Assessment of Patient Safety Culture in Abu Arish General Hospital, Jazan, Saudi Arabia

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Abstract

Background: The concept of patient’s safety culture refers to the work and the joint actions of the members of an institution or organization with respect to their ability to detect errors and address and avoid them in the future and learn from them.

Objectives: To assess safety culture in “Abu Arish” General Hospital to provide a starting point from which action planning begins and patient safety changes emerge.

Methodology: The methodology of this study was based on the guidelines provided by the Agency for Healthcare Research and Quality (AHRQ). Data were collected using the Hospital Survey on Patient Safety Culture Form. Analysis of data was by Microsoft Excel and the Statistical Package for Social Sciences (SPSS) programs. A survey questionnaire was distributed in “Abu Arish” General Hospital to 207 health care providers, including nurses, technicians, managers and medical staff.

Results: The patient safety composites with the highest positive scores were teamwork within units (72%), organizational learning and continuous improvement (70%) and the composites with the lowest scores were non-punitive response to error (22%), staffing (32%), Handoffs & Transitions (38%), frequency of events reported (40%), communication openness (43%), hospital management support for patient safety (43%) and Teamwork Across Units (43%).

Conclusions: This study provides an overall assessment of perceptions of safety among hospital staff in a general hospital. There are areas of strengths and weakness in the patient safety culture dimensions. There are several areas for improvement, including non-punitive response to errors, staffing, hospital handoffs & transitions and error reporting.

Keywords: Patient safety, Saudi Arabia.
**Introduction**

The concept of patient’s safety culture refers to the work and the joint actions of the members of an institution or organization with respect to their ability to detect errors and address and avoid them in the future and learn from them. The Agency for Healthcare Research and Quality (AHRQ) in the USA supports the development of patient safety culture assessment tools for hospitals, nursing homes, and ambulatory outpatient medical offices. In 2004, the AHRQ released the Hospital Survey on Patient Safety Culture, a staff survey designed to help hospitals assess the culture of safety in their institutions (1).

Patient safety is a critical component of health care quality. As health care organizations continually strive to improve, there is a growing recognition of the importance of establishing a culture of safety. Hence, patient safety culture has been applied by several countries, such as in Belgian acute hospitals (2), China (3), Taiwan (4), Italy (5), Germany (6), Iran (7), Palestine (8) (9), Lebanon (10), and Egypt (11). However, there are limited studies in Saudi Arabia, that assessed patient safety culture in Riyadh’s Hospitals (12)(13). Another study assessed nurses’ perceptions and attitudes of patient safety culture (14).

Methods and research designs applied to study patients’ safety culture vary from one study to another, according to resources of times, persons and cost. The commonest study design is the cross-sectional, while the most effective are randomized control trials. They measure the effects of a team-based assessment and intervention on patient safety culture in general practice (2).

Language, work area, and profession were identified as important safety culture predictors. Years of experience in the hospital were shown to have a small effect on safety culture perceptions (2). Patient safety grade deteriorated and the number of events reported increased with long working hours, which had an impact on ‘staffing’ and ‘teamwork within units’ in Japan, the US and Taiwan (4).

Attitude surveys provide a method for assessing safety culture in surgery, for evaluating the effectiveness of training initiatives, and for collecting data for a hospital’s quality assurance program (5). Intervention practices showed better reporting of patient safety incidents, reflected in a higher number of incident reports and incident reports of higher quality (6).

To achieve a safety culture, we should understand the beliefs, values and principles around it, and we also need to regulate the behaviors related to patient safety. The safety culture of an organization is the product of individual and group values, attitudes, perceptions, competencies, and patterns of behavior that determine 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 (1).

Moreover, the team Strategies and Tools to Enhance Performance and Patient Safety (STEPPS), acts as a training program that has been developed and disseminated by the Department of Defense and the Agency for Healthcare Research and Quality. It focuses on importance of teamwork and team training in the prevention of medical errors through communication and other teamwork skills and that teamwork is essential to achieving high reliability in healthcare organizations improving patient safety (15).

