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# **Patient Safety Culture in Tunisia: Defining Challenges and Opportunities**

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Additional information is available at the end of the chapter

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## **Abstract**

**Background:** Although adverse events in health care have been a center of attention recently, patient safety culture in primary care is relatively neglected. This study aimed to provide a baseline assessment of patient safety culture in the primary healthcare centers and explore its associated factors.

**Methods:** This is a multicenter cross-sectional descriptive study. It was conducted in the center of Tunisia over a period of 4 months. It surveyed 30 primary healthcare centers, thus 251 staff members. It used the French-validated version of the Hospital Survey on Patient Safety Culture questionnaire.

**Results:** The total number of respondents was 214 participants with a response rate of 85%. The dimension of “teamwork within units” had the highest score (71.47%). Though, three safety dimensions had very low scores, which are “frequency of event reporting,” “on-punitive response to errors,” and “staffing” with the following percentages 31.43, 35.36, and 38.43%, respectively. As for associated factors, the dimension of “Frequency of reported events” was significantly higher among professionals involved in risk management committees ( $p = 0.01$ ).

**Conclusion:** This study demonstrated that the level of the patient safety culture needs to be improved in primary healthcare centers in Tunisia. As well, the results obtained highlight the necessity of the implementation of quality management system in primary healthcare centers.

**Keywords:** patient safety culture, patient safety, primary care, risk management

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## 1. Introduction

Adverse events (AEs) still remain as a global challenge and no country has yet overcome all of its patient safety problems [1]. So, many studies have shown the severity of these accidents, in terms of cost, frequency, and serious consequences [2]. The overall incidence of AEs in various high-resource countries varies between 2.9 and 16.6% [1]. The situation is more difficult and serious in low-resource countries with higher risk of patient harm due to the limitation of resources and lack of adequate infrastructures [1, 3]. In Tunisia, a study conducted in Sousse showed that the rate of AEs is 11.3% [1].

As for the area of primary healthcare, which provides the first contact for the patient [2], it goes without saying that quality and patient safety are vital goals and challenges [3]. In fact, errors and AEs are common in the outpatient setting [4, 5]; it has been identified that a significant proportion of safety incidents caught in hospitals had originated in the earlier levels of care [3]. Actually, a study in Spain deemed that 64.3% of AEs in primary care are preventable [5]. As a result, the World Health Organization (WHO) Safety Program has initiated the “Safer Primary Care” project, whose goal is to advance the understanding and knowledge about the risks to patients in primary care and the magnitude of the preventable harm due to unsafe practices in these settings [6].

Furthermore, in order to enhance primary care safety, the National Patient Safety Agency developed a best practice guide that describes how to “build a safety culture” as the first of the seven key steps for primary care organizations to protect the patients they care for [3]. Indeed, the success of any intervention with the ultimate goal of securing care and reducing AEs must go through the development of a patient SC with healthcare workers [4].

Nieva and Sorra defined patient safety culture (PSC) as the product of individual and group values, attitudes, perceptions, competencies, and patterns of behavior that determine the commitment to the style and proficiency of an organization’s safety management [7].

However, undertaking a baseline assessment of PSC of the organization is the first step to start with in building safety culture [3]. Actually, assessing allows healthcare institutions to identify their strengths and weaknesses in terms of patient safety and to provide a clearer view of the aspects that require attention [8, 9].

Several studies found in literature that have been interested to PSC in primary healthcare centers (PHC) and reported variations between countries [2, 3, 9–11]. To our knowledge, there is currently no study that investigated PSC in PHC in Tunisia. We conducted this study to respond to the following research questions: “What is the level of PSC in Tunisian PHCs? And what are the PSC’s associated factors?” Therefore, our objectives were to assess PSC through exploring perceptions and attitudes of professionals in the PHC of the healthcare centers in Sousse (Tunisia) and to determine PSC’s associated factors.

## 2. Methods

### 2.1. Design, settings, duration, and participants

A cross-sectional multicenter study was conducted from January to April 2016 in the PHC in the Tunisian center (Sousse, Kasserine, and Kairouan). These structures were chosen

because they were partners of the Faculty of medicine of Sousse, and therefore, they were responsible for mentoring future family doctors.

