

PATIENT'S SAFETY CULTURE: PRINCIPLES AND APPLICATIONS: REVIEW ARTICLE

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Abstract

This study was conducted to review the literature towards patient's safety culture in terms and applications. Patient's safety is an essential component of healthcare quality. Even with continuous alertness, health care providers face many challenges in today's health care environment in trying to keep patients safe. Patient's safety is now a required subject that can provide feedback to the healthcare systems with the possibility of implementing improvement measures based on the identification of specific problems. The culture of patient's safety can be analyzed at different levels of the healthcare system, through identifying strengths and weaknesses that configure the way that healthcare professionals think, behave and approach their work. Continuous evolutions in healthcare increase the importance of establishing and maintaining a culture of patient's safety. Therefore research on safety culture is needed to raise awareness about the role of culture in promoting a safer environment. Patient's safety culture examines how the perceptions, behaviors, and competencies of individuals and groups determine an organization's commitment, style, and proficiency in health and safety management and it is used by organizations to determine targets for interventions to improve patient's safety, evaluate the success of patient's safety interventions, fulfill regulatory requirements, and conduct benchmarking. Patient's safety culture is approached from different perspectives or dimensions such as reporting the frequency and severity of incidents, which so far are not taken into account by hospital staff. In this sense, an ongoing commitment must exist by management to promote and facilitate the culture of patient's safety by providing the necessary tools to identify the most prevalent cultural patterns

Keywords: patient, safety, culture, health care, quality

Introduction

Patient's safety is an essential component of healthcare quality. Even with continuous alertness, health care providers face many challenges in today's health care environment in trying to keep patient's safe. The Institute of Medicine (IOM) has summarized the evidence about medical errors in the United States. This evidence estimates that up to 98,000 individuals die every year in hospitals as a result of medical errors. The IOM has suggested that the biggest challenge to move toward a safer health care system is changing the patient's safety culture (PSC) from one in which people are blamed for errors to one in which errors are treated as opportunities to improve the health care system and prevent harm (IOM, 2001).

The study of patient's safety is now a required subject that can provide feedback to the healthcare systems with the possibility of implementing improvement measures based on the identification of specific problems. The culture of patient's safety can be analyzed at different levels of the healthcare system, through identifying strengths and weaknesses that configure the way that healthcare professionals think, behave and approach their work. Continuous evolutions in healthcare increase the importance of establishing and maintaining a culture of patient safety. Therefore research on safety culture is needed to raise awareness about the role of culture in promoting a safer environment (IOM, 2004).

Patient's safety culture examines how the perceptions, behaviors, and competencies of individuals and groups determine an organization's commitment, style, and proficiency in health and safety management (Lee, 1996), and it is used by organizations to determine targets for interventions to improve patient safety, evaluate the success of patient's safety interventions, fulfill regulatory requirements, and conduct benchmarking (Nieva and Sorra, 2003; Colla et al., 2005).

The study of patient's safety culture is approached from different perspectives or dimensions such as reporting the frequency and severity of incidents, which so far are not taken into account by hospital staff. In this sense, an ongoing commitment must exist by management to promote and facilitate the culture of patient's safety by providing the necessary tools to identify the most prevalent cultural patterns (Haynes, 2009).

Hospitals with well-developed PSC have been shown to reduce lengths of stay, reduce medication reconciliation errors, and improve nursing staff retention (Pronovost et al., 2005). The IOM recommended that health care organizations assess their PSC, redesign systems to reduce opportunities for error, and establish comprehensive patient's safety programs to increase

detection of adverse events (Martin, 2008). The safety of a patient depends on each health professional's ability to "do the right thing." As a health professional continuously works at improving quality, individual performance shifts to "doing the right thing right" (Shojania et al., 2001).