**Methodology**

The present study was conducted in “Abu Arish” General Hospital on 207 health care providers, following a cross-sectional study design. The study hospital has a total of 130 beds and 19 clinics. The validated English and Arabic versions of the Patient Safety Culture Questionnaire (1; 16) were used for data collection.

The inclusion criteria were hospital staff who have direct contact or interaction with patients (e.g., nurses), or nonclinical staff (e.g., unit clerks); hospital staff who may not have direct contact or interaction with patients but whose work directly affects patient care (e.g., staff in the pharmacy, or laboratory/pathology units); hospital-employed physicians who spend most of their work hours in the hospital (e.g., emergency department physicians, pathologists); in addition to hospital supervisors, managers, and administrators. Physicians who have privileges at the hospital, but are not hospital employees but may spend the majority of their work time in non-hospital, outpatient settings were excluded.

The survey measured the following unit-level aspects of safety culture:

- **Supervisor/Manager Expectations & Actions Promoting Safety:** Organizational learning—continuous improvement, teamwork within units, communication openness feedback and communication about error, non-punitive response to error and staffing.
- **Hospital-level aspects of safety culture:** hospital management support for patient safety (3 items), teamwork across hospital units (4 items), and hospital handoffs and transitions (4 items).
- **Four outcome variables:** Overall perceptions of safety; frequency of event reporting; patient safety grade (of the hospital unit); and number of events reports.

Collected data were analyzed using a specially design Microsoft Excel file that was developed by AHRQ.

**Ethical considerations:**

The ethical approval was obtained from the regional ethical committee at “Abu Arish” General Hospital authority and written informed consent was obtained from all participants.
Results

Table (1) shows that the highest participations were for healthcare providers at Medicine, Surgery and Obstetrics departments (10.6%, 9.7% and 9.7%, respectively). The majority of participants (88.9%) interact with patients. Participants’ experience in the current units, the study hospital, and experience in their current specialty were mainly short (i.e., less than one year or 1-5 years). Most participants (61.8%) had 40-59 hours' work per week.

Table (2) shows that participants’ responses regarding patients’ safety culture component ranged from 22% to 72%. The main points of strengths for the hospital were teamwork within units (72%), organizational learning/continuous improvement (70%), feedback and communication about errors (60%) and supervisor, manager expectations and actions promoting patient safety. The main points which needed improvement were non-punitive response to errors (22%), staffing (32%), hospital handoffs & transitions (38%) and frequency of events reported (40%).

Table (3) shows that the overall perception of patient safety culture assessed by four questionnaire items was rated as excellent or very good by 72%, acceptable by 22% and failing or poor by 7%. The respondents generally thought that patient safety is never sacrificed to get more work done (18%) and their procedures and systems are good at preventing errors from happening (16%). On other side, about (29%) of respondents thought that it is just by chance that more serious mistakes do not happen in their hospital. In addition, (39%) of respondents indicate that they have patient safety problems in their unit.

Figure (1) shows that the number of events reported in the study hospitals were generally higher than those in the AHRQ database.
Table 1: Background characteristics of the study participants (n = 207)

