Measuring Safety Culture And Setting Priorities For Action At An Iranian Hospital

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Abstract: *Objective:* the objective of the study is to measure safety culture in an Iranian hospital. *Method:* The present descriptive study was carried out through a cross-sectional method during spring of 2008. Standard AHRQ questionnaire on patient safety culture survey was applied. Study population comprised of the hospital nursing staff. The survey was carried out on 239 nursing staff. *Results:* Supervisor expectations and actions promoting patient safety and teamwork within units were highest scored dimensions of hospital regarding patient safety. Among hospital weaknesses regarding patient safety, no punitive response to error and overall patient safety grade were most brilliant. *Conclusion:* The hospital can establish a safe environment by trying to overcome its weaknesses. Creating an events reporting system and encouraging personnel to report probable errors and events and taking non punitive actions is suggested to treat events.
Keywords: Patient safety- safety culture- patient safety culture.

Introduction

A key objective of any health system is to ensure the safety of its patients. However, health care organizations are complex multi-professional entities with numerous and conflicting demands for scarce resources and it is not always clear how to establish robust patient safety systems across a range of departments and technical procedures. As such, patient safety has attracted much attention from policy makers, practitioners and academics. Two policy documents that have been particularly influential in this respect: *To Err is Human* published by the Institute of Medicine in the United States (which estimated that as many as 100,000 deaths occur each year in the United States as a result of medical error) and - *An organization With a Memory* – a policy document published by the UK Department of Health. Both of these reports describe how organizational culture can influence the attitudes and behavior of individual employees and highlight the importance of a systems based approach to facilitate the development of an organizational culture that promotes safe practice in health organizations [1]. Organizational culture' can be thought of as the shared beliefs, norms and values of the people that work in an organization. It is believed that organizational culture can influence actions and patterns of communication [2] Culture creates a sense of identity and establishes a vital link between an organization's members and its mission, and is considered the strongest determinant of the success or failure of an organization. It strengthens commitment to organizational goals and gives direction by clarifying and reinforcing standards of behavior [3-4]. Safety culture as one of subdivisions of organizational culture was

mentioned for the first time in Chernobyl report in 1986[5].Following this report high hazard industries such as aviation and nuclear set up to acknowledge, define and to measure safety culture as a method to decrease event occurrence probability [6]. These high hazard industries pay considerable attention to assessing safety, historically their safety measures have been based on retrospective data of employee fatalities and injuries. Recently driven by the awareness that organizational, managerial and human factors rather than simply technical failures are prime causes of accidents, these industries have focused on predictive measures of safety [7]. Because the healthcare industry involves high risk for morbidity and mortality, it is considered to be a high hazard industry. Institute of Medicine recommended healthcare organizations should work to enhance their patient safety culture [8]. Safety culture refers to common attitudes, ideas, values and assumptions which affect individuals perception and actions regarding safety issues [9]. Hence, a "safety" culture is one that integrates the Hippocratic maxim of "first do no harm" into the very fiber of its identity, infuses it into the norms and operations of an entire organization, and elevates it to the level of a top priority mission. This mission is enshrined in formal corporate statements and visibly put before its members as a guiding principle that governs the work of an organization and is applied to its day-to-day practices. A safety culture is what emerges as a result of a concerted organizational effort to move all cultural elements towards the goal of safety, including an organization's members, its systems, and work activities [4]. Patient safety is an important factor in healthcare quality, with increasing effort of healthcare organizations in quality continuous improvement, the importance of creating safety culture has been increasingly acknowledged [10]. Achieving safety culture requires understanding values, ideas and norms about important factors of an organization and also attitudes and behaviors which are important regarding patient safety culture [11]. An organization safety culture is a product of values, attitudes, perceptions, competencies and individual and group behavior patterns which determines the degree of commitment and safety management style of an organization [9]. Although the debate over the definition of safety culture has not reached unanimous agreement, a similar term "safety climate" has been used frequently in the literature and has added to confusion [12]. From the time the term was first highlighted by Zohar in 1980, the literature has not presented a generally accepted definition of safety climate either [13]. In fact, some definitions of safety climate are most identical to definitions of safety culture. However, based on some definitions safety climate differ from safety culture:

- Safety climate is a psychological phenomenon which is usually defined as the perception of the state of safety at a particular time.
- Safety climate is closely concerned with intangible issues such as situational and environmental factors.
- Safety climate is a temporal phenomenon, a snap shot of safety culture, relatively unstable and subject to change on the other hand safety culture is an enduring characteristic of an organization that is reflected in its consistent way of dealing with critical safety issues [12].

