

**Original Article****Assessment of Patients' Safety Culture and Quality Improvement In Hospitals of Pakistan: A Cross Sectional Study**Rukhsana Kousar^{1*}, Rashida Jabeen¹, Aqib Dil-Awaiz², Iltaf Hussain² and Rashida Bibi³¹Lahore School of Nursing, Faculty of Allied Health Sciences, The University of Lahore, Lahore, Pakistan²Liaquat Medical University of Health Sciences, Jamshoro, Pakistan³District Head Quarter Hospital, Muzaffar Garh, Pakistan

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ABSTRACT

Patients' safety culture is not very well evaluated nor focused yet in most of the developing countries including Pakistan. **Objectives:** To establish a baseline data on awareness about Patients' safety culture among nurses, physicians and other healthcare staff from public and private hospitals of Pakistan. **Methods:** Cross sectional study was undertaken in Department of Nursing, The University of Lahore in collaboration with various public and private hospitals of Pakistan during January 2020 to April 2020. Study participants were 348 including nurses, physicians, pharmacists. **Results:** Patient safety culture was observed in Punjab as compared to the other provinces. **Conclusions:** Few components of safety attitude questionnaires are adapted in excellence while other are practiced in average or below average. Improvements in patients' safety are necessary as in developing countries.

INTRODUCTION

Human errors are reality of life and happen in normal routine in any working conditions by individuals. Health care settings have complex nature due to variety of interlinked process which makes it more prone to the errors [1]. Provision of quality healthcare services needs to seek improvements in culturing safe environment as fundamental quality of any healthcare institution. Culture of safety may be defined as mutual values, behaviors and insights of safety within a healthcare organization in the direction of decreasing harm to the patients [2]. A recent study used twelve components of safety culture in public and private hospitals consisting of teamwork, supervision promoting patients' safety, continuous improvement at organizational level, management support for safety of patients, error feedback, open communication, frequency of error events, teaming across units, staffing, transitions and non-punitive response to errors concluded the

requirement of providing feedback of incident reporting is essential for promotion of healthcare safety culture [3]. A number of efforts from IOM have been posed to adopt safety culture among health organization even then a high prevalence of medical blunders have been noted around and may be due to the reflection of various social and ethnic factors and lack of trainings among healthcare workers [4,5]. Serious incidence due to human error in field of medicine is of great importance and contained prominence due to public health involvement. A study assessed and identified medical errors in an educational hospital of Iran using systematic human error reduction and prediction approach (SHERPA) and reported various medical errors. Thus study concluded the importance of using SHERPA in detecting and sorting medical errors in hospitals [4]. Mental catastrophe has also been reported to be one of the major factors in making human errors which considerable

influence professional outcomes of individuals therefore cognitive failure among nurses was investigated in a study proposed to observe effects of work on quality of life. Study concluded that overall changing effect of work related quality of life on cognitive failure in emergency ward though highly recommended the development of interventional and supportive strategies to overcome the issue [6,7].

A collaborative model has been proposed by a study undertaken in Washington School of Medicine to find the impact of collaborative care for depression or chronic illness patients and determined whether coordinated care of multiple diseased patients improves the quality of services or not and reported significant improvement in medical and depression related illnesses [8]. Safety culture among healthcare professionals is not new but scarcely practiced and rarely reported in developing countries. In literature developing countries discussed above are also showing various compromises regarding attitude of healthcare staff towards patients' safety culture [9,13]. No comprehensive and scientifically accurate study is found yet in Pakistan and there is great need to explore this problem. Patients' safety culture is not very well evaluated nor focused yet in most of the developing countries including Pakistan. As it is a fundamental right of each patient and therefore greatly needed to promote in health organization. It is necessary to explore the existing practices, attitude and factors related to safety culture among healthcare professionals. Therefore the study was conducted to establish a baseline data on awareness about Patients' safety culture among nurses, physicians and other healthcare staff from public and private hospitals of Pakistan.