<table>
<thead>
<tr>
<th>Items</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Work Area/Unit</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Medicine (non-surgical)</td>
<td>22</td>
<td>10.6</td>
</tr>
<tr>
<td>• Surgery</td>
<td>20</td>
<td>9.7</td>
</tr>
<tr>
<td>• Obstetrics</td>
<td>20</td>
<td>9.7</td>
</tr>
<tr>
<td>• Laboratory</td>
<td>17</td>
<td>8.2</td>
</tr>
<tr>
<td>• Intensive care unit (any type)</td>
<td>16</td>
<td>7.7</td>
</tr>
<tr>
<td>• Emergency department</td>
<td>15</td>
<td>7.2</td>
</tr>
<tr>
<td>• No specific unit</td>
<td>14</td>
<td>6.8</td>
</tr>
<tr>
<td>• Radiology</td>
<td>12</td>
<td>5.8</td>
</tr>
<tr>
<td>• Pediatrics</td>
<td>11</td>
<td>5.3</td>
</tr>
<tr>
<td>• Rehabilitation</td>
<td>9</td>
<td>4.3</td>
</tr>
<tr>
<td>• Pharmacy</td>
<td>7</td>
<td>3.4</td>
</tr>
<tr>
<td>• Anesthesiology</td>
<td>3</td>
<td>1.4</td>
</tr>
<tr>
<td>• Others</td>
<td>41</td>
<td>19.8</td>
</tr>
<tr>
<td><strong>Interaction with patients</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Yes</td>
<td>184</td>
<td>88.9</td>
</tr>
<tr>
<td>• No</td>
<td>19</td>
<td>9.2</td>
</tr>
<tr>
<td><strong>Time worked in their current hospital work area/unit</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• &lt;1 year</td>
<td>84</td>
<td>40.6</td>
</tr>
<tr>
<td>• 1-5 years</td>
<td>64</td>
<td>30.9</td>
</tr>
<tr>
<td>• 6-10 years</td>
<td>28</td>
<td>13.5</td>
</tr>
<tr>
<td>• 11-15 years</td>
<td>11</td>
<td>5.3</td>
</tr>
<tr>
<td>• 16-20 years</td>
<td>10</td>
<td>4.8</td>
</tr>
<tr>
<td>• ≥21 years</td>
<td>10</td>
<td>4.8</td>
</tr>
<tr>
<td><strong>Years of experience in the hospital</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• &lt;1 year</td>
<td>94</td>
<td>45.4</td>
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<tr>
<td>• 1-5 years</td>
<td>72</td>
<td>34.8</td>
</tr>
<tr>
<td>• 6-10 years</td>
<td>16</td>
<td>7.7</td>
</tr>
<tr>
<td>• 11-15 years</td>
<td>11</td>
<td>5.3</td>
</tr>
<tr>
<td>• 16-20 years</td>
<td>6</td>
<td>2.9</td>
</tr>
<tr>
<td>• ≥21 years</td>
<td>8</td>
<td>3.9</td>
</tr>
<tr>
<td><strong>Experience in their current specialty or profession</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• &lt;1 year</td>
<td>65</td>
<td>31.4</td>
</tr>
<tr>
<td>• 1-5 years</td>
<td>65</td>
<td>31.4</td>
</tr>
<tr>
<td>• 6-10 years</td>
<td>40</td>
<td>19.3</td>
</tr>
<tr>
<td>• 11-15 years</td>
<td>17</td>
<td>8.2</td>
</tr>
<tr>
<td>• 16-20 years</td>
<td>8</td>
<td>3.9</td>
</tr>
<tr>
<td>• ≥21 years</td>
<td>12</td>
<td>5.8</td>
</tr>
<tr>
<td><strong>Typical hours worked per week</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• &lt;20 hours per week</td>
<td>14</td>
<td>6.8</td>
</tr>
<tr>
<td>• 20-39 hours per week</td>
<td>25</td>
<td>12.1</td>
</tr>
<tr>
<td>• 40-59 hours per week</td>
<td>128</td>
<td>61.8</td>
</tr>
<tr>
<td>• 60-79 hours per week</td>
<td>29</td>
<td>14.0</td>
</tr>
<tr>
<td>• 80-99 hours per week</td>
<td>4</td>
<td>1.9</td>
</tr>
<tr>
<td>• ≥100 hours per week</td>
<td>7</td>
<td>3.4</td>
</tr>
</tbody>
</table>
Table 2: Composite scores (mean% positive) for dimensions of patient safety culture for all participants (n =207)

<table>
<thead>
<tr>
<th>Patient safety culture composite</th>
<th>Average % positive response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teamwork within units</td>
<td>72</td>
</tr>
<tr>
<td>Organizational learning/continuous improvement</td>
<td>70</td>
</tr>
<tr>
<td>Supervisor, manager expectations and actions promoting patient safety</td>
<td>60</td>
</tr>
<tr>
<td>Feedback and communication about errors</td>
<td>60</td>
</tr>
<tr>
<td>Overall perceptions of safety</td>
<td>53</td>
</tr>
<tr>
<td>Teamwork across hospital units</td>
<td>43</td>
</tr>
<tr>
<td>Communication openness</td>
<td>43</td>
</tr>
<tr>
<td>Hospital management support to patient safety</td>
<td>43</td>
</tr>
<tr>
<td>Frequency of events reported</td>
<td>40</td>
</tr>
<tr>
<td>Hospital handoffs &amp; transitions</td>
<td>38</td>
</tr>
<tr>
<td>Staffing</td>
<td>32</td>
</tr>
<tr>
<td>Non-punitive response to errors</td>
<td>22</td>
</tr>
</tbody>
</table>