All PHC of these listed cities were included in the study ( $n = 30$ ) and all the healthcare providers in them (physicians, healthcare technicians, and nurses) were invited to participate in the study ( $n = 251$ ). Workers who are not involved in healthcare practices and those with less than 1-month experience were excluded.

## 2.2. Measures

The current study used the French version of Hospital Survey of Patients' Safety Culture (HSOPSC) questionnaire, which was translated and validated by the Coordination Committee of the Clinical Evaluation and Quality in Aquitaine (CCCEQA). Internal consistency reliability was of 0.88 for the questionnaire, Cronbach's alpha values varied between 0.46 and 0.84 in 10 dimensions [12].

Ten PSC dimensions were explored by the French version through 45 items. Dimensions were about: overall perception of patient safety (D1), frequency of events reported (D2), supervisor/manager expectations and actions promoting patient safety (D3), organizational learning-continuous improvement (D4), teamwork within units (D5), communication openness (D6), nonpunitive response to error (D7), staffing (D8), management support for patient safety (D9), and teamwork across units (D10). The survey also examined staff perception of patient safety quality (1 item), the number of AEs reported during the last 12 months (1 item), and characteristics of participants (6 items). A Likert scale of five points was used to explore professionals' patient safety culture perception.

## 2.3. Data collection, ethical consideration, and analysis

This study was approved by the common ethics committee of the High School of Sciences and Techniques of Health of Sousse and the university hospitals of Sousse. Administrative authorizations have been obtained from heads, head chiefs, and PHC directors.

A self-reported paper-based questionnaire was distributed to the participants that accepted to take part in the study. The study purposes, outcomes, and instructions were explained to participants. They could freely and anonymously fill in the questionnaire and return their responses directly to the investigator. According to the user guide of the French version of HSOPSC questionnaire, if none of the dimensions' sections was entirely filled, the questionnaire would not be taken into account. Also, if less than half of the items in the questionnaire have been completed, or the same answers were given to all the items, the questionnaire would be illegible and excluded.

## 2.4. Data analysis

The data analysis was conducted using SPSS version 20 and Epi info 6 for windows. Descriptive statistical analysis such as frequencies and percentages of positive responses for each item and dimension were used to examine healthcare professionals' perceptions about PSC. Items were worded in both positive and negative directions. For items with a positive formulation, answers "Strongly Agree/Agree" or "Most of the time/Always" were considered positive. For items with a negative formulation, the answers "Strongly Disagree/Disagree" or "Never/Rarely" responses were considered positive for PSC.

The chi-square test was also used to examine the association between total score of PSC dimensions and participants’ demographic and professional variables such as gender, age, professional title/specialty, work experience, region of the PHC, and participation in risk management committees. Statistical significance was defined at  $p \leq 0.05$ .

3. Results

3.1. Characteristics of the participants

In total, 214 professionals provided survey feedback (85%). Seventy six (35.5%) participants were general practitioners, 92 (43%) were nurses, and 46 (21.5%) were technicians and midwives. As for gender, the majority of respondents 154 (72%) were female with a sex ratio of 0.39. More than half of the professionals (67.8%) had a work experience of more than 10 years (**Table 1**).

Characteristics	n	%
<b>Professional title/specialty</b>		
General practitioners	76	35.5
Healthcare technicians	46	21.5
Nurses	92	43
Total	214	100
<b>Gender</b>		
Females	154	72
Males	60	28
Total	214	100
<b>Age</b>		
>40years	124	58.2
≤40years	90	41.8
Total	214	100
<b>Work experience</b>		
<10 years	69	32.2
≥10 years	145	67.8
Total	214	100
<b>Participation into risk management committees</b>		
Yes	34	15.9
No	180	84.1
Total	214	100

Characteristics	n	%
<b>The district of the primary healthcare center</b>		
Urban	164	76.6
Rural	50	23.4
Total	214	100

**Table 1.** Characteristics of participants.

### 3.2. The staff perception of patient safety quality and the frequency of reported AEs

Staff perception of patient safety quality in the PHC was ranked as good in 59.3% and poor in 15.9%. Regarding reported AEs, 75.2% of the participants declared that they did not report any event in the last 12 months (**Table 2**).

