



COMPARISON OF ATTITUDE TOWARDS PATIENT SAFETY AMONG HEALTH CARE PROVIDERS IN A TERTIARY CARE HOSPITAL FROM NORTH INDIA

Management

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ABSTRACT

Background: There is an increasing belief that an institution's ability to avoid patient harm will be realised when it engenders a culture of safety among its staff members. We aimed to assess and compare the attitude towards patient safety culture among healthcare providers.

Methodology: A prospective questionnaire study was carried out for a period of one year in inpatient area, ICU's, OT's and Emergency department. Doctors, nurses and technicians were the subjects of study. Agency of Healthcare research and quality (AHRQ) patient safety culture questionnaire was used as a study tool.

Results: In doctors group majority 77.5% (n=341) belonged to resident cadre among nurses majority 79.8% (n= 245) belonged to cadre of staff nurse 45.4% (n= 15) technical group respondents belonged to cadre of technician. Most of the participants 66.8% (n= 521) were in the age group of 20-40 years. Studying the area of work 44.7% (n=349) of the participants were found to be working in ward. Majority of the participants 97.3% (n= 759) had direct interaction with patients. 64.1% of the participants had the professional experience of < 10 years. Highest patient safety was graded by technicians with mean positive value of 2.85±1.121 and doctors reported significantly highest number of events with mean positive value of 1.32±.671.

Conclusion: Different positions, qualification of health care providers have different responses for different patient safety culture dimensions.

KEYWORDS

Healthcare providers, Patient safety culture, AHRQ

INTRODUCTION:

There is an increasing belief that an institution's ability to avoid patient harm will be realized when it engenders a culture of safety among its staff members.⁽¹⁾

The evidence for harm in the ambulatory setting is much less robust but is likely to be sizeable.^(2,3)

The Quality of healthcare in America committee of the Institute of Medicine concluded that it is not acceptable for patients to be harmed by the health care system that is supposed to offer healing and comfort—a system that promises, “First do no harm”. Helping to remedy the problem is the goal of “**To Err Is Human: Building a Safer Health System**”, the Institute of Medicine committee's first report.⁽⁴⁾

For decades, human errors in complex systems have been a topic of debate due to their consequences. For example, system failures in the aviation industry cause great publicity and are addressed very quickly because of the impact they have as they involve a large number of people and resources. In the healthcare sector, accidents can be deadly, but they do not attract as much attention as they affect⁽⁵⁾.

Efforts to assess safety culture are based on the organizational psychology perspective, which views safety culture as shared beliefs and practices that can be categorized, measured, and changed⁽⁶⁾.

Reason categorized a culture of safety into four components, which reflect his assertion that an informed culture is a **safe culture**⁽⁷⁾. These components identify the beliefs and practices present in an organization that is informed about risks and hazards and takes action to become safe. Fundamentally, a safe organization depends on the willingness of front-line workers to report their errors and near-misses; organizational practices support a **reporting culture**. This willingness of workers to report depends on their belief that management will support and reward reporting and that discipline occurs based on risk-taking⁽⁸⁾. Organizational practices support a **just culture**. The willingness of workers to report also depends on their belief that authority patterns relax when safety information is exchanged because those with authority respect the knowledge of front-line workers; organizational practices support a **flexible culture**. Ultimately, the willingness of workers to report depends on their belief that the organization will analyze reported information and then implement appropriate change; organizational practices support a **learning culture**. The interaction of these four components results in an informed, safe organization that is highly reliable. They recognized that the organizational beliefs and practices associated with these components of culture are assessed by the HSOPSC⁽⁹⁾.

MATERIAL & METHODS:

A prospective study was done for a period of 1 year in inpatient area, ICU's, OT's and Emergency department

Study Population: It includes doctors, nurses and technical staff working in the above selected areas were subjects of study.

Study Tool: AHRQ Hospital Survey Patient Safety Culture Questionnaire adapted from Agency of Healthcare research and Quality was used as a study tool⁽¹⁰⁾. Pilot study was carried out for a period of two weeks to validate the tool and later on it became the part of observations.

The demographic profile in the AHRQ Hospital Survey Patient Safety Culture Questionnaire included parameters like Age, Sex, Qualification, Designation, Area of work, Professional experience.

