumah Sakit Universitas yang Baru Dibangun. *Sebagai bagian penting dari pemberian perawatan pasien, budaya keselamatan pasien berkontribusi pada kualitas perawatan yang diberikan oleh perawat. Perawatan pasien yang aman secara positif terkait dengan sikap perawat. Penelitian ini bertujuan untuk menilai persepsi perawat yang bekerja di rumah sakit pendidikan yang baru dibangun. Sebuah studi cross-sectional yang melibatkan 194 perawat dari tiga unit yang berbeda dilakukan dengan menggunakan Survei Rumah Sakit Budaya Keselamatan Pasien. Data tentang jenis kelamin, unit kerja, usia, tahun kerja, dan kehadiran dalam lokakarya tentang keselamatan pasien juga dikumpulkan. Mayoritas perawat memiliki skor total positif dari budaya keselamatan pasien. Skor terendah adalah 76 (63%), dan skor tertinggi adalah 120 (96%). Kesadaran tentang budaya keselamatan pasien berbeda secara signifikan antara jenis kelamin, tahun kerja, dan unit kerja. Perbandingan post-hoc menggunakan uji HSD Tukey menghasilkan perbedaan yang signifikan antara perawat dari unit perawatan kritis dan mereka dari unit medis dan bedah. Skor rata-rata dan skor total positif pada kesadaran tentang budaya keselamatan pasien dari yang pertama lebih tinggi daripada yang terakhir. Secara keseluruhan, mayoritas staf perawat di International Islamic University Malaysia Medical Center memiliki skor total positif pada kesadaran tentang budaya keselamatan pasien. Kesadaran akan keselamatan pasien, yang dianggap penting di seluruh dunia, harus ditingkatkan untuk memengaruhi perkembangan budaya keselamatan pasien yang positif di rumah sakit. Implementasi ini secara langsung akan mengembangkan perawatan berkualitas tinggi kepada pasien dan berdampak positif bagi organisasi kesehatan.*

Kata Kunci: budaya, keselamatan pasien, perawat, rumah sakit

Introduction

According to the American Nurses Association (2010), "nursing is the protection, promotion, and optimization of health and abilities, prevention of illness and injury, alleviation of suffering through the diagnosis and treatment of human responses, and advocacy in the care of individuals, families, communities, and populations." According to expectation, nurses help create or enhance the delivery of care to maintain the good quality of safe care through the early identification and reporting of adverse events, followed by innovative systematic approaches to enhance competency in delivering safe care in healthcare systems. Safety is a basic need and definite right of individuals as patients receiving health services (Shams et al., 2014).

To integrate all responsibilities, nurses must inculcate a positive patient safety culture and play an important role in improving patient safety in health care centers (Kiaei et al., 2015). Hence, a study on patient safety culture can provide important feedback to health care systems and facilitate improvement plans based on recognition in certain problems areas. When nurses deliberate the importance of safety and make it a part of their responsibility, safety becomes a priceless element and top priority of wards in every shift. Interestingly, when safety changes into a culture in a ward, nurses pay more attention to their tasks and remark it as a value that needs to be preserved throughout their shift to prevent any adverse events (Kiaei et al., 2015). Gozlu and Kaya (2016) emphasized that safety culture involves all organizational personnel that is continuously and actively aware of the possibility of making mistakes.

The importance of patient safety has increased, and nurses who represent the largest component of the health care workforce face various challenges on how to provide safe care for their patients because healthcare services have become more complicated (Brasaitė et al., 2016). Nurses work not only with a risk of having musculoskeletal problems (Yusoff, Firdaus, Jamaludin,

& Hasan, 2019) but also under pressure with a constantly changing environment, where a situation can lead to errors that may harm patients (Gozlu & Kaya, 2016). Globally, adverse events occur in approximately 10% of hospitalized patients, and individual studies have reported adverse events from 4% to 17% of hospital admissions, and 5–21% of these adverse events result in death (WHO, 2015). Unsafe healthcare services can lead to patient harm and financial burdens, so patient safety is considered the most important quality indicator in healthcare systems (Hemmat, Atashzadeh-Shoorideh, Mehrabi, & Zayeri, 2015). Safety must be prioritized as emphasized in Abraham Maslow's theory and hierarchy of organizational needs, which considered safety as an important basic human need.

