Factors Associated with Nurses' Attitude towards Patient Safety Culture in an International Accredited Tertiary Care Hospital, Islamabad

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ABSTRACT

Background: Patient safety has emerged as a prime agenda over the past few decades to deliver safe care in increasingly complex service delivery. This study was set out to measure the factors associated with the safety attitudes of nurses.

Methodology: This descriptive cross-sectional research was conducted from May 2017 to June 2018 in Shifa International Hospital, Islamabad. Nurses were invited to participate in the study. The safety attitude questionnaire was used for data collection. Data were analyzed using SPSS v23.0.

Results: The response rate was 86%. Job satisfaction was high at 78.37±23.63 while stress recognition was low at 53.18±27.68. Nurses liked their job being a nurse 79.92±28.01 and workplace conditions 80.33±26.44. Whereas, hostile situations 48.92±34.95, the negative effect of fatigue 48.50±35.32, being held back to report patient problems 47.58±34.76 and discuss errors 45.42±34.79 were also highlighted. Safety attitudes were statistically significant high among intensive care nurses (P-Value < 0.05). Safety scores of nurses with longer job duration were high than those with lesser job duration. Teamwork was favorably correlated with safety climate, job satisfaction, perception of management, and working conditions (R > .466, P-Value < .01).

Conclusion: There was a positive attitude of nurses toward patients' safety with some areas of improvement.

Key Words: Attitude, Nurse, Patient safety, Practice

Introduction

Patient safety has emerged as a prime agenda over the past few decades to deliver safe care in increasingly complex healthcare delivery.[1] Regardless of changes in the current healthcare system to introduce quality checks and accreditations, the occurrence of errors is inevitable and may result in severe harm to the patients.[2] The World Health Organization estimated that an average of 10% of all inpatient visits result in some kind of unintentional harm to the patient.[3]

Therefore creating a culture of safety has been accentuated as a decisive strategy to improve patient safety.

The patient safety culture includes professionals' attitudes, values, perceptions, competencies, commitment, and the ability of an organization to manage patient safety. [4] Nurses play a pivotal role to exercise patient safety due to the nature of their work with patients. This encompasses nurses' direct involvement in patient care around the clock. [5] Therefore, healthcare facilities provide them with various prospects to reduce patient harm and intercept healthcare errors even before they occur. [6] Studies have shown a correlation between patient safety culture with better patient outcomes including shorter length of stay, willingness to report errors, reduced number of falls among patients, and lower rates of hospital-acquired complications. [7]

Nurses provided with a positive organizational culture, commitment to a culture of reporting and sharing of error and adverse events improves patient safety and reduces mortality rates.[8] To ensure a safe environment and quality practices, it is crucial to promote the measurement and improvement of safety attitudes among healthcare providers.[9] The study from neighboring country show the need for improvement in the patient safety culture [10]. Very little is explored about nurses' perception and attitude towards patient safety in the local context. [11] Examining attitudes of safety culture and factors could provide useful information to hospital leadership and management to develop strategies to improve patient safety.

Methodology

This study was approved by the institutional review board and ethics committee of the Shifa International Hospital (IRB& EC # 821-096-2017). A descriptive cross-sectional research design was adopted to conduct the study at Shifa International Hospital Islamabad, Pakistan from May 2017 to June 2018. The registered nurses working in non-managerial positions in the in-patient department were our study population. The sample size was calculated using OpenEpi online calculator using the formula, n = [DEFF*Np(1-p)]/ [(d^2/Z$^2_{1-\alpha/2}$*(N-1)+p*(1-p)]. The calculated sample size was 350 nurses based on a 95% confidence interval. Nurses working in the in-patient department were invited to participate in the study using consecutive sampling. Nurses in the resignation and probation period were excluded from the study. Written consent was taken. Questionnaires were distributed and collected on subsequent days at the convenience of the study participants.