According to the Agency of Healthcare Research and Quality (AHRQ), developing a patient's safety culture requires an understanding of the values, beliefs, and norms about what is important in an organization and what attitudes and behaviors related to patient's safety are supported, rewarded, and expected. Therefore, it is critical for health care organizations to assess their culture regarding patient's safety in order to allow healthcare organizations to obtain a clear view of the patient's safety aspects requiring urgent attention, and identify the strengths and weaknesses of their safety culture (Nieva and Sorra, 2003).

The results of one study in Jordan showed that medication errors, wrong diagnosis, hospital-acquired infections, bed sores and falls were the most common types of adverse events; and that workload and inadequate staffing; technical performance, negligence and poor ethics, poor management, psychosocial job demands and written guidelines were the most common causes of adverse events. On average, participants in the study believed that adverse events occurred in about 28% of all hospital admissions (Hayajneh, Abu AlRub, and Almahzoomy, 2010).

In Jordan, in response to the rising problem of medical errors and increasing public pressure and media attention, health facilities have been actively pursuing efforts to improve quality and safety of healthcare services.

Several initiatives have been carried out to improve safety in healthcare facilities. A major influence in changing the overall culture of quality and safety has been the advent of the Health Care Accreditation Council (HCAC). This Jordanian agency created in 2007 has fostered continuous improvement of the quality and safety through setting standards and awarding accreditation. In 2009, the HCAC also initiated setting annual National Quality and Safety Goals to help healthcare organizations address specific areas of concern in regards to patient safety.

Since there was no previous literature or current research studies at Ministry of Health hospitals that measured the organization's safety culture, the objective of this study is to assess healthcare professionals' perception of patient's safety culture at the Ministry of Health nationally accredited hospitals and to describe patients' safety culture dimensions within the context of the Jordanian healthcare system. The findings of this study will provide health care organizations with an understanding of the patient's safety culture and help hospitals better plan for future quality and patient's safety improvements.

The Institute of Medicine report “To err is human” mentioned the need to develop a culture of safety in healthcare organizations focused on improving the reliability and safety of care for patients. “The biggest challenge to moving toward a safer health system is changing the culture from one of blaming individuals for errors to one in which errors are treated not as personal failures, but as opportunities to improve the system and prevent harm” (Donaldson, 2008).

Promoting a culture of safety has become one of the important issues of the patient's safety movement. In recent years there has been increasing understanding within the healthcare industry that various factors—such as the emphasis on production, efficiency and cost controls, organizational and individual inability to acknowledge, combine to create a culture contradictory to the requirements of patient's safety and the culture of the healthcare industry is regarded as a potential risk factor threatening the patients for whom it provides care (Gaba, Howard, and Jump, 1994).

Professional and organizational cultures in health care must undergo a transformation in the interests of promoting safer patient care. Health care must come to see itself as a high hazard industry which is inherently risky (Leape et al., 1998). It must abandon the philosophy of requiring perfect, error free performance from individuals and focus, instead, on designing systems for safety. Healthcare systems must move away from the current “blame and shame” culture that prevents acknowledgement of error and therefore obstructs any possibility of learning from error. Safety improvement requires that healthcare systems have ready access to information that supports learning from experience in order to promote systems that both prevent errors and mitigate the impact of errors that occur (Reason, 1997).

One of the most critical elements of the patient's safety movement has been the focus on establishing a culture of safety within our healthcare organizations. Patient's safety culture is a complex concept for which the meaning needs to be considered. Different safety culture definitions and components are available:

- a) “The safety culture of an organization is the product of individual and group values, attitudes, perceptions, competencies, and patterns of behavior that determines the commitment to, and the style and proficiency of, an organization’s health and safety management. 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” (HSC, 193).
- b) Four beliefs present in a safe, informed culture(IOM, 2004):
 - Our processes are designed to prevent failure

- We are committed to detect and learn from error
 - We have a just culture that disciplines based on risk
 - People who work in teams make less error.
- c) “Enduring, shared beliefs and behaviors that reflect an organization’s willingness to learn from errors” (Wiegmann et al., 2002).
- d) Reason’s Four Components
- Reporting Culture - a safe organization is dependent on the willingness of front-line workers to report their errors and near-misses
 - Just Culture - management will support and reward reporting; discipline occurs based on risk taking
 - Flexible Culture - authority patterns relax when safety information is exchanged because those with authority respect the knowledge of front-line workers
 - Learning Culture - organization will analyze reported information and then implement appropriate change (Reason, 1997).