The culture of the nursing profession is based on patient advocacy in which nurses play a prominent role in preserving their patients' safety to create, maintain, and promote the quality of care (Brown, 2015). Indeed, safety culture reflects individuals' technical knowledge and roles in cases of adverse events. According to Hemmat et al. (2015), having awareness on patient safety culture can provide advantages such as reducing treatment errors, damages due to incorrect care, and nosocomial infections and increasing patient satisfaction, patient awareness on accountability level, patient safety, and quality of healthcare services. A patient safety culture can direct staff's cognition and decision-making by establishing and emphasizing safety priorities and determining acceptable and objectionable safety attitudes toward patients (Weaver et al., 2013). Hence, safe care can be provided and preventable injuries and deaths can be minimized by cultivating a positive patient safety culture. The essential aspects of patient safety culture are teamwork, communication, shared beliefs about safety, and organizational learning (Tehranian, 2018).

Therefore, nurses have the most important role in healthcare organizations; they must have appropriate skills and knowledge to carry out multiple roles (Sharif, Hasan, Jamaludin, & Firdaus,

2018) in maintaining patient safety. This study aimed to identify whether nurses in International Islamic University Malaysia Medical Center (IIUMMC), Kuantan Pahang, were aware of patient safety culture within their units. It focused on identifying nurses' awareness on patient safety culture. This study also aimed to determine the perception of nurses regarding patient safety culture and their awareness on patient safety culture in terms of working units, genders, age, years of working, and attendance in workshops on patient safety.

Methods

The study was conducted in three units (medical, surgical, and critical care) of the IIUMMC, and 194 nurses were involved. Convenience sampling was conducted to recruit them. A set of 24-item Likert Scale of Hospital Survey of Patient Safety Culture (HSOPSC) was used because it is specifically designed to measure the awareness and perception about patient safety culture. The validated set of the questionnaire was distributed to the nurses from the three units, and it was completed by subjects who met the inclusion criteria (N= 194).

This instrument consists of four subscales: subscale 1, "teamwork;" subscale 2, "perception of patient safety;" subscale 3, "communication;" and subscale 4, "feedback and frequency of events reported." Each subscale consisted of three to four questions. The minimum and ma-6ximum scores for each item were 1 and 5, respectively. According to the Agency for Healthcare Research Quality (AHRQ), more than 60% indicated positive or high patient safety culture (Sorra et al., 2016). A high mean score also implied high awareness on patient safety culture. A pilot study was conducted to test the validity and reliability of the instrument with Cronbach's alpha of 0.887.

Approval was attained from the Kulliyyah of Nursing Post-Graduate Research Committee, International Islamic University Malaysia Research Ethics Committee, and the Research and Education Unit of IIUMMC. SPSS version 20 was used to analyze data. Descriptive analysis was conducted to identify the awareness on patient safety culture. An independent t-test was run to compare the means between gender and attendance in workshop on patient safety. One-way ANOVA was performed for different units and years of working among the nurses. Results were considered statistically significant ($p < 0.05$).

Results

A total of 194 nurses were recruited from three different units, namely, medical (n= 62), surgical (n= 62), and critical care (n= 70). Of these nurses, 121 were females, and 73 were males. In terms of working experience, 128 nurses have been working for 1–5 years, 6–10 years (n= 37), and 11–15 years (n= 21), whereas 8 of them have been working for 16 years and above. A total of 155 nurses were between 21 and 30 years old, 35 nurses were between 31 and 40 years old, and 4 nurses were above 40 years old. A total of 154 participants attended a workshop on patient safety, whereas 40 nurses did not. Table 1 shows the demographic data of all respondents. The lowest and highest scores of the nurses' awareness on patient safety culture were 76 (63%) and 120 (96%), respectively.

An independent t-test was used to investigate the association between gender and nurses' awareness on patient safety culture. The result showed statistically significant differences in the gender of the respondents and the awareness on patient safety culture for every subscale ($p < 0.05$). The details of t-test analysis are presented in Table 2. However, attendance in workshops on patient safety with the awareness on patient safety culture had no statistically significant differences.