### 3.3. PSC dimensions

Concerning “overall perception of safety,” it had a score of 52.45%. The percentage of positive responses was the highest for “teamwork within units” (71.47%), so this dimension was a potential area for improvement. The lowest scores were for “frequency of event reporting” (31.43%) and “nonpunitive response to error” (35.36%). Results of all dimensions are shown in **Table 3**.

### 3.4. Factors associated with PSC in PHC

All dimensions of PSC have not been significantly associated with professional title, gender, work experience, the region of the PHC, and participation to a risk committee, except for the

	n	%
<b>Staff perception of patient safety quality</b>		
Excellent	12	5.6
Very good	40	18.7
Good	127	59.3
Poor	34	15.9
Failing	1	0.5
<b>Number of events reported</b>		
No event reported	161	75.2
1–2	29	13.6
3–5	9	4.2
6–20	8	3.7
More than 20	7	3.3

**Table 2.** Staff perception of patient safety quality and number of reported adverse events during the last 12 months.

Items of patient safety culture dimensions in the primary healthcare centers	Average positive response (%)
<b>D1: Overall perceptions of safety</b>	<b>52.45</b>
Patient safety is never sacrificed to get more work done	61.2
Our procedures and systems are good at preventing errors from happening	57
It is just by chance that more serious mistakes do not happen around here	53.3
We have patient safety problems in this facility	38.3
<b>D2: Frequency of events reported</b>	<b>31.43</b>
When a mistake is made, but is caught and corrected before affecting the patient, it is reported...	33.6
When a mistake is made, but has no potential to harm the patient, it is reported...	28
When a mistake is made that could harm the patient, but does not, it is reported...	32.7
<b>D3: Supervisor/Manager expectations and actions promoting patient safety</b>	<b>51.25</b>
Manager says a good word when he/she sees a job done according to established patient safety procedures	54.7
Manager seriously considers staff suggestions for improving patient safety	51.4
Whenever pressure builds up, my manager wants us to work faster, even if it means taking shortcuts	49.1
My manager overlooks patient safety problems that happen over and over	49.8
<b>D4: Organizational learning and continuous improvement</b>	<b>45.01</b>
We are actively doing things to improve patient safety	64.5
Mistakes have led to positive changes here	58.9
After we make changes to improve patient safety, we evaluate their effectiveness	72
We are given feedback about changes put into place based on event reports	10.3
We are informed about errors that happen in the facility	34.1
In this facility, we discuss ways to prevent errors from happening again	30.3
<b>D5: Teamwork within units</b>	<b>71.47</b>
People support one another in this facility	68.2
When a lot of work needs to be done quickly, we work together as a team to get the work done	80.8
In facility, people treat each other with respect	70.1
When one area in this unit gets really busy, others help out	66.8
<b>D6: Communication openness</b>	<b>44.56</b>
Staff will freely speak up if they see something that may negatively affect patient care	53.3
Staff feel free to question the decisions or actions of those with more authority	29.9
Staff are afraid to ask questions when something does not seem right	50.5
<b>D7: Non-punitive response to error</b>	<b>35.36</b>
Staff feel like their mistakes are held against them	34.6



Items of patient safety culture dimensions in the primary healthcare centers	Average positive response (%)
When an event is reported, it feels like the person is being written up, not the problem	42.1
Staff worry that mistakes they make are kept in their personnel file	29.4
<b>D8: Staffing</b>	<b>38.43</b>
We have enough staff to handle the workload	50.5
Staff in this facility work longer hours than is best for patient care	19.6
We work in 'crisis mode' trying to do too much, too quickly	40.2
<b>D9: Management support for patient safety</b>	<b>50.22</b>
Management provides a work climate that promotes patient safety	47.2
The actions of management show that patient safety is a top priority	55.1
Management seems interested in patient safety only after an adverse event happens	41.6
Units work well together to provide the best care for patients	57
<b>D10: Teamwork across units</b>	<b>44.23</b>
There is good cooperation among units that need to work together	49.5
Units do not coordinate well with each other	41.6
It is often unpleasant to work with staff from other units	39.7
Things 'fall between the cracks' when transferring patients from one unit to another	36
Important patient care information is often lost during shift changes	59.8
Problems often occur in the exchange of information across units	38.8

**Table 3.** Scores and items of the 10 dimensions of safety culture (n = 214).

dimension of "Frequency of adverse events reported," which was significantly higher among professionals involved in risk management committees ( $p = 0.01$ ).