The data were collected with a structured Safety Attitude Questionnaire (SAQ) short version composed of 30 items and divided into six subscales; teamwork climate, safety climate, job satisfaction, stress recognition, perception of management, and working conditions. The responses were rated on five points Likert scale (1=strongly disagree, 2 = Disagree Slightly, 3= Neutral, 4= Agree Slightly and 5= Agree Strongly) and were converted to a 100-point scale as 1=0, 2=25, 3=50, 4=75, and 5=100 for scoring. The negatively worded items 2nd and 11th were reverse scored to match their valence with positively worded items. Questionnaire demonstrated acceptable construct validity and internal consistency (Cronbach's alpha 0.61–0.91).[12] The questionnaire was extensively used including Saudi Arabia[13] and India[14] to measure the safety attitudes. The data were analyzed using SPSS v23.0 (Statistical Package for Social Sciences). Descriptive statistics were applied to describe the demographic characteristics. Pearson's correlation was applied to measure the correlation between dimensions of safety culture attitude. ANOVA was used to measure differences. A P-Value of < 0.05 was considered statistically significant.

Results

Table I: Demographic Characteristics of the Nurses (n=300)		
		Frequency (%)
Gender	Male	164 (55)
	Female	136 (45)
Professional Qualification	BSN	126 (42)
	Diploma	174 (58)
Workplace	Medical	87 (29)
	Surgical	94 (31)
	Pediatrics	24 (8)
	Emergency	34 (11)
	ICU	61 (20)
Job Duration	< 1 Year	88 (29)
	1 to 3 Years	139 (46)
	4 to 9 Years	63 (21)
	> 10 Years	10 (3)
Safety Education	Yes	283 (94)
	No	17 (6)
Bachelor of Science in Nursing (BSN), Intensive Care Unit (ICU)		

The questionnaire was distributed among 350 nurses and the response rate was 85.7%. Out of those were predominantly male 164 (55%) and obtained three years of Diploma in Nursing 174 (58%) as compared to their BSN counterparts. The participants were working in diverse hospital wards including medical at 29%, surgical at 31%, pediatrics at 8%, emergency department at 11%, and ICU at 20%. With regards to the duration of work, the majority 139 (46%) had been working for 1-3 years in their current unit. When asked if they had received any prior training regarding patient safety 283 (94%), gave a positive response. (Table – 1)

Job satisfaction received the highest mean score of 78.37±23.63 while stress recognition was lowest at 53.18±27.68 among the SAQ subscales. The highly rated safety attitudes among nurses included they liked their job being a nurse at 79.92±28.01,

appreciated the workplace at 80.33±26.44, supportiveness at workplace at 79.58±26.85, working in a multidisciplinary team at 78.08±28.13, felt proud at their clinical work at 77.75±27.94, being able to ask questions at 75.67±27.27 and they would feel safe being treated as a patient at 75.58±29.02. Whereas, hostile situations at 48.92±34.95, the negative effect of fatigue during emergency situations at 48.50±35.32, being held back to report patient care problems at 47.58±34.76 and discuss errors at 45.42±34.79. The tool overall showed the favorable internal consistency of Cronbach's Alpha 0.917 as well. Table – 2

The table – 3 denotes outcomes of ANOVA. There were no statistically significant differences regarding job duration of the nurses. However, teamwork climate, safety climate, job satisfaction, perception of management and working conditions scores of nurses with >10 years of job duration were high. Whereas, stress recognition scores of nurses with <1 year of job duration were high. The workplace, safety climate, job satisfaction, perception of management, and working conditions score of intensive care unit nurses were statistically high than those in medical, surgical, pediatric and emergency units (P-Value < 0.05).

The teamwork showed the moderate correlation with safety climate, job satisfaction, perception of management, working conditions and low correlation with the stress recognition at 0.01 confidence level. The high positive correlation was found among job satisfaction and working conditions at 0.01 confidence level. The stress recognition showed the low positive correlation with teamwork and perception of management. Table – 4

Table II: Descriptive evaluation of nurses on Safety Attitude Questionnaire items		
Sr.	Safety Attitude Items	Mean±SD