METHODS

A Cross Sectional Study was conducted in the Department of Nursing, The University of Lahore in cooperation with various communal and private Pakistani hospitals from January 2020 to April 2020. A sample size of 348 participants was calculated by taking confidence level as 95%, precision level as 5% and expected value of positive attitude towards patients, safety culture by respondents as 34.5%. Participants were enrolled by using Non-probability convenient sampling technique. All the healthcare professionals working in any public or private hospital working specifically in any of surgical, medical, maternity care or intensive care units and have role in handling of patients were included in this study and the Healthcare professionals working in clinics, outpatients, internees, volunteers, employees consisting professional experience of <1 year or having no role in handling of patients were excluded from current study. Data was entered and analyzed

by statistical package for social sciences (SPSS) version 25.0. Qualitative variables like gender, sector, designation; education and working experience etc. were presented as frequency and percentage while quantitative variables including age and questions of SAQ were presented as mean±standard deviation (SD). Chi-square test was applied to compare the proportions where applicable like in association of gender and public or private sector with safety culture etc. while p-value <0.05 was considered as significant.

RESULTS

Data from a total of 348 respondents were collected and analyzed consisting of 183 (52.6%) males and 165 (47.4%) females while equal number of 174 respondents were interviewed each from public and private sector hospitals of the country. Mean age of respondents remained to be 38.83±9.62 years with a minimum age of respondent as 25 years and maximum of 57 years. Major proportion of 44.5% respondents was consisting of nurses while 39.7% physicians and 15.8% pharmacists. 201(57.8%) participants have Basic education level and only 55(15.8%) have MS/MPhil/PHD degree. 101(29.0%) have 5-10 years working experience and 91(26.1%) have more than 15 years of experience. (Table 1).

Characteristics		N	%
Gender	Male	183	52.6
	Female	165	47.4
Sector	Public	174	50.0
	Private	174	50.0
Province	Punjab	129	37.1
	Sindh	100	28.7
	KPK	73	21.0
	Baluchistan	46	13.2
Education Level	Basic	201	57.8
	Specialized Diploma	92	26.4
	MS/M Phil/PhD	55	15.8
Working Experience	<5 Years	75	21.6
	5-10 Years	101	29.0
	11-15 Years	81	23.3
	>15 Years	91	26.1

Table 1: Demographic Characteristics of Respondents

Factors related to patients' safety culture and adaptation were assessed among respondents which were further compared regarding their specialty. An overall prevalence of job satisfaction remained to be the highest (78.7%) followed by stress recognition as 73.9%. Climates of teamwork & safety, perceived management and good working condition remained to a bit higher than the average as shown in Table 2.

Factors	Specialty						Total	
	Nurse		Physician		Pharmacist			
	n	%	n	%	N	%	n	%
Teamwork Climate	92	59.4	92	66.7	45	81.8	229	65.8
Safety Climate	63	40.6	129	93.5	19	34.5	211	60.6
Job Satisfaction	155	100.0	64	46.4	55	100.0	274	78.7
Stress Recognition	119	76.8	102	73.9	36	65.5	257	73.9
Perceived Management	101	65.2	101	73.2	37	67.3	239	68.7
Good Working Condition	100	64.5	74	53.6	36	65.5	210	60.3

Table 2: Comparison of Factors Related to Safety Culture with Specialty

Safety culture was observed regarding province wise proportions showing a high number of frequencies and better percentages are shown in Punjab province as compared to other provinces except job satisfaction was found to be 100% in Baluchistan Province. Table 3 shows the province wise comparison of same factors.

Factors	Province							
	Punjab		Sindh		KPK		Baluchistan	
	N	%	N	%	N	%	n	%
Teamwork Climate	119	92.2	37	37.0	55	75.3	18	39.1
Safety Climate	47	36.4	72	72.0	55	75.3	37	80.4
Job Satisfaction	101	78.3	91	91.0	36	49.3	46	100.0
Stress Recognition	102	79.1	100	100.0	37	50.7	18	39.1
Perceived Management	92	71.3	46	46.0	73	100.0	28	60.9
Good Working Condition	73	56.6	64	64.0	64	87.7	9	19.6

Table 3: Comparison of Factors Related to Safety Culture with Provinces

A significant difference (p -value ≤ 0.05) among public and private sectors was observed regarding teamwork, safety climate, stress recognition and perceived management while an insignificant difference (p -value ≥ 0.05) regarding job satisfaction and good working condition as shown in table 4.