AHRQ Hospital survey patient safety culture questionnaire has 42 items similar items were clubbed together under headings of 12 dimensions⁽¹¹⁾:

Teamwork within departments, Organizational Learning - continuous improvement, Overall perception of safety, Non-punitive response to error, Staffing, Supervisor/Manager expectations and actions promoting patient safety, Communication Openness, Feedback and Communication about error, Frequency of events reported, Hospital management support for patient safety, Teamwork across hospital department, Hospital handoffs and transitions. Responses regarding various aspects of patient safety culture were graded on a five point LIKERT scale (Strongly disagree, disagree, neither, agree, strongly agree / Never, rarely, sometimes, most of the time, always). For each positively worded item, the percentage of positive responses were calculated i.e. the percentage of participants answering the question as strongly agree and agree or sometimes, always or most of the time. negatively worded items were reverse coded (**R**), so for all questions higher scores are more favourable.

The dimension Patient safety was graded as excellent, very good, acceptable, poor and falling.

The number of events reported were documented as per event reports in the past 12 months: no event reports, 1 to 2 event reports, 3 to 5 event reports, 6 to 10 event reports and 21 event reports/more.

The researcher visited the selected areas on daily basis and presented the questionnaire to the study population. The time period of 7 days had been given to each subject to return the questionnaire. Those study

subjects who did not return the questionnaire were excluded from the study. Incomplete replies (Forms which were kept partially blank) to questionnaires were also excluded from the study.

Statistical Analysis

All the statistical analysis was done by using SPSS software V23.

RESULTS:

Out of total 915 study subjects 780 participants responded to Agency of Healthcare research and Quality (AHRQ) adapted Hospital Survey patient safety culture questionnaire giving a response rate of 85.2%. It was observed that out of 780 participants majority 56.4% (n= 440) were doctors, 307 were nurses and 33 were technicians. In doctors group majority 77.5% (n=341) belonged to resident cadre followed by professors 11.3% (n=50), additional professor and assistant professor were similar (4.09%) while as 2.95% (n=13) belonged to cadre of associate professor. (Figure 1)

Among nurses group majority 79.8% (n= 245) belonged to cadre of staff nurse followed by nursing supervisor 10% (n= 31) and ward incharge 10%, n=31. (Figure 2)

45.4% (n= 15) technical group respondents belonged to cadre of technician followed by technologist 42.4% (n= 14) where as technical officer 12.1%, n= 4. (Figure 3)

Studying the age group of the participants it was found that most of the participants 66.8% (n= 521) were in the age group of 20-40 years followed by 32.8% (n= 256) in the age group of 41-60 years while as only 4% (n=3) were in the age group of >60 years. (Figure 4)

It was observed that gender wise majority 57.2% (n= 446) were males. (Figure 5)

Observations revealed that 48.1% (n= 375) of the respondents were graduates followed by 36.8% (n= 287) were postgraduates while as 15.1% (n=118) were post doctoral. (Figure 6)

Studying the area of work 44.7% (n=349) of the participants were found to be working in ward followed by 21.3% (n= 166) of them working in OT, 18.7% (n= 146) in ICU whereas 15.3% (n= 119) of the participants were working in emergency. (Figure 7)

It was found that majority of the participants 97.3% (n= 759) had direct interaction with patients. (Figure 8)

Observations revealed that 64.1% of the participants had the professional experience of < 10 yrs while as 5.5% of them had the professional experience of > 30yrs (table 1)