Table 3: Percentages of overall safety perception, frequency of event reporting and patient safety grades

<table>
<thead>
<tr>
<th>Overall Perceptions of Safety</th>
<th>Positive</th>
<th>Neutral</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>It is just by chance that more serious mistakes don’t happen around here</td>
<td>44</td>
<td>27</td>
<td>29</td>
</tr>
<tr>
<td>Patient safety is never sacrificed to get more work done</td>
<td>69</td>
<td>13</td>
<td>18</td>
</tr>
<tr>
<td>We have patient safety problems in this unit</td>
<td>40</td>
<td>29</td>
<td>31</td>
</tr>
<tr>
<td>Our procedures and systems are good at preventing errors from happening</td>
<td>60</td>
<td>23</td>
<td>13</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Frequency of Event Reporting</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>How frequently a mistake is made, caught and corrected before affecting the patient?</td>
<td>39</td>
<td>29</td>
<td>32</td>
</tr>
<tr>
<td>When a mistake is made, but has no potential to harm the patient, how often is this reported?</td>
<td>35</td>
<td>34</td>
<td>30</td>
</tr>
<tr>
<td>When a mistake is made that could harm the patient, but does not, how often is this reported?</td>
<td>47</td>
<td>25</td>
<td>29</td>
</tr>
<tr>
<td>Patient safety grade (of the hospital unit)</td>
<td>72</td>
<td>22</td>
<td>7</td>
</tr>
</tbody>
</table>
Introduction

Results of our study showed that patient safety composites with the highest positive scores were teamwork within units, organizational learning/continuous improvement, feedback and communication about errors, in addition to supervisor, manager expectations and actions promoting patient safety. However, a few points needed improvement such as non-punitive response to errors, staffing, hospital handoffs & transitions and frequency of reported events.

Similarly, in Saudi Arabia, Alahmadi reported that the highest mean composite positive score of patient safety culture was for the organizational learning for continuous improvement, followed by teamwork; the lowest mean score of patient safety culture was for the dimension of non-punitive response to error. Response to errors is an important determinant of safety culture in healthcare organizations. In order for healthcare organizations to create a culture of safety and improvement, they must eliminate fear of blame and create a climate of open communication and continuous learning (12).

In Lebanon, El-Jardali noted that the dimensions with the highest positive ratings of patient safety culture were teamwork within units, hospital management support for patient safety, and organizational learning and continuous improvement, while those with lowest ratings included staffing and non-punitive response to error (10).

In comparison to the systematic review of Albalawi et al., there were similarities in points of weakness like ineffective leadership, a blame culture, workload/inadequate staffing and poor communication between units and positive points of teamwork within units and Organizational Learning Continuous Improvement. Conversely, ‘strength’ points of patient safety culture were supportive organizational attitudes to learning/continuous improvement, good teamwork within units and support from hospital management for patient safety (17).

According to the AHRQ database, the composite of safety culture with positive score more than 70% is considered as a point of strength and the composite with scores less than 50% as a point of weakness (1).

Our findings about teamwork within units was less than that reported by Alahmadi in Saudi Arabia in 16 hospitals (84%) (12), that reported by El-Jardali et al. in Lebanon (82.3%) (10), and that of the AHRQ database (80%) (1). However, it was higher than that reported by Al-Ahmadi in Saudi Arabia (69.9%) (13) and that reported in Palestine by Hamdan (71%) (9).
The composite score of “Abu Arish” General hospital in Organizational Learning-Continuous Improvement domain was less than those of previous studies reported by Alahmadi (87%) (12), Al-Ahmadi (79.9%) (13), that reported by El-Jardali et al. in Lebanon (78.3%) (10) and also that of AHRQ database (72%) (1). However, it was higher than that reported in Palestine by Hamdan (62%) (9).