Factors	Sector				p-value
	Public		Private		
	n	%	N	%	
Teamwork Climate	101	58.0	128	73.6	0.013
Safety Climate	119	68.4	92	52.9	0.022
Job Satisfaction	137	78.7	137	78.7	1.0
Stress Recognition	138	79.3	119	68.4	0.047
Perceived Management	92	52.9	147	84.5	0.0001
Good Working Condition	111	63.8	99	56.9	0.308

Table 4: Sector-wise Comparison of Factors Related to Safety Culture

Gender was also found to be predictor in only two safety related factors and significant difference (p -value ≤ 0.05) was observed in stress recognition and good working conditions while an insignificant difference regarding teamwork, safety, job satisfaction, and perceived management was observed, thus belonging to the similarities in performances and understandings. (Table 5)

Factors	Gender				p-value
	Male		Female		
	N	%	N	%	
Teamwork Climate	127	69.4	102	61.8	0.229
Safety Climate	120	65.6	91	55.2	0.126
Job Satisfaction	137	74.9	137	83.0	1.0
Stress Recognition	110	60.1	147	89.1	0.0001
Perceived Management	128	69.9	111	67.3	0.667
Good Working Condition	100	54.6	110	66.7	0.074

Table 5: Gender-wise Comparison of Factors Related to Safety Culture

DISCUSSION

The results of current study show that the team work of nurses with physicians and employees' knowledge of proper channel to response remained as 73.6% simultaneously regarded moderately high proportions of agreement while highest disagreement rate of 58.1% was acquired by proper staffing in this study. Comparable results were presented by the parent study which featured prominent findings as teamwork 66.3%, safety climate 62.5% and stress recognition as 68.4% respectively [3].

Highest mean values in safety attitude questionnaire were achieved by "I like my job" as 3.76 ± 0.79 alike in table III of the same study. Any scores with mean values of ≥ 3.50 were regarded as excellent which includes around 10 questions among a total of 31 questions in this study perceiving very good safety attitudes. Moderately good mean scores of 3.25 to < 3.50 were obtained by 9 out of 31 questions while a mean score of < 3.0 rated to have negative impact was obtained by two forward and three reverse questions explaining that only 2 questions remained in negative marking regarding safety attitudes. An overall prevalence of job satisfaction remained to be the highest (78.7%) followed by stress recognition as 73.9%. Climates of teamwork & safety, perceived management and god working condition remained to a bit

higher than the average. Although ethnicity within the country does not seem to affect the safety protocol but found to be more positive in Punjab as compared to other provinces in this study findings though are comparable with other studies [14,15]. A significant difference (p -value ≤ 0.05) among public and private sectors was observed regarding teamwork, safety climate, stress recognition and perceived management while an insignificant difference (p -value ≥ 0.05) regarding job satisfaction and good working condition. Since Pakistan is suffering from various issues in healthcare services including low budget, lack of appropriate allocation and transparency [16].

Gender was also found to be predictor in only two safety related factors and significant difference (p -value ≤ 0.05) was observed in stress recognition and good working conditions while an insignificant difference regarding teamwork, safety, job satisfaction, and perceived management was observed. Association of gender with patients' safety attitude has not been clearly understood and variable reports have been presented in different studies. Age though not studied as a predicting factor for safety attitude in healthcare but found to be 38.83 ± 9.62 years with a range of 25 to 57 years in this study. A study on perspective of safety culture among Turkish nurses reported a mean age of 32.68 ± 5.77 is less as compared in present study where physicians and pharmacists are also included [17-20]. There is great need to assess the culture of patients' safety in variety of organizations with classifications of healthcare categories (Primary, secondary and tertiary healthcare) among various hierarchies for better patients' safety. Further institutions are needed to be equipped appropriately with aims of providing safety to patients and achieving quality services. Training workshops should be arranged especially for nurses after regular intervals to refresh the previous knowledge and provision of advanced information regarding safety materials.

CONCLUSIONS

Patients' safety culture in healthcare system of Pakistan is not well evaluated nor ideally practiced. Few components of safety attitude questionnaire are adapted in excellence while other are practiced in average or below average. Improvements in patients' safety are necessary as in developing countries. Gender has not been supposed to be a pre-determined factor associated with patients' safety whereas private sector has been found to be a predictor and negatively associated with patients' safety. Age, ethnicity and category of healthcare staff may be potential factors

but desired more studies to explore properly.

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