One-way ANOVA was conducted to examine the association between the units and years of working toward the awareness on patient safety culture. Table 3 shows the mean score achieved by the respondents based on their respective units. The mean scores of subscales 1 (teamwork),

Table 1. Demographic Data of the Respondents

Variables		Frequency (n)	Percentage (%)
Age	21–30 years	155	79.9
	31–40 years	35	28
	Above 40 years	4	2.1
Gender	Male	73	37.6
	Female	121	62.4
Years of working	1–5 years	128	66.0
	6–10 years	37	19.1
	11–15 years	21	10.8
	16 years above	8	4.1
Unit	Medical	70	36.6
	Surgical	62	32
	Critical Care	62	32
Attending workshops or training	Yes	154	79.4
	No	40	20.6

Table 2. Subscale and Total Summary Score based on Gender

Subscale	Gender, Mean (SD)			Attendance in workshop Mean (SD)		
	Males (n= 73)	Females (n= 121)	p	Yes (n= 154)	No (n= 40)	p
1 (Teamwork)	31.7 (2.9)	30.9 (4.5)	0.009	31.2 (4.2)	31.3 (2.8)	0.566
2 (Perception of Patient Safety)	34.5 (5.3)	31.8 (6.5)	0.001	32.6 (5.1)	33.6 (9.4)	0.587
3 (Communication)	25.1 (3.2)	22.3 (3.7)	0.001	23.6 (3.8)	22.4 (3.5)	0.056
4 (Feedback and Frequency of Events Reported)	11.9 (1.7)	10.9 (1.7)	0.001	11.4 (1.7)	11.0 (2.2)	0.140
Total score	103.4 (10.5)	96.1 (11.3)	0.001	99.0 (11.0)	98.4 (13.6)	0.412

Table 3. HSOPSC Subscale and Total Summary Score by Units

Subscale	Medical (n= 70)	Surgical (n= 62)	Critical Care (n= 62)	p
1 (Teamwork)	30.6 (5.5)	30.7 (3.1)	32.4 (2.0)	0.012
2 (Perception of Patient Safety)	31.0 (8.3)	31.9 (4.5)	35.8 (3.2)	0.001
3 (Communication)	21.8 (3.0)	23.0 (4.3)	25.5 (2.9)	0.001
4 (Feedback and Frequency of Events Reported)	10.7 (1.6)	11.2 (1.8)	12.1 (1.7)	0.001
Total score	94.1 (11.9)	97.0 (10.8)	106.1 (7.9)	0.075

Table 4. Subscale and Total Summary Score in Terms of Years of Working (N= 194)

Subscale	1–5 years (n= 128)	6–10 years (n= 37)	11–15 years (n= 21)	16 years above (n= 8)	p
Teamwork	31.4 (4.5)	30.7 (2.0)	31.4 (2.2)	30.3 (5.2)	0.428
Perception of patient safety	32.6 (6.8)	33.3 (4.6)	33.8 (5.1)	31.7 (4.2)	0.266
Communication	22.9 (3.7)	23.6 (4.2)	25.3 (2.6)	24.6 (3.2)	0.028
Feedback and frequency of events reported	11.3 (1.8)	11.4 (1.9)	11.6 (1.5)	10.8 (1.5)	0.652
Total score	98.3 (11.9)	99.1 (11.1)	102.3 (9.9)	97.6 (11.5)	0.059

work), subscale 2 (perception of patient safety), subscale 3 (communication), and subscale 4 (feedback and frequency of events reported) were significantly higher in critical care unit nurses than in other nurses (p< 0.05). Post-hoc comparisons using Tukey's HSD test suggested that the mean scores between nurses from medical and critical care units and nurses from surgical and critical care units were significantly different. The mean score of the nurses from the critical care unit (M= 32.4, SD= 2.0) was higher than that of the other nurses.