Safety Culture Measurement

Interest in safety culture measurement in healthcare organizations has grown in parallel with the increasing focus on improving patient safety. In order to transform culture it is important to first understand and confront it. Culture assessment tools provide an understanding to develop an action plan to improve patient safety. Existing patient's safety culture measurement tools are numerous, whereas little information in the literature provides guidance to Users or researchers in the selection of tools for research or safety improvement measurement initiatives (Scott et al., 2003).

An important characteristic of safety culture assessment tools is whether they take a managerial or staff perspective, or combine elements of both. Some measurement tools focus on management assessments of patient's safety policies and practices in their organizations. These tools assess managerial perspectives about what they see as occurring, or needing to occur, in their organizations, as represented by formal policies and standard operating practices. Other tools focus on staff perceptions and attitudes. Rather than eliciting the views of senior managers, these instruments focus on perceptions of what occurs in the daily life of the organization from the perspective of direct patient care providers and other staff who have an impact on patient's safety(AHA, 2001).

The staff-based assessments are structured self-report surveys that measuring the perspectives of staff at the “sharp end” of healthcare delivery in various settings (for example, emergency rooms, intensive care units, hospitals, or ambulatory care clinics). Typically, healthcare staffs are asked

to respond to a list of descriptive statements that are designed to describe various safety culture domains. Respondents indicate their agreement (for example, from “strongly disagree” to “strongly agree”) or the frequency with which events described occurs (for example, from “never” to “always”). These instruments derive numerical scores that indicate the type of culture characterizing the organization, such as a group oriented or hierarchical culture. Scores may also be used to indicate the organization’s standing on multiple culture domains such as openness of communication, teamwork, or perceptions of event reporting (Sorra et al., 2002).

Aneesh’s literature review yielded thirteen instruments, covering a total of 23 individual dimensions of patient’s safety grouped into broad categories of management/supervision, risk, work pressure, competence, rules, and miscellaneous. This study found that nine were designed for general administration to hospital personnel including physicians, nurses, pharmacists, and other caregivers; whereas, four of the surveys were designed for specific respondents, for example:

- The Veterans Health Administration Patient’s safety Questionnaire consists of 112 questions across 18 dimensions.
- The Hospital Safety Culture Questionnaire consists of 99 questions and covers 14 dimensions.
- The Safety Climate Survey consists of 21 questions across 11 dimensions
- The Allina Hospitals and Clinics survey consists of 13 questions and measures 8 dimensions.
- The AHRQ Hospital Survey on Patient’s safety consists of 42 questions and measures 12 dimensions. It was developed by Westat under contract with AHRQ, with questions derived from a review of existing safety culture literature and instruments, including the Veterans Health Administration Patient’s safety Questionnaire and the Medical Event Reporting System for Transfusion Medicine. The AHRQ instrument was piloted in 20 hospitals, and the results were used to generate a list of 12 factors, which all displayed high internal consistency by factor analysis (0.63 to 0.84) (Aneesh et al., 2006).

Healthcare organizations may conduct safety culture assessments for a variety of reasons. Culture assessments can be used to: (1) identify areas for improvement and raise awareness about patient safety; (2) evaluate patient’s safety interventions or programs and track change over time; (3) conduct internal and external benchmarking; and (4) fulfill directives or regulatory requirements as accreditation standards. The positive safety culture is characterized by “communications founded on mutual trust, by

shared perceptions of the importance of safety and by confidence in the efficacy of preventive measures” (Cooper, 2000).