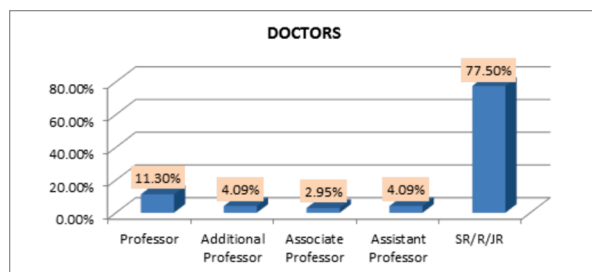


Figure 1: Showing different cadres of Doctors

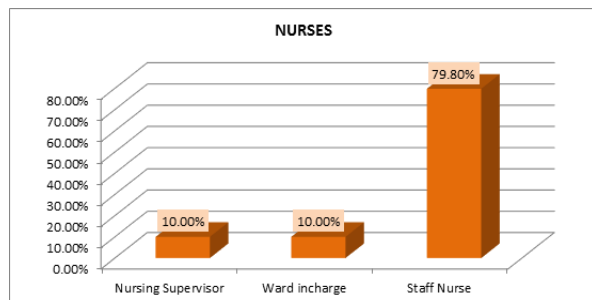


Figure 2: Different Cadres of Nurses

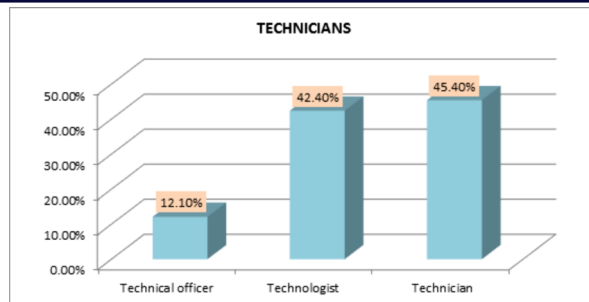


Figure 3: Showing different cadres of Technicians

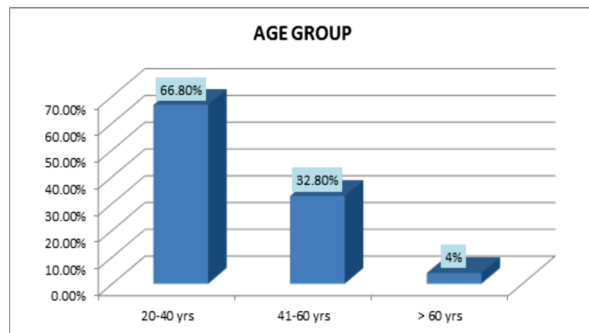


Figure 4: Age group of participants

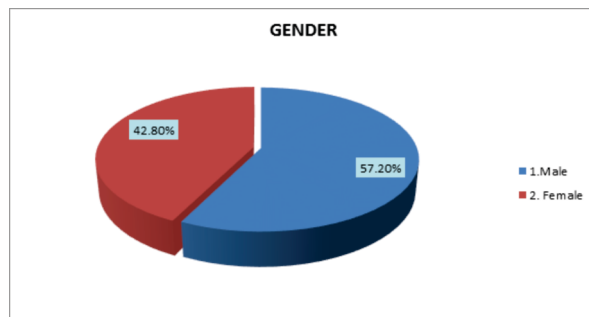


Figure 5: Gender of participants

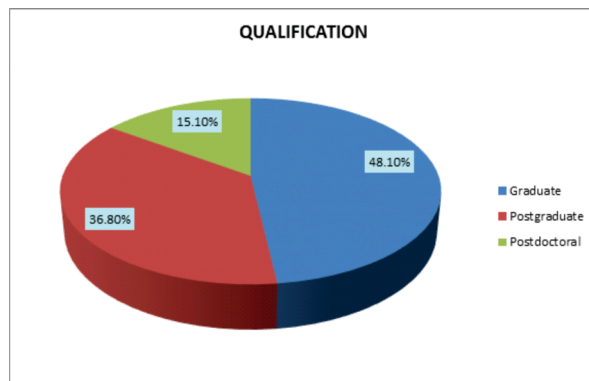


Figure 6: Qualification of participants

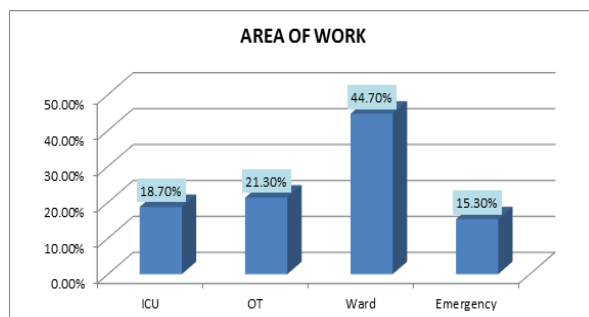


Figure 7: Area of work

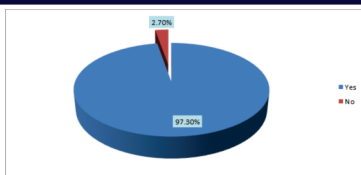


Figure 8: Direct interaction with patients

Table 1: Professional characteristics of participants

Characteristic	Variable	Frequency (n= 780)	Percentage (100%)
Professional Experience	1.<10 yrs	500	64.1%
	2.11-20 yrs	86	11.0%
	3.>21-30 yrs	151	19.4%
	4.> 30 yrs	43	5.5%

