International Journal of Community Medicine and Public Health
Goyal RC et al. Int J Community Med Public Health. 2018 Jul;5(7):2791-2796
http://www.ijcmph.com
pISSN 2394-6032 | eISSN 2394-6040

DOI: http://dx.doi.org/10.18203/2394-6040.ijcmph20182441

Original Research Article

Assessment of patient safety culture in a rural tertiary health care hospital of Central India

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Received: 23 May 2018
Revised: 29 May 2018
Accepted: 30 May 2018

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ABSTRACT

Background: A safety culture assessment provides an organization with a basic understanding of the safety related perceptions and attitudes of its managers and staff. While patient safety has been a major area of research in industrialized nations for over a decade, data on the root causes of unsafe care in low-income settings is sparse. The objective of the study was to assess the patient safety culture in a rural tertiary health care hospital situated in Central India.
Methods: A survey conducted during year 2015, in a rural tertiary health care teaching hospital, Maharashtra (India). The study participants were the 156 hospital staff working in various clinical work areas. The agency for healthcare research and quality hospital survey on patient safety culture, a validated instrument is used as an assessment tool.
Results: Total 144 participants included in the study, 75 (52%) were females and rest were males 48%. Out of these 111 (77), maximum number of staff (57.05%) was belonging to different intensive care units. 57% of participants had worked in the hospital for 1 to 5 years. For the unit level safety culture dimension, the maximum composite score of positive responses was obtained for "Organizational learning- continuous improvement" (67%) followed by "Hospital management support for patient safety" (65%). On the other hand only 48% survey participants gave an affirmative opinion with respect to "Feedback and communication about error". For the hospital wide dimensions response rate was obtained as 62% for the "Teamwork across Hospital Units" while for the dimension "Hospital Handoffs & Transitions", the score came out as 55%.
Conclusions: The perception of patient safety and standards of patient safety were fairly good in the present rural tertiary health care hospital, but there is an ample of prospect in improvement with regard to event reporting, feedback and non punitive error.

Keywords: Assessment, Patient safety culture, Hospital survey

INTRODUCTION

'Patient safety' is a crucial element of health care quality. As health care organizations continually strive to improve, there is growing recognition of the importance of establishing a patient safety culture. Achieving this requires an understanding of the values, beliefs, and norms about what is important in an organization and what attitudes and behaviours related to patient safety are supported, rewarded, and expected.[1] Organizations with a positive safety culture are characterized by communications founded on mutual trust, by shared perceptions of the importance of safety and by confidence in the efficacy of preventive measures.[2]

Increasing emphasis on patient safety has led healthcare experts to discover that the most patient safety errors are

due to issues with systems rather than "bad" individuals, and that some systems are more prone to errors than others. In an attempt to reduce and prevent medical errors, the health care industry has begun to focus on developing predictive measures of safety culture such as management and leadership behaviour, effective team functioning, communication, and employee perceptions of safety.[3]

Growing interest in patient safety culture has been accompanied by the need for assessment tools focused on the cultural aspects of patient safety improvement efforts. A safety culture assessment provides an organization with a basic understanding of the safety related perceptions and attitudes of its managers and staff. Safety culture measures can be used as diagnostic tools to identify areas for improvement.[4]

While patient safety has been a major area of research in industrialized nations for over a decade, data on the root causes of unsafe care in low-income settings is sparse.[5] In India, public health system is chronically underfunded characterized by extremely high volumes of patients and a dearth of educated health workers. Very little evidence exists, however, about the perceptions of Indian health care providers regarding interventions to improve patient safety there.[6]

A tertiary health care hospital represents the higher level of health care delivery system wherein the turnover of patient is huge as well as the health staff has to deal with patients with advanced disease and complications referred from the periphery. Resultantly, there is more incidence of mortality. The patients and the relatives also have the risk of morbidity due to nosocomial infections. Thus a sound safety climate is needed to prevent adverse outcomes.

In this context, in the present study, a survey is conducted with the objective to assess the patient safety culture in a rural tertiary health care hospital situated in Central India.

METHODS

The present study is a hospital based survey conducted during August to November 2015 in a tertiary health care teaching hospital, of Wardha district (Maharashtra) India. The hospital has the bed strength of 1300 and caters mainly to the rural population, especially of low and middle income group with speciality and super speciality health care services.