The culture of patient's safety can be analyzed at different levels of the healthcare system and constitutes the core of the institutions, which can identify strengths and weaknesses that configure the way that healthcare professionals think, behave and approach their work (Grote and Kunzler, 2000).

At Johns Hopkins Hospital, Pronovost, Weast, and Holzmueller (2003) conducted a study on patient's safety culture with 395 participants from medical staff (physicians, nurses, pharmacists, and other ICU staff) using the safety climate questionnaire. They found that supervisors had a greater commitment to safety than senior leaders; and, nurses had higher scores than physicians for perceptions of safety. They suggested that strategic planning of patient's safety needed enhancement.

In China, a safety climate survey was carried out in 2008 at a university hospital in Shanghai, using an operating room management attitudes questionnaire. These researchers found that the safety climate had not matured in the hospital surveyed, and that this finding might be partly tied to a blame culture. Considering healthcare policies, procedures, and management styles shared with many other healthcare organizations as well as Chinese culture, it could be hypothesized that the immature nature is common in Chinese health care as one of its overall characteristics (Gu and Itoh, 2011).

In Taiwan, the authors of a study of the culture of patient's safety used the Hospital Survey on Patient's safety Culture (HSOPSC) questionnaire with 788 respondents including physicians, nurses, and non-clinical staff. The results showed that hospital staff in Taiwan few positively toward patient's safety culture. The dimension that received the highest positive response rate was “teamwork within units”, which is similar to the results reported in the US. The dimension with the lowest percentage of positive responses was “staffing” (Chen and Li, 2010).

In five Belgian hospitals, a patient's safety culture survey was used to assess healthcare professional's perception of safety culture. The results showed that the lowest scores were “hospital management support for patient safety” (35%), “non-punitive response to error” (36%), “hospital transfers and transitions” (36%), “staffing” (38%), and “teamwork across hospital units”(40%). The dimension “teamwork within hospital units” generated the highest score (70%) (Hellings et al, 2007).

Thirty Virginian hospitals were involved in a patient's safety climate survey with 4,547 participants. The differences in safety climate emerged by management level, clinician status, and workgroup. Supervisors and front-line staff reported lower levels of safety climate than senior managers;

clinician responses reflected lower levels of safety climate than those of non-clinicians (Christine et al., 2008).

The patient's safety climate in healthcare organizations survey was used with a stratified random sample of 92 US hospitals, with 100% of senior managers and physicians and 10% of all other workers sampled. The results showed that patient's safety climate differed by hospital and among and within work areas and disciplines. Emergency department personnel perceived a worse safety climate and personnel in nonclinical areas perceived a better safety climate than workers in other areas. Nurses were more negative than physicians regarding their work unit's support and recognition of safety efforts, and physicians showed marginally more fear of shame than nurses (Singer et al., 2009).

In the Netherlands, the data from a national patient's safety culture survey in 19 hospitals clarified that the unit level was the dominating level for the clustering of responses to the 11 dimensions. Intra-class correlations at unit level ranged from 4.3 to 31.7, representing considerable higher-level variation. For three dimensions of patient's safety culture, there was significant clustering of responses at hospital level as well: 1) feedback regarding learning from error, 2) teamwork across hospital units and 3) non-punitive response to error. The results imply that improvement efforts on patient's safety culture should be addressed at the unit level, rather than the individual or hospital level (Smits et al., 2009).

AHRQ Hospital Survey of Patient's safety was administered in 2008 to all nurses and attending physicians (N=4283) in a 900-bed acute care hospital in USA, across 57 units. The percentage of reporting safety grade of excellent ranged from 0% to 50%. The overall percentage of positive ratings was lower for the operating and emergency units than for inpatient medical and other clinical units. Physicians reported more negative ratings than nurses for some safety climate dimensions (Campbell et al., 2010).