Table 2: Patient safety culture viz-a-viz subgroup among Doctors

Patient Safety Culture dimensions	Professor	Additional Professor	Associate Professor	Assistant Professor	SR/R/JR	P Value
	Mean $\pm$ SD	Mean $\pm$ SD	Mean $\pm$ SD	Mean $\pm$ S	Mean $\pm$ SD	
Teamwork within departments (AA1)	3.24 $\pm$ 1.021	3.22 $\pm$.943	3.38 $\pm$.650	3.22 $\pm$.943	3.04 $\pm$ 1.104	0.537
Organizational Learning - continuous improvement (AA2)	2.28 $\pm$.730	2.28 $\pm$ 1.018	2.69 $\pm$.630	2.06 $\pm$ 1.162	2.14 $\pm$.963	0.243
Overall perception of safety (AA3)	2.46 $\pm$.994	1.44 $\pm$ 1.294	2.15 $\pm$.987	1.78 $\pm$ 1.353	2.53 $\pm$ 1.050	0.000
Non-punitive response to error (AA4)	1.92 $\pm$ 1.192	1.72 $\pm$ 1.127	1.77 $\pm$.832	1.67 $\pm$.907	1.45 $\pm$ 1.046	0.034
Staffing (AA5)	1.86 $\pm$ 1.088	2.11 $\pm$ 1.132	1.38 $\pm$ 1.121	2.17 $\pm$.707	1.34 $\pm$.865	0.000
Supervisor/Manager expectations and actions promoting patient safety (B)	2.70 $\pm$ 1.460	2.83 $\pm$ 1.098	3.00 $\pm$ 1.080	2.61 $\pm$ 1.461	2.64 $\pm$ 1.233	0.835
Communication Openness (CC1)	2.06 $\pm$.712	1.39 $\pm$.916	1.85 $\pm$.801	1.28 $\pm$.826	1.86 $\pm$.777	0.001
Feedback and Communication about error(CC2)	2.50 $\pm$.763	2.39 $\pm$.698	2.15 $\pm$.689	2.00 $\pm$.907	2.08 $\pm$.840	0.010
Frequency of events reported (D)	2.24 $\pm$ 1.153	.67 $\pm$ 1.029	.31 $\pm$.630	.72 $\pm$ 1.179	1.87 $\pm$ 1.165	0.000
Hospital management support for patient safety (FF1)	2.04 $\pm$ 1.212	1.44 $\pm$ 1.247	1.38 $\pm$ 1.044	1.17 $\pm$ 1.505	2.03 $\pm$.918	0.000
Teamwork across hospital departments (FF2)	3.08 $\pm$ 1.175	2.06 $\pm$ 1.162	2.92 $\pm$ 1.038	2.28 $\pm$ 1.487	2.38 $\pm$ 1.263	0.002
Hospital handoffs and transitions (FF3)	2.02 $\pm$.892	1.50 $\pm$.985	2.08 $\pm$.641	1.22 $\pm$.808	1.67 $\pm$.839	0.002
Overall Mean	1.95	1.6	1.8	1.5	1.7	

Few of the patient safety culture dimensions scored significantly high among professors as compared to additional professors, associate professors, assistant professors and resident group. Non-punitive response to error scored mean positive value of 1.92 $\pm$ 1.192, Communication openness scored mean positive value of 2.06 $\pm$ 0.712, feedback and communication about error scored 2.50 $\pm$ 0.763, frequency of events reported scored mean positive response of 2.24 $\pm$ 1.153, hospital management support for patient safety scored

mean positive value of 2.04 $\pm$ 1.212 and teamwork across hospital departments scored mean positive value of 3.08 $\pm$ 1.175.

It was observed that overall patient safety culture dimensions scored high with mean positive value of 1.95 among professor group as compared to additional professors, associate professors, assistant professors and resident group. (Table 2)