The Supervisor/Manager Expectations & Actions Promoting Patient Safety domain score in our study was (60%) and it was less than that reported by Alahmadi (70%) (12), Al-Ahmadi (64%) (13), in Lebanon by El-Jardali et al. (66.4%) (10) and database of AHRQ (75%) (1). However, it was more than that reported by the study conducted in Palestine by Hamdan (56%) (9).

The composite score of Abu Arish General hospital regarding Feedback & Communication about Error domain was (60%). This was less than that reported by Alahmadi study (77%) (12), Al-Ahmadi study (63.3%) (13), El-Jardali et al. (68.1%) (10) and the AHRQ database (64%) (1). However, it was more than that reported by the study of Al-Ahmadi (51.4%) (13).

The Overall Perceptions of Patient Safety domain score was (53%). This was less than that that reported by Alahmadi (59%) (12), El-Jardali et al. (72%) (10) and the database of AHRQ (66%) (1). However, it was more than that reported by the study of Al-Ahmadi (51.4%) (13).

The composite score of “Abu Arish” General hospital in Communication Openness domain was (43%) and this was less than that in H A Alahmadi study (60%) (12), Talal A. Al-Ahmadi study (44.2%) (13), Lebanon by El-Jardali et al. (57.3%) (10), and the AHRQ database (62%) (1). But it was more than the study conducted in Palestine by Hamdan (36%) (9).

Our percent score about Teamwork Across Units was (43%). This was less than that reported by Alahmadi (66%) (12), Al-Ahmadi (56.3%) (13), El-Jardali et al. (56%) (10) and the database of AHRQ (58%) (1).

The composite score of “Abu Arish” General hospital in Management Support for patient safety domain was (43%). This was less than the that reported by Alahmadi (74%) (12), Al-Ahmadi (65.4%) (13), El-Jardali et al. (78.4%) (10), and the database of AHRQ (72%) (1). However, it was higher than that reported by the study of Palestine hospitals by Hamdan (37%) (9).

Our findings about Frequency of Events Reported was (40%). This was less than that reported by Alahmadi (63%) (12), Al-Ahmadi (56.2%) (13), El-Jardali et al. (68.2%) (10), and the database of AHRQ (63%) (1). However, it was more than that reported by the study of Palestine hospitals by Hamdan (35%) (9).

The Handoffs & Transitions domain score was (38%). This was less than that reported by Alahmadi (61%) (12), Al-Ahmadi (47.6%) (13), El-Jardali et al. (49.7%) (10) and the database of AHRQ (45%) (1).

Ismail et al. stressed that patient safety culture still has many areas for improvement that need continuous evaluation and monitoring to attain a safe environment both for patients and health-care providers (11).

In conclusion, this study provides an overall assessment of perceptions of safety culture among hospital staff in a general hospital in Saudi Arabia. There are points of strengths of safety culture dimension, such as the teamwork within units and organizational learning/continuous improvement. Staff support each other in the units, work together as a team to get the work done and make changes to improve patient safety. All of these lead to this observed strength. The points of weakness were related to punitive response to error that most participants worry that mistakes they make are kept in their personal files leading to under-reporting of errors. Problems often occur in cooperation and exchange of information across hospital units. Generally, there exists a punitive and blame culture, under-reporting of events, under-staffing, handoffs & transitions, lack of communication openness and inadequate management support.

Therefore, it is to be noted that the first step toward elimination of harm and improvement of patient safety and learning from mistakes is error reporting. Hospital organization must reduce the fear of blame culture and create a climate of open communication and continuous learning improving non-blaming “just culture” in the hospital to facilitate the reporting of errors and learning from them, and it must provide effective strategies to facilitate exchange of information across units. Moreover, hospitals need more manpower to face overload. It is recommended to use team Strategies and Tools to Enhance Performance and Patient Safety (STEPPS).
References