The survey undertaken was paper based considering the non feasibility of web based survey in the current set up. The study participants were the hospital staff which included the doctors, nursing staff and the attendants working in various clinical work areas/units including different intensive care units too, to ensure that an adequate variety of job classifications and hospital units would be represented. The work areas/units like Medicine, Paediatrics, Surgery, respective Intensive care units, Cath lab, etc. wherein the issue of patient safety, occurrence of adverse outcome is of great concern, were taken into consideration.

After receiving approval from the institutional ethical committee, a total of 200 hospital staff was initially included in the study using the convenience sampling method. But the duly complete proforma were obtained from 156 staff which constituted the final sample/study participants of the study.

The Agency for Healthcare Research and Quality (AHRQ) Hospital Survey on Patient Safety Culture (HSOPSC), a validated instrument is used as an assessment tool. It has 10 safety culture dimensions and 4 outcome measures listed as follows:[7]

Table 1: Safety culture dimensions and reliabilities.

I. Safety culture dimensions (Unit level)
1) Supervisor/manager expectations & actions promoting safety
2) Organizational learning—continuous improvement
3) Teamwork within hospital units
4) Communication openness
5) Feedback and communication about error
6) Non punitive response to error
7) Staffing
8) Hospital management support for patient safety
II. Safety culture dimensions (Hospital-wide)
1) Teamwork across hospital units
2) Hospital handoffs & transitions
III. Outcome measures
1) Frequency of event reporting
2) Overall perceptions of safety
3) Patient safety grade
4) Number of events reported

This survey is primarily useful for assessing the safety culture of a hospital as a whole, or for specific units within hospitals, and not for assessing individual patient safety perceptions or skills. The 10 safety culture dimensions measure the perception of the respondent with respect to the safety of patients in their patient care unit (8 dimensions) and also their overall view of the safety of patients in the hospital in its entirety (2 dimensions). Each dimension has 3 to 5 questions and uses a 5-point Likert scale of agreement ("Strongly disagree" to "Strongly agree") or frequency ("Never" to "Always").

The outcome measures use single-item responses about the frequency of event reporting, total number of events reported, overall perception of patient safety and patient safety grade. Previous and current analyses have shown that all 10 dimensions had acceptable levels of internal

consistency (Cronbach's alpha=0.63 to 0.84 and 0.31 to 0.83). Data analysis was done using the scoring methods as given in the guidelines for computing patient safety dimensions, for the HSOPSC.[7]

RESULTS

A total of 200 survey proforma were administered to the hospital staff, while by the time the data set was compiled, 156 duly filled and complete responses were received. This resulted in a 78% overall response rate. Maximum number of staff i.e. 89 out of 156 (57.05%) was belonging to different intensive care units. Majority (57%) of participants had worked in the hospital for 1 to 5 years, and about 63% staff had worked in their speciality for 1 to 5 years.

Table 2: Background information of the survey participants.

Sr. No.	Variables	No (n=156)	Percentage (%)
1	**Hospital staff category**		
	Doctors	35	22.44
	Nurses	99	63.46
	Attendants	22	14.10
2	**Current departmental work area/unit tenure (years)**		
	<1	37	23.72
	1-5	88	56.41
	6-10	24	15.38
	11-15	06	03.85
	16-20	01	00.64
	>21	00	00.00
3	**Total departmental (hospital) tenure (years)**		
	<1	26	16.67
	1-5	90	57.69
	6-10	27	17.31
	11-15	09	05.77
	16-20	04	02.56
	>21	00	00.00
4	**Tenure in current specialty/profession**		
	<1	33	21.15
	1-5	99	63.47
	6-10	13	08.33
	11-15	07	04.49
	16-20	02	01.28
	>21	02	01.28
5	**Working hours per week**		
	<20	07	04.49
	20-39	21	13.46
	40-59	102	65.38
	60-79	26	16.67

The background information of all the survey participants is as shown in Table 2.

Safety culture dimensions

On analysing the unit level safety culture dimension, the maximum composite score of positive responses was obtained for "Organizational learning- continuous improvement" (67%) followed by "Hospital management support for patient safety" (65%). On the other hand only 48% survey participants gave an affirmative opinion with respect to "Feedback and communication about error". (Table 3).