An organization with positive safety culture is characterized with trustful communications, joint perception about the importance of safety and a firm belief on the efficiency of predictive means [10]. Having such a culture is identified as a key element in improving safety [14] other dominant characteristics of organization with positive safety culture are their perception of safety importance and their commitment to safety as an important organizational priority [11,15-16]. An organization that successfully develops a safety culture can expect to realize immediate and tangible results in reducing workplace accidents and their associated costs, including decreased productivity, employee morale, and increased hiring and training costs [17]. Creating such a culture in a professional context is an important challenge for hospital managers. It necessitates a clear view of aspects that need improvement and a great commitment at the top levels of the organization [18].

Objective: Following a council of Europe recommendation, the first safety culture development stage is to define the organizations existing safety culture, in fact the real work (setting priorities for action, making changes aimed at improving health care services delivery and measuring the effect on patient safety) begins after communicating survey results to staff and managers[1].Furthermore, many experts agree that any safety focused initiatives should be preceded by culture change in order to be successful[1;10]. Consequently, this study reports the result of a patient safety culture measurement in an Iranian teaching hospital.

Materials and Methods

Setting: Present descriptive study was carried out cross-sectional in spring of 2008 in Firouzgar hospital, one of main teaching hospitals affiliated with Iran's university of medical sciences. *Population:* Nursing staff of the hospital comprised the study population. We decided to only include the nursing staff because of these reasons:

- Most of physicians were unwilling to participate in the study saying they are too busy to respond the questionnaire.
- Since this study and also the safety culture was the first of this type, other staff could not well communicate with the question, as a result the research team decided to exclude other staff and only study the nursing staff as the main group with direct contact with patients

Questionnaire: Several instruments are available to assess patient safety culture/ climate [10;19-26] among them, we applied the hospital survey on patient safety culture since a manual is attached with it at the website(www.ahrq.gov) which facilitated conducting and analyzing the survey.

We translated HSOPS into Persian and a revalidation of the translation was done with the data from 30 nurses, who were excluded from the study. We used validation strategy similar to what was used at original study. As a result of validation strategy we eliminated item A1 in order to improve "Teamwork within hospital units" dimension. *Distribution:* The questionnaires were distributed to all remaining 281 nursing staff of the hospital (30 were excluded after validation).Of 281 distributed questionnaires, 239 were filled completely with a response rate of 0.85 percent. This relatively high response rate achieved because of these actions:

- Hospital management commitment and support of study
- Reminders after distribution

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Confidentiality: Confidentiality was guaranteed through anonymous questionnaires
Analysis: The same exclusion criteria used in the original questionnaire were applied. Incomplete Surveys were removed prior to analysis. Each dimension included three or four items with an answer scale from 1 to 5. The exclusion criteria were:
- No entire section completed;
- Fewer than half the items answered; and
- All items answered the same.

Percentages were calculated on the number of respondents for the specific question or dimension. Answers 1 and 2 were considered negative towards patient safety, 3 was considered neutral and answer 4 and 5 were considered positive towards patient safety. A number of questions were negatively worded to avoid response set. These answers were reversed prior to recoding into positive, neutral or negative. The dimensional scores were expressed as the percentage of positive answers towards patient safety within each dimension. Dimensions acquired at least 75% positive scores considered as strength, those between 50-75 percent considered neutral and dimension with less than 50% positive scores labeled as weakness.

Limitations:
- One of the main limitations of HSOPS is its inability to explore the relationship between safety climate scores and patient outcomes. This was the case for the present study too, although we did not intend to explore such relationship.
- Since lots of questionnaire surveys are performed in teaching hospitals and usually no feedback is given to staffs who participate in the study, the staff is unwilling to participate in such studies. To overcome this limitation, the researchers explained the study for staff and also adjust data collection process according to staff desire, as a result this increased data collection phase. Also a report of the study was sent to the hospital.