	Teamwork climate (Cronbach's Alpha, 0.720)	68.08±19.50
1	Nurse input at workplace	71.67±30.56
2	Held back to report patient problems*	47.58±34.76
3	Positive response to disagreements	65.00±30.74
4	Support for patient care	70.50±29.28
5	Clear response to questions	75.67±27.27
6	Multidisciplinary team work	78.08±28.13
	Safety climate (Cronbach's Alpha 0.819)	67.66±21.36
7	Feel safe as a patient	75.58±29.02
8	Handling of medical errors	74.25±28.51
9	Clear channels of communication	74.08±31.23
10	Constructive performance feedback	61.67±33.12
11	Difficult to discuss workplace errors*	45.42±34.79
12	Encouraging environment to report errors	71.67±29.79
13	Supportiveness to learn from errors	71.00±27.97
	Job satisfaction (Cronbach's Alpha 0.904)	78.37±23.63
14	Likes the job	79.92±28.01
15	Supportive working environment	79.58±26.85
16	A good place to work	80.33±26.44
17	I am proud to work in this clinical area.	77.75±27.94
18	Morale in this clinical area is high.	74.33±29.88
	Stress recognition (Cronbach's Alpha 0.806)	53.18±27.68
19	Workload effects my performance	60.33±34.18
20	Fatigue negatively effects performance	55.00±34.82
21	Hostile situation increases errors	48.92±34.95
22	Challenges in emergency situation	48.50±35.32
	Perception of management (Cronbach's Alpha 0.740)	63.17±22.44
23	Support of management at workplace	61.28±31.25
24	Intentional patient safety concerns	59.50±31.57
25	Management of problem personnel constructively	65.92±27.64
26	Timely information of changes at workplace	66.00±29.17
	Working conditions (Cronbach's Alpha .776)	69.87±22.75
27	Sufficient staffing in the unit	57.92±34.55
28	Orientation and on-job training	74.08±28.28
29	Participation in patient care decisions	74.83±25.78
30	Supervision to trainees	72.67±28.31
	Overall Safety Attitude (Cronbach's Alpha 0.917)	67.30±16.53
* reverse coded, standard deviation (SD)		

Table 3: Patient safety culture differences regarding job duration and workplace

		Job Duration				Workplace		
	Years	Mean	SD	P-Value	Ward	Mean	SD	P-Value
Teamwork Climate	< 1	68.56	18.48	.363	Medical	69.59	19.76	.118
	1 – 3	66.61	21.21		Surgical	63.83	21.95	
	4 – 9	69.25	18.04		Pediatric	70.31	20.42	
	> 10	77.08	7.67		ER	68.01	15.00	
					ICU	71.65	16.10	
Safety Climate	< 1	69.03	19.86	.317	Medical	71.55	19.13	.001*
	1 – 3	66.11	22.59		Surgical	59.80	23.55	
	4 – 9	67.52	21.16		Pediatric	69.05	21.26	
	> 10	78.21	16.28		ER	66.91	20.40	
					ICU	74.12	18.05	
Job Satisfaction	< 1	77.33	25.79	.613	Medical	82.11	21.45	.008*
	1 – 3	77.94	23.73		Surgical	71.60	26.57	
	4 – 9	79.37	21.64		Pediatric	80.00	27.15	
	> 10	87.50	12.75		ER	76.62	22.92	
					ICU	83.85	18.27	
Stress Recognition	< 1	54.69	29.15	.812	Medical	50.57	26.65	.233
	1 – 3	51.53	29.00		Surgical	51.66	29.70	
	4 – 9	54.76	23.67		Pediatric	63.02	28.61	
	> 10	53.13	20.25		ER	50.37	20.12	
					ICU	56.97	28.76	
Perception of Management	< 1	63.73	22.35	.214	Medical	65.52	19.23	.018*
	1 – 3	61.37	22.41		Surgical	57.18	23.65	
	4 – 9	62.37	21.17		Pediatric	66.49	19.37	
	> 10	76.25	16.79		ER	59.68	25.27	
					ICU	67.72	20.80	
Working Conditions	< 1	75.92	24.21	.244	Medical	79.38	19.90	.006*
	1 – 3	72.66	23.42		Surgical	68.35	26.00	
	4 – 9	75.99	19.71		Pediatric	75.52	21.80	
	> 10	86.25	10.54		ER	71.88	23.35	
					ICU	79.41	18.59	

* Statistical significance P-Value < 0.05

Table IV: Correlation among dimensions of safety attitude questionnaire's subscales

		Teamwork Climate	Safety Climate	Job Satisfaction	Stress Recognition	Perception of Management	Working Conditions
Teamwork Climate	Pearson Correlation	1					
	P-Value						
Safety Climate	Pearson Correlation	.692**	1				
	P-Value	<.001					
Job Satisfaction	Pearson Correlation	.572**	.675**	1			
	P-Value	<.001	<.001				
Stress Recognition	Pearson Correlation	.170**	.098	.049	1		
	P-Value	.003	.091	.400			
Perception of Management	Pearson Correlation	.466**	.622**	.621**	.133*	1	
	P-Value	<.001	<.001	<.001	.022		
Working Conditions	Pearson Correlation	.579**	.648**	.748**	.044	.692**	1
	P-Value	<.001	<.001	<.001	.448	<.001	
**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).							