For the hospital wide dimensions, the composite positive response rate was obtained as 62% for the "Teamwork across Hospital Units" while for the dimension "Hospital Handoffs & Transitions", the score came out as 55% (Table 4).

Comparison of composite response rate among staff of intensive care units (emergency care) and other departments revealed no significant difference for most

of the patient safety culture dimensions except for 'Feedback and Communication About Error', 'Teamwork Across Hospital Units' and 'Hospital Handoffs & Transitions' ($p<0.05$) (Table 5).

Table 3: Perception of hospital safety culture dimensions in the unit.

Sr. No	Safety culture dimensions in the unit	Composite positive response rate (%)
1	Supervisor/ manager expectations and actions promoting safety	57.62
2	Organizational learning- continuous improvement	67.17
3	Team work within hospital units	59.43
4	Communication openness	53.67
5	Feedback and communication about error	48.83
6	Non punitive response to error	54.30
7	Staffing	62.17
8	Hospital management support for patient safety	65.35

Table 4: Perception of hospital safety culture dimensions (Hospital wide).

Sr. No	Safety culture dimensions (hospital wide)	Composite positive response rate (%)
1	Teamwork Across Hospital Units	62.01
2	Hospital Handoffs & Transitions	55.76

Table 5: Comparison of composite response rate among staff of intensive care units (emergency care) and other departments.

Sr. No	Safety culture dimensions	Composite positive response rate (%)		P value
		Staff working in different Intensive care unit (n=89)	Staff working in other dept/units (n=67)	
1	Supervisor/ manager expectations and actions promoting safety	61.23	54.01	NS
2	Organizational learning-continuous improvement	69.03	65.31	NS
3	Team work within hospital units	60.73	58.13	NS
4	Communication openness	52.27	55.07	NS
5	Feedback and communication about error	57.79	40.07	S
6	Non punitive response to error	49.38	59.22	NS
7	Staffing	59.81	64.53	NS
8	Hospital management support for patient safety	68.75	61.95	NS
9	Teamwork across hospital units	70.69	53.33	S
10	Hospital handoffs & transitions	65.03	46.49	S

Outcome measures

With regard to 'Frequency of event reporting', when the participants were asked the question as "When a mistake is made, but is caught and corrected before affecting the patient, how often is this reported", majority i.e. 110 (67%) marked the option as "most of the time". On the other hand, when asked another question "When a mistake is made, but has no potential to harm the patient, how often is this reported", maximum responses 114 (73.07%) were in favour of option "always". Again for the last question regarding "reporting of event/mistake that could harm the patient, but does not," highest no of responses 123 (78%) were for "always" option.

A positive response rate of 67% was obtained in overall perception of patient safety. The overall grade of patient safety ranged from 'Excellent' to 'poor' though a maximum number of responses were in favour of very good & acceptable (Figure 1).

However, only 15% of participants reported the 'events' with regard to patient safety in the last twelve months while majority i.e. 133 (85%) either didn't come across or report any event in the last one year.

Table 6: Outcome measures of patient safety culture survey.

Sr. No	Components	Composite positive response rate (%)
1	Overall perception of safety	67.13
2	Number of events reported in the past 12 months	No. () (n=156)
	No event	133 (85.25)
	1 to 2	18 (11.53)
	3 to 5	05 (3.20)
	6 to 10	00 (00.00)
	11 to 20	00 (00.00)
	>21	00 (00.00)

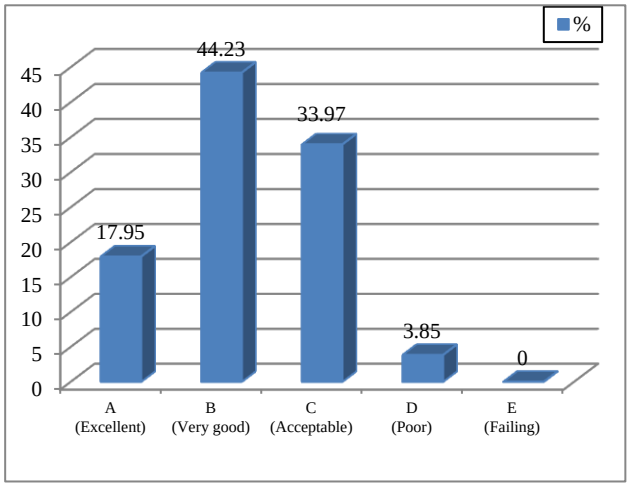

Figure 1: Bar diagram showing patient safety grade of work area/units.