Post-hoc comparisons using Tukey's HSD test for subscale 2 suggested that the mean scores between nurses from medical and critical care units along nurses from surgical and critical care units were significantly different. The mean score of critical care unit nurses (M= 35.8, SD= 3.2) was higher than that of medical and surgical nurses. For subscale 3, post-hoc comparisons using Tukey's HSD test revealed a significant difference between nurses from critical care units and nurses from surgical and medical units. This study also found a significant difference between units (critical care units and surgical and medical units) and awareness on patient safety culture for subscale 4 (p= 0.001). Post-hoc comparisons using Tukey's HSD test suggested that the mean scores between the nurses from medical and critical care units and the nurses from surgical and critical care units were significantly different. The mean score of the nurses from critical care units (M= 12.1, SD= 1.7) was higher than that of the other nurses.

In Table 4, the relationship between years of working and awareness on patient safety culture showed no significant difference except in subscale 3 (communication; p= 0.028). A significant difference was observed between the years of working (1–5 years, 6–10 years, 11–15 years and 16 years above) and the awareness on patient safety culture for subscale 3 (p= 0.028). Post-hoc comparisons using Tukey's HSD test indicated significant differences between nurses with 1–5 years of working (M= 22.9, SD=

3.7) and nurses with 11–15 years of working (M= 25.3, SD= 2.6) for subscale 3.

Discussion

A total of 194 respondents from three different units, namely, medical, surgical, and critical care, reported a positive score awareness on patient safety culture. According to the AHRQ, more than 60% indicates a positive or high patient safety culture (Sorra et al., 2016). This finding is important for highlighting the value of having awareness regarding patient safety culture among nurses. This notion has been supported, considering that health care organizations have increasingly acknowledged the role of changing organizational cultures in the improvement of patient safety and the attempts and progressive attention to safety culture (Kiaei et al., 2015).

Progressive attention to safety culture has been associated with the need for assessment tools, especially attempts to improve patient safety. According to a patient safety organization, an effective safety culture involves a proactive approach versus a reactive approach to prevent harm and connects care processes within a healthcare delivery system, especially at a patient care unit level. With the good quality of this culture, a health organization can provide patients with safe, effective, timely, efficient, equitable, and patient-centered care, leading to best outcomes (Congenie, 2014).

Mahrous (2018) studied 240 nurses and revealed that their commitment to quality care as an outcome is certainly correlated with patient safety. Standard policies should also be improved and promoted to enhance patient safety culture in hospitals (Mahrous, 2018). Thus, the improvement in promoting an environment with a positive patient safety culture likely provides the best outcomes.

Our results revealed a significant difference in gender pertaining to the awareness on patient safety culture (p= 0.001) and agreed with previ-

ous findings, which shared the same concern on the awareness on patient safety culture. For example, Güneş, Gürlek, and Sönmez (2015) conducted a cross-sectional study and obtained similar outcomes, indicating that the awareness of male nurses on patient safety culture is higher than that of female nurses. Other studies have also supported this result and observed significant differences in the comparison of the awareness on patient safety culture between males and females (Alameddine, Saleh, & Natafgi, 2015; Gozlu & Kaya, 2016).

Interestingly, another study found no significant difference in the comparison between both genders. The most common issues that need to be reconsidered were traditional beliefs about gender issues. Male participants also revealed that gender-based stereotypes contribute to their job dissatisfaction; therefore, to cope with this situation, they used it as motivation to deliver high-quality care. However, other factors, including individual passion, working environment, and social stigma in wards, should be investigated because they directly or indirectly influence the awareness level on patient safety culture between male and female nurses. Our study revealed that male nurses with positive patient safety culture could provide new insights and energy and create an environment with high-quality care.

This study did not show a statistically significant difference in attendance in workshops on patient safety (p> 0.05) in each subscale. In this case, attending a workshop on patient safety was not significantly associated with the awareness on patient safety culture.

The nonsignificant difference observed in this cross-sectional study might be due to the existence of other external factors that were not highlighted in this research. Moreover, nurses have been educated regarding the importance of patient safety since they were nursing students, regardless of attendance in certain workshops on patient safety; therefore, they are already aware of patient safety. They also know how to

minimize adverse events because of medical errors in a high-risk health sector via direct or indirect discussion.