Table 3: Patient safety culture viz-a-viz subgroup of Nurses

Patient Safety Culture dimensions	Nursing Supervisor	Ward In charge	Staff Nurse	P Value
	Mean $\pm$ SD	Mean $\pm$ SD	Mean $\pm$ SD	
Teamwork within departments (AA1)	3.42 $\pm$.765	3.35 $\pm$.798	2.98 $\pm$ 1.030	0.015
Organizational Learning - continuous improvement (AA2)	2.55 $\pm$.768	2.45 $\pm$.768	2.41 $\pm$.808	0.664
Overall perception of safety (AA3)	2.06 $\pm$ 1.124	2.29 $\pm$ 1.321	2.46 $\pm$.921	0.089
Non-punitive response to error (AA4)	1.06 $\pm$.964	1.39 $\pm$ 1.022	1.19 $\pm$ 1.020	0.446
Staffing (AA5)	.84 $\pm$.688	1.39 $\pm$.761	1.33 $\pm$.835	0.006
Supervisor/Manager expectations and actions promoting patient safety (B)	2.19 $\pm$.601	2.29 $\pm$.824	2.33 $\pm$.775	0.614
Communication Openness (CC1)	1.65 $\pm$.798	1.90 $\pm$.746	1.93 $\pm$.671	0.096
Feedback and Communication about error(CC2)	1.97 $\pm$ 1.329	2.48 $\pm$.724	2.41 $\pm$.771	0.017
Frequency of events reported (D)	2.00 $\pm$.816	2.45 $\pm$.850	2.16 $\pm$.922	0.131
Hospital management support for patient safety (FF1)	2.16 $\pm$.934	2.26 $\pm$.729	1.95 $\pm$.997	0.151
Teamwork across hospital departments (FF2)	2.84 $\pm$ 1.068	3.06 $\pm$ 1.124	3.07 $\pm$ 1.063	0.525
Hospital handoffs and transitions (FF3)	2.71 $\pm$.902	1.94 $\pm$.854	2.33 $\pm$.959	0.006
Overall Mean	1.78	1.9	1.83	

It was observed that patient safety culture dimensions Teamwork within departments and Hospital handoffs and transitions scored significantly high among nursing supervisors as compared to ward incharges and staff nurses with mean positive response of 3.42 $\pm$.765 and 2.71 $\pm$.902 respectively. (Table 3)

ward incharges as compared to nursing supervisors and staff nurses: Non-punitive response to error scored the mean positive response of 1.39 $\pm$ 1.022, staffing and Feedback and Communication about error scored the mean positive value of 1.39 $\pm$.761 and 2.48 $\pm$.724 respectively.

Also from the (table 3) it was evaluated that few dimensions of patient safety culture scored significantly high mean positive response among

It is clear from the (Table3) that overall positive response score was high among ward incharges as compared to nursing supervisors and staff nurses who showed the mean positive response of 1.9.

Table 4: Patient safety culture viz-a-viz subgroup of Technicians

Patient Safety Culture dimensions	Technical Officer	Technologist	Technicians	P Value
	Mean $\pm$ SD	Mean $\pm$ SD	Mean $\pm$ SD	
Teamwork within departments (AA1)	3.75 $\pm$.500	3.29 $\pm$.726	3.40 $\pm$.910	0.597
Organizational Learning - continuous improvement (AA2)	2.75 $\pm$.500	2.14 $\pm$.864	2.47 $\pm$.640	0.279
Overall perception of safety (AA3)	2.50 $\pm$ 1.000	2.07 $\pm$.616	2.47 $\pm$.834	0.342
Non-punitive response to error (AA4)	1.00 $\pm$ 1.155	.71 $\pm$ 1.069	.93 $\pm$.961	0.809
Staffing (AA5)	1.00 $\pm$.816	1.29 $\pm$.726	1.33 $\pm$.617	0.690
Supervisor/Manager expectations and actions promoting patient safety (B)	2.25 $\pm$ 1.258	1.93 $\pm$ 1.207	2.67 $\pm$.617	0.147
Communication Openness (CC1)	1.75 $\pm$.500	1.57 $\pm$.514	2.07 $\pm$.704	0.106
Feedback and Communication about error(CC2)	2.00 $\pm$ 1.414	2.07 $\pm$.997	2.53 $\pm$.640	0.332
Frequency of events reported (D)	2.25 $\pm$.957	.64 $\pm$ 1.151	1.87 $\pm$.990	0.005
Hospital management support for patient safety (FF1)	2.50 $\pm$.577	.200 $\pm$.679	2.27 $\pm$ 1.100	0.549

Teamwork across hospital departments (FF2)	2.50±1.732	3.00±.961	3.40±1.404	0.417
Hospital handoffs and transitions (FF3)	2.00±.816	2.14±.864	2.47±.640	0.400
Overall Mean	1.81	1.69	1.94	

It was found that following patient safety culture dimensions scored high among technical officer as compared to technologist and technicians: teamwork within departments, organizational learning-continuous improvement, overall perception of safety, non-punitive response to error and hospital management support for patient safety scored mean positive values of 3.75±.500, 2.75±.500, 2.50±1.000, 1.00±1.155, 2.50±.577 respectively however patient safety culture dimension frequency of events reported scored significantly high among technical officer with the mean value of 2.25±.957 (Table 4)

Also from the (Table 4) it was interpreted that overall patient safety culture dimensions scored high with the mean positive value of 1.94 among technicians as compared to technical officer and technologist.