In a Dutch university hospital study, the results showed mixed findings regarding the difference between physicians and nurses. On three scales (teamwork climate, safety climate, and stress recognition) physicians scored better than nurses. On other two scales (i.e., perceptions of management and working conditions), nurses consistently had higher mean scale scores. Compared to benchmarking data, scores on perceptions of management were higher than expected ($p < .01$), whereas scores on stress recognition were low ($p < .001$). The scores on the other scales were somewhat above (job satisfaction), close to (teamwork climate, safety climate), or somewhat below (working conditions) what was expected on the basis of benchmarking data, but no persistent significant differences were observed on these scales (Poley et al., 2011).

In a California study (2003), sample of 6312 employees from 15 hospitals, generally comprised of all the hospital's attending physicians, all the senior executives (defined as department head or above), and a 10% random sample of all other hospital personnel responded to a safety culture survey. The response rate was 47.4% overall, 62% excluding physicians. The results suggested an absence of safety culture. The culture differed significantly, not only between hospitals, but also by clinical status and job class within individual institutions (Singer et al., 2003).

A cross-sectional study was conducted utilizing the Turkish Hospital Survey on Patient's Safety Culture. The outcome of the study showed that 54 (30%) of the participants were general practitioners, 48 (27%) were nurses, 51 (28%) were midwives and 27 (15%) were health officers. Among the dimensions of patient safety, those with the highest percentage of positive ratings were teamwork within units (76%) and overall perceptions of safety (59%), whereas those with the lowest percentage of positive ratings were the frequency of event reporting (12%) and non-punitive response to error (18%). Reporting of errors was infrequent with 87% of general practitioners, 92% of nurses and 91% of other health staff indicating that they did not report or provide feedback about errors (Bodur and Filiz, 2009).

In Saudi Arabia, The hospital survey on patient's safety culture questionnaire was distributed in 13 general hospitals in Riyadh City, to 223 health professionals including nurses, technicians, managers and medical staff. Results showed that the overall patient's safety grade was rated as excellent or very good by 60% of respondents, acceptable by 33% and failing or poor by 7%. More than half of respondents thought that managers overlook safety problems that happen over and over. Areas of strength for most hospitals were organizations learning/continuous improvement, teamwork within units, and feedback and communication about errors. Areas with potential for improvement for most hospitals were under-reporting of events, non-punitive response to error, staffing, and teamwork across hospital units. The researchers concluded that leadership is a critical element to the effectiveness of patient's safety initiatives and response to errors is an important determinant of safety culture in healthcare organizations (Alahmadi, 2010).

In Lebanese hospitals, a cross-sectional research design was used to conduct a hospital survey on patient's safety culture. Sixty-eight Lebanese hospitals participated in the study (54% of all hospitals in Lebanon). A total of 6807 hospital employees participated in the study including hospital-employed physicians, nurses, and clinical staff. The results showed that the dimensions with the highest positive ratings were teamwork within units, hospital management support for patient safety, and organizational learning

and continuous improvement. Those with lowest ratings included staffing and non-punitive response to error. Approximately 60% of respondents reported not completing any event reports in the past 12 months and over 70% gave their hospitals an 'excellent/very good' patient's safety grade (El-Jardali and Jaafar, 2010).

The results of study in public Palestinian hospitals shows, that the Most of the participants were nurses and physicians (69.2%) with direct contact with patients (92%), mainly employed in medical/surgical units (55.1%). The patient's safety composites with the highest positive scores were teamwork within units (71%), organizational learning and continuous improvement (62%) and supervisor/manager expectations and actions promoting patient's safety(56%). The composites with the lowest scores were non-punitive response to error (17%), frequency of events reported (35%), communication openness (36%),Although 53.2% of the respondents did not report any event in the past year, 63.5% rated patient's safety level as 'excellent/very good'(Hamdan and Saleem, 2013).

Creating a positive culture that promotes patient's safety is one of the key challenges facing healthcare organizations. Recently, many hospitals have conducted safety culture surveys to assess their current culture and identify areas for improvement. It is likely that these organizations have experienced similar difficulties and need to identify actions to improve their culture.

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