A significant difference was observed in the association between units and nurses' awareness on patient safety culture. This result was consistent with previous findings, which revealed a higher positive score on patient safety culture among nurses working in the critical care unit (Güneş et al., 2015; Gozlu & Kaya, 2016). As for the significant difference result in this study which the nurses working in critical care units had a higher patient safety culture score, other factors may have directly or indirectly influence outcomes. According to Güneş et al. (2015), critical care units are specifically prone to having a greater incidence of medical errors caused by the treatment of extremely ill patients. Numerous medication prescriptions and frequent stressful situations occur with work overload in a busy area. Our results might be explained by the better training and specialization in safety-related issues of nurses. Hence, a more specialized unit likely leads to the further understanding and immersion about the rationale of procedures and skills that can indirectly contribute to differences in nurses' awareness on patient safety culture.

By contrast, a previous study observed no significant difference in working areas or units. Weaver et al. (2013) reported that neither subscales were able to assess significant differences in the level of awareness on patient safety culture between different wards and units. However, this study did not provide any explanation on why this condition happened, so a larger longitudinal study should be conducted to further discuss this result. Weaver et al. (2013) indicated that improving patient safety culture is a standard recommendation for nurses to enhance patient safety and quality of care. Hence, adverse events and errors can be reduced through a strong patient safety culture practiced in a unit because a positive safety culture is associated with a low rate of errors (Tehranian, 2018). Therefore, nurses should have high awareness

on patient safety culture regardless of their units to minimize the rate of errors.

The nurses in different age groups did not differ significantly in terms of the awareness on patient safety culture: subscale 1, teamwork (p= 0.428); subscale 2, perception of patient safety (p= 0.961); subscale 3, communication (p= 0.352); and subscale 4, feedback and frequency of events reported (p= 0.749). This finding is similar to a study by Tehranian (2018), whereby it showed a nonsignificant difference regarding the age of the nurses.

However, Alameddine et al. (2015) and Gozlu and Kaya (2016) found that nurses aged above 30 years appear to have higher awareness on patient safety culture than those aged below 30 years. With age, they must gain various kinds of experiences that contribute to a high positive score about awareness on patient safety culture (Gozlu & Kaya, 2016).

Therefore, this cross-sectional study obtained nonsignificant findings possibly because of the existence of other external factors that were not highlighted in this research. Parker, Lawrie, and Hudson (2006) demonstrated that patient safety culture can be affected by institutional changes, leadership, systems, and procedures that disregard age. Organizational culture plays a critical role in reducing medical errors and adverse events as one of the most important strategies in determining and improving patient safety within health institutions by developing a positive patient safety culture.

Nurses with different years of working discovered a significant difference in communication. This finding was similar to that of Güneş et al. (2015) and Tehranian (2018), who showed a significant difference in the years of working. In our study, work experience at a hospital affected the patient safety culture score as indicated the increase in the total score of patient safety culture with the increase in the years of nurses' experience. Thus, with more experience,

awareness regarding safety practices undertaken in an organization increases. The longer the duration of working years, the higher the positive score of perception, and awareness on patient safety. For the significant difference found in subscale 3, it is among the items that can be developed and improved throughout time as it can be gained through experiences. Thus, a positive safety culture can be created through open communication, mutual trust and shared perceptions about the importance of safety, and confidence in the efficacy of preventative measures (Güneş et al., 2015).

Nurses work in changing healthcare environments, indicating that they have a continuous learning role for their professional development, job satisfaction, and continuous improvement of patient care, especially patient safety (Skår, 2010). Therefore, high awareness on patient safety is normally achieved when nurses gain more experience in encountering various types of patients within their working duration.

Some of the limitations of this study were time constraints, lack of cooperation from the respondents, and sample size. Our results could not be used as a basis for providing a generalized conclusion because our samples were taken from one newly established teaching hospital.

Conclusions

Overall, most of the staff nurses in IIUMMC had positive awareness on patient safety culture. This study may promote the culture of safety among nurses who are considered crucial worldwide to influence the enhancement of patient safety within hospitals. Patients' safety culture can lead to enhanced care that positively affects organizations.

Acknowledgement

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