Discussion

The overall patient safety culture attitudes of nurses were positive. Nurses rated their job satisfaction and working conditions high. Female nurses showed significant affinity with safety climate, working conditions and stress recognition. Job satisfaction was higher among diploma graduated nurse while stress recognition among degree graduated nurses. Safety climate scores were high for intensive care nurses.

The main results of the study indicated the positive attitudes but few concerning gaps were also highlighted. The safety scores of nurses working in Arab [15] and southeast Asian [16] hospitals were consistent with current study. Whereas higher safety attitude scores were reported among the nurses working in the Chinese [10] and Indian studies [14]. The difference of safety scores among these countries may due to contextual, and policy variations. Arab countries mainly depend on expatriate nurses who comes from different backgrounds. Therefore, adjusting to the context and policies may be a challenge as compared to India and China whose nurses graduate from their own nursing education system.

The job satisfaction and working condition scores were higher. Whereas, stress recognition and perception of management scores were low in current study. This finding is consistent with Chinese [10] and European studies [17]. Generally accredited hospital offers good salary packages and working environment which may be reflected in job satisfaction of nurses. Whereas demanding and high-performance routine may contribute to stress and negative perception about management. Perhaps for these reasons, nurses pointed out the work overload, hostile situations and fatigue compromising their performance in emergency as well as in daily patient care activities. Moreover, the

need for managerial support to provide timely information, disciplining the problematic healthcare workers constructively was also indicated. The patient safety system framework based on human factors illuminate- physical and mental workload increase the likelihoods of negative patient outcomes.[18]

The scores of intensive care nurses were statistically significant higher in most patient safety culture dimensions. This finding is inconsistent with a Tunisian [19] whose patient safety score very low due to increased nurse patient ratio. An appropriate nurse patient ratio in present study may have attributed to high safety scores as well as due to higher job satisfaction, perception of management and working conditions than those in medical, surgical, pediatric and emergency units. The dynamics of context play an important role to establish the safety attitudes among nurses. The low perception of safety culture in most dimensions shown by the surgical unit nurses is similar to that reported in a previous study.[20] Perhaps surgical nurse face more challenges for providing care to critically ill patients.

The job duration also impacts the safety attitudes of the nurse. The nurses with greater job duration showed positive patient safety attitudes and stress perception of lower job duration.

This finding is consistent with a Canadian study [21] supporting due to the fact that nurses with greater job duration comprehend the organization policies and practices better than those with less job duration. On the contrary a Singaporean [22] study found higher patient culture safety score among professionals with lesser job duration.

Bivariate correlational analysis found that teamwork, job satisfaction, working conditions and perception of management significantly and positively correlate with patient safety culture while stress recognition weakly. This fact is supported in a meta-analytical review also.[23] The international accredited hospital function under high standards to provide quality care to patients as well as fringe benefits and standardized working conditions to employees. Such organizations can be demanding which is exhibited by the stress recognition of study participants.

There was number of limitations of the study including using of non-probability sampling and data collection from a single private hospital. Therefore, results should be generalized with caution. This was a quantitative study and may have missed certain contextual factors. A qualitative or mixed methods multi-institutional research could provide more valuable findings. Further multidisciplinary approach upholds the patient safety agenda which future research can focus.

Conclusion

This study provides a useful insight for patient safety culture. Greater job duration, job satisfaction, teamwork, perception of management and working conditions significantly contribute to the patient safety culture. The negative impacts of stress recognition should be alleviated. Hospital administration can use this information to reflect upon areas highlighted by nurses to promote and improve patient safety culture. A systematic and robust in-service education can improve patient safety culture.

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