Results

A total of 239 individuals (163 female) met our response criteria. Overall 42 questionnaires were excluded according to predefined criteria. The population characteristics are shown in table 1. At the time of survey 155 of participants (65%) had been working in the hospital more than five years, 65 individuals (27%) between 1-5 years and 19 (8%) were working less than one year. At unit level 122 (51%) were working more than 5 years, 84 (35%) between one to five years and 33 (14%) had been working for less than one year. The dimensional positive culture scores in the hospital are illustrated and compared with AHRQ benchmark [27] in table 2.

Table 1: Population characteristics

Professional experience	Frequency	Percent	Working time in hospital	Frequency	Percent
Less than one year	21	9%	Less than 20 hours per week	26	11%
1-5 years	70	29%	20-39 hours per week	80	33%
5 years or more	148	62%	40 hours or more per week	133	56%
Total	239	100%	Total	239	100

Table 2: Positive culture percents at studied hospital compared with AHRQ*
Benchmark

Dimension	AHRQ benchmark	Studied hospital	Dimension status
Supervisor/manager expectations & actions promoting patient safety	71	70	neutral
Organizational learning – continuous improvement	71	66.9	neutral
Teamwork within units	74	71.4	neutral
Communication openness	61	60	neutral
Feedback & communications about error	52	64.8	neutral
Non punitive response to error	43	22.8	Weakness
Staffing	50	38.1	Weakness
Hospital management support	60	32.2	Weakness
Teamwork across hospital units	53	43.8	Weakness
Hospital handoffs & transitions	48	54.2	neutral
Overall perceptions of safety	56	59.5	neutral
Frequency of events reported	52	50.17	neutral

* *Source:* AHRQ Benchmark, Sorra JS, Nieva VF. Hospital Survey on Patient Safety Culture. (Prepared by Westat, under Contract No. 290-96-0004). AHRQ Publication No. 04-0041. Rockville, MD: Agency for Healthcare Research and Quality. September 2004.

The scores were considered low to average the lowest scores were (those viewed negatively) were found on these dimensions:
• Non – punitive response to error (overall score 22.8 percent).
• Hospital management support for patients safety (overall score: 32.2 percent)
• Staffing (38.1 percent)
• Teamwork across hospital units (overall score 43.2 percent)
• The dimension "teamwork within hospital units" received the highest positive score (71.4 percent). Other highest scores included:
• supervisor/ manager expectations and actions (70 percent)
• Organizational learning- continuous improvement (66.9 percent)
• Feedback and communication about error (64.8 percent).

Discussion

Our study demonstrated that positive patient safety culture was low to average, ranging from 22.8 percent for non-punitive response to error to 71.4 percent for teamwork within hospital units which is similar to Tupper [28] and also Helling's findings[18] who found out this dimension to have highest score. This implies a good atmosphere within hospital units which unfortunately has not been extended across hospital. While, an atmosphere in which healthcare workers can report actual or

potential errors, events and hazards without fear of reprisal is the hallmark of a non-punitive environment and is consistent with the open communication necessary for a culture of safety[1] but the studied hospital lacked such an environment and non-punitive response to error received the lowest score among all other dimensions of patient safety culture, which is similar to Tupper findings [28], Hellings et al [18] and also kim et al. who concluded that most of nurses in Korean hospitals do not feel free to express their concern on patient safety issues, and the fact that event reporting and safety culture did not caught attentions sufficiently[29] It is apparent that when there is fear in the hospital, staff will do everything possible to hide errors and filter data [30] because they believe that mistakes they make are kept in their personal file and if this kind of perception is institutionalized across the hospital, no learning based on previous mistakes will be achieved and this seriously threaten patient safety. Since an organization's upper level management has long been recognized as playing a critical role in promoting organizational safety culture[31], it is obvious that no initiative regarding safety culture can be successful without management support and creating a strong safety culture is a critical but challenging task of senior leaders in organizations involved in potentially harmful activities [32], Despite leadership's crucial role, leading safety researchers in healthcare suggest that few hospital Chief Executive Officers (CEOs) devote sufficient time or resources to patient safety[33], our study also showed that hospital management support for patient safety received low score (32.2 percent), although hospital management were very eager to issues regarding patient safety, but the problem arises from the fact that this support has not been perceived by staff, they all were unsure of management support in safety issues. Sine [34] believes that main determinants of safety culture such as management support and communications influence other dimensions of safety culture this has an important message for studied hospital "the role of management support is critical in developing safety culture". The most interesting or better to say worrying finding of our study showed that there was no official mechanism for event reporting at this hospital. Most respondents facing the question regarding to "frequency of event reporting" mentioned that there was no formal system for reporting errors. And some of them mentioned that they often report safety related issues through informal communicating channels. Lack of a formal system may cause a single problem to occur several times, since there is no analysis on its origin to prevent it from reoccurrence. Comparing our findings with AHRQ benchmark (table 2) showed that our dimensional percent scores were lower in all dimensions except for overall perceptions of safety; feedback and communication about error and hospital handoff and transition. This finding seems inconsistent with the fact that there is no official system for reporting events. This might be explained by the fact that a safety committee is already established at this hospital and have regular meetings. In the open question which was designed at the end of survey respondents mentioned these safety problems more frequently.