Table 5: Patient safety grade and number of events reported vis-a-vis Study groups

Patient Safety Culture dimensions	Doctors Mean ±SD	Nurses Mean± SD	Technicians Mean ±SD	P Value
Patient safety grade	2.52±.742	2.07±.770	2.85±1.121	0.000
NOER	1.32±.671	1.10±.387	1.00±.000	0.000

Highest patient safety was graded by technicians with mean positive value of 2.85±1.121 and it was significant ($p=0.000$). doctors reported significantly highest number of events with mean positive value of 1.32±.671 (Table 5)

DISCUSSION:

In recent years, there has been growing recognition within healthcare of the importance of transforming organizational culture to improve patient safety. Majority health care policy documents have openly acknowledged that there is a need to move from the current "blame and shame" culture that prevents acknowledgement of errors and therefore obstructs any possibility of learning.⁽¹²⁾ In seeking to improve safety, one of the most frustrating aspects for patients and professionals alike is the apparent failure of health- care systems to learn from their mistakes. Too often neither health- care providers nor health –care organizations advise others when a mishap occurs, nor do they share what they have learned when an investigation has been carried out. As a consequence, the same mistakes occur repeatedly in many settings and patients continue to be harmed by preventable errors.⁽¹³⁾

In the present study it was observed that out of 780 participants majority (56.4%) were doctors. 44.7% of the participants had been working in ward. Majority (64.1%) of the participants had the professional experience of < 10 yrs. 97.3% of the participants had direct interaction with patients. In contrast to this, study carried out by Moghri J et al showed that nurses comprised more than half of the respondents (53.6%). The majority of study participants were working in medicine and surgery units (25.8 and 22.2% respectively). 48.4% of respondents reported having more than 6 years of experience at their current hospital and the majority of the study participants had direct contact with patients in doing their tasks (81.8%).⁽¹⁴⁾

In the present study it was observed that following patient safety culture dimensions scored significantly high among nurses as compared to doctors and technicians : organizational learning -continuous improvement scored mean positive value of 2.43±.799, communication openness scored mean positive value of 1.90±.695, feedback and communication about error scored mean positive of 2.37±.847, frequency of events reported scored mean positive response of 2.18±.908, teamwork across hospital departments scored mean positive value of 3.05±1.069 and hospital handoffs and transitions scored mean positive response of 2.33±.957. Contrary to our findings study carried out by Bodur S et al found that comparison of scores for the dimensions as safety culture revealed lower results for nurses compared with those of GP's and other healthcare staff in terms of 'communication openness' ($p < 0.01$) and 'feedback and communication about error' ($p < 0.001$).⁽¹⁵⁾

Current study revealed significant difference was observed between the study groups with regard to Non-punitive response to error, organizational learning –continuous improvement, staffing, supervisor expectations and action promoting patient safety, feedback and communication about error, frequency of events reported,

teamwork across hospital departments and hospital handoffs and transitions. Study carried out by Laal et al showed significant difference was observed between the study groups with regard to scores of manager expectations and actions about safety development, communication openness, communication and reaction to error and staff affairs.⁽¹⁶⁾

It was observed that some of the patient safety culture dimensions scored significantly high among professors as compared to additional professors, associate professors, assistant professors and resident group. Non-punitive response to error scored mean positive value of 1.92±1.192, Communication openness scored mean positive value of 2.06±.712, feedback and communication about error scored mean positive value of 2.50±.763, frequency of events reported scored positive response of 2.24±1.153, hospital management support for patient safety scored mean positive value of 2.04 ± 1.212 and teamwork across hospital departments scored mean positive value of 3.08± 1.175. In contrast to the study carried out by Nie Y et al it was observed that positive response rate of health care professionals with a high qualification level on five dimensions (Teamwork within units, Management support for patient safety, communication openness, Teamwork across units and Non-punitive response to errors) was lower than that of those who have low qualification levels.⁽¹⁷⁾

CONCLUSION:

The study in conclusion established that attitude of various respondents towards patient safety varies from cadre to cadre and also profession to profession. Doctors reported significantly highest number of events as compared to nurses and technicians.

Ethical Consideration:

An ethical approval was obtained from institutional ethical committee.

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