DISCUSSION

'Patient safety' is defined as the avoidance and prevention of patient injuries or adverse events resulting from the process of health care delivery.[1] The Institute of medicine stated that healthcare organizations should develop and promote a safety culture where adverse events are reported without people being blamed, give scope of improvement to doctors by learning from their mistakes and prevent further errors.[3] Getting the 'right patient safety culture' is an important component in improving patient safety which can be assessed by various surveys like safety attitude questionnaire (SAQ), HSOPS questionnaire which have similar reliability, predictive validity. HSOPS safety culture dimensions were the best predictors of frequency of event reporting and overall perception of patient safety while SAQ and HSOPS dimensions both predicted patient safety grade.[8]

In the present study , the composite frequency of the positive responses for the various patient safety dimensions was above 50%, but still there is reasonable scope for improvement in almost all the domains like evidence based practices, communication, learning and patient cantered practices, leadership, teamwork,...etc. Though the composite score for 'Teamwork across the hospital unit'" came out as 62%, still with regard to 'Hospital handoff & transitions', only 55% of the hospital staff were in agreement of smooth and hassle free working during patient transfer & exchange of information between the units. Similarly in a study by William et al out of 328 case descriptions, 87 reports were of blurred responsibility and 67 reports were of inhibited communication, leading to 31% adverse patient consequences.[9] In order to overcome the difficulties during transfer of patients across the units/work areas, there is need of use of standardized handoff protocols.

Even for the dimension 'Feedback and Communication about Error' the score is not up to the mark (48%), which is mainly due to the common fact that the feedback giving is seldom practiced by the staff or even if the feedback is given it is provided unwillingly, in an ineffective and/or inappropriate manner. It leads the undesirable behaviour uncorrected or may reinforce wrong and unacceptable behavior of the staff.

Comparison of response rate among staff of intensive care units (emergency care) and other departments revealed no significant difference for most of the patient safety culture dimensions. This may indicate that the patient safety culture is uniform throughout the hospital. The better score for some of the dimensions ('feedback and communication about error', 'teamwork across hospital units' and 'hospital handoffs & transitions') in the units providing emergency care may be because of the nature of their work and constant need to provide time urgent critical care throughout the year.

Identification and mandatory reporting of events/ incidents is an important strategy to improve patient safety.[10] An 'Event' is defined as any type of error, mistake, incident, accident or deviation, regardless of what whether or not it results in patient harm[1.] Event reporting needs to be improved and standardized as in the present study, quite a high proportion of survey participants didn't report any event in the last twelve months which might be because of less occurrence of adverse outcomes or reluctance on the part of staff to report any event they came across.

About 60% of the staff in our study had an affirmative response to the fact that their mistakes were held against them and that they were held accountable for adverse outcomes. Instead of a punitive response, systems must assure that all staff who reports the adverse events are supported and acknowledged for their contribution and are continually encouraged by the knowledge that their reporting has led to safer conditions.[11] There should be a

correct balance between individual responsibility and punishment for an unintended human error.[12]

CONCLUSION

Survey findings, showed that the perception of patient safety and standards of patient safety were fairly good in the present rural tertiary health care hospital, but there is an ample of prospect in improvement with respect to event reporting, feedback and non punitive error.

Limitation

Although surveying all hospital staff is most desirable, but in the present study considering the constraints with regard to resources, time, a sample of the varied hospital staff is included in the study.

Recommendation

Improving patient safety is integral to enhanced safety in medical care. Training programs and simulation exercises on patient safety culture must be periodically organised and a non punitive approach to adverse events should be practised.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the Institutional Ethics Committee

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Cite this article as: Goyal RC, Choudhari S. Assessment of patient safety culture in a rural tertiary health care hospital of Central India. Int J Community Med Public Health 2018;5:2791-6.