1. Lifts breakdown
2. patients alarms were out of repair
3. windows has no palisade
4. impair ness or lack of bedsides
5. staff shortage

Setting priorities for action: Little is known about specific mechanisms that senior healthcare leaders can use to instill a strong safety culture in their organizations, and leaders have few metrics to evaluate their own efforts to achieve this goal [35]. Overcoming organizational inertia and resistance maybe be a major challenge to health care leaders and require change management skills to identify pertinent barriers and facilitators facing change endeavors [36]. Experience of the UK's National Patient Safety Agency suggests that building a strong Safety culture requires nurse managers to exhibit strong leadership including listening; explaining the relevance, importance, and benefits of patient safety; and promoting an ethos of respect and ability to speak up [37]. Singer and Tucker [32] suggests that building a strong safety culture requires six behaviors from senior leadership: 1.Set and communicate a clear and compelling safety vision; 2.Value and empower personnel to achieve the vision; 3.Engage actively in the hospital's patient safety improvement effort; 4.Lead by example; 5.Focus on system issues rather than on individual error; and 6.Continually search for improvement opportunities. In addition to general advices available from literature, based on findings of the study these context specific suggestions were recommended in order to improve safety culture at the studied hospital to guide setting priorities for action:

1. Institutionalizing the fact that event reporting will not bring in difficulties for whom reported the event or even for whom caused it. This will be achieved by establishing a blame free environment in which people feel comfortable speaking up. Means such as administrative rounds, employee forums, staff education and changing staff orientation are helpful here.
2. Senior leadership's willingness to engage in patient safety efforts sends clear indication to others that such activity is valued and important, so it is necessary for hospital management to demonstrate its attention to safety issues by means like, leadership walk around.
3. Developing a mechanism for event reporting across hospital and analyzing the reports to focus on systemic issues that cause recurring errors rather than on blaming individuals for mistakes. This will be completed by regular feedback to employees.
4. Improving teamwork across hospital units by revising organizational patterns.
5. Investigating the staff shortage at hospital's HRM committee and establishing strategies.
6. Priority setting for spending hospital budget according hospital mission.

Conclusion

Patient safety culture assessments are a recognized tool in patient safety improvement, these assessments should be viewed as a starting point in the development of interventions. Our study permitted identification of hospital patient safety culture dimensions. In particular, it allowed us to have a clear understanding of strengths and weaknesses of the current culture. Our data demonstrated the urgent need of hospital for formulating safety- oriented strategies and acquiring senior management support for safety actions in order to strengthen positive culture across

hospital. A culture of safety, in which every one accepts responsibility for patient safety is necessary before other patient safety practices are introduced, otherwise individuals expected to implement the safety initiatives are unable to effectively communicate or work together. This study indicated that, lack of an established system to report events inhibited the hospital to review events systematically; this finding highlights the importance of developing a reporting system as a priority for this hospital. Staff general perception about existing a punitive response to events is a main barrier facing any safety improving initiative. This study highlighted the importance of cultural change prior to any safety initiative.

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