## 4. Discussion

Recently, patient safety in primary care has been given increasing attention [12]. Due to the fact that many studies who have investigated the quality of care in primary healthcare settings, have detected a high level of AEs leading to miserable and lethal consequences [14, 15].

Moreover, it is directly accessible to patients and consists of several professions such as general practice, dental care, physiotherapy, and midwifery. Indeed, this study is the first to assess PSC in Tunisian PHC. It was carried out in urban and rural PHC of the listed cities. A high participation rate (85%) (n = 214) was acceptable and run counter to the results from previous studies [13, 14].



The dimension of “overall perception of patient safety” had a score of 52.45%. This reflects the lack of security of care in these PHC and the need to implement corrective measures to increase awareness of this issue among professionals.

Our results reveal that the dimension of “teamwork within units” had the highest score (71.47%) and this statement was similar to what was found in literature [2, 9, 13, 14]. However, it was developed in almost all the studies in PHC [2, 9, 11, 13] and this may be due to the fact that PHC are small buildings with less staff compared to hospitals and an unsophisticated environment, which are the factors that encourage teamwork [15]. Actually, teamwork is known as a dynamic process of healthcare professionals with complementary backgrounds and skills sharing common health goals and exercising concerted efforts in patient care through interdependent collaboration and shared decision-making through open communication, which is critical to teamwork [16].

Concerning the dimension of “communication openness,” it was an area of concern in studies in Kuwait and Turkey [2, 9]. Responses have shown that professionals were not encouraged to express disagreement or to say alternative viewpoints. In a recently published study, only 28% of the staff members dared to speak with their superior regarding their concerns about the risk of a planned measure while the other staff members remained silent. In nearly 90% of the cases, the silence led to a near miss [17–19].

As a matter of fact, openness, in general, is found to be a problem in low-resource countries. Disagreement and criticism against supervisors or team members are frequently interpreted as blame or as a fight against them and may lead to loss of personal relationship or career, so most employees tend to avoid it [3].

According to literature, failures in teamwork and communication lead directly to compromised patient care, staff distress, tension, and inefficiency, make a substantial contribution to medical error [21].

Results of the current study show that all safety culture dimensions are potential areas for the improvement but with prioritization; there are three safety dimensions with very low scores and need to be considered of high priority. These dimensions are “frequency of adverse events reported” (31.43%), “nonpunitive response to errors” (35.36%), and “staffing” (38.43%). These results go hand in hand with several studies [9, 17].

Patient safety is a center of interest in healthcare, internationally, and error reduction can be improved by reporting and learning from errors [22]. A very low positive response for event reporting is expected in primary care because it is known to lack standardized reporting systems and reporting culture [20, 24]. Although primary care may imply lower risks compared to hospitals, the large volume of contacts in this sector suggests that safety incidents can be expected to occur [23].

Also, this underreporting can be explained by the fact that the commission of error is always considered as a lack of skill and rarely seen as a learning opportunity. A number of barriers exist to reporting, including insufficient time to report, lack of feedback, fear of blame, and damage to reputations and patient confidence in a competitive environment [24]. Here, we highlight the dimension of “nonpunitive response to error,” which as mentioned above, has the second lowest score.

These two dimensions appear to be closely related to each other because of the “blame and shame” culture and the punitive environment where failure is punished or concealed and people refuse to acknowledge that problems do exist [9, 13].

Actually, we found that among all participants working in 30 different PHC, 75.2% of them declared that they did not report any event in the last 12 months in their facilities. And it is only normal that in this punitive culture, people will not be willing to report AEs due to the fear of blame and obstruction of any possibility to learn from error.

In this study, the only dimension influenced by one associated factor was “frequency of adverse events reported.” In fact, participants who were engaged in risk management committees had a significant higher score of this dimension (21.81 vs 40.19%,  $p = 0.01$ ). This finding goes hand in hand with results from the PSC survey that was conducted in operating rooms in Tunisia [17].

Actually, risk management describes a dynamic process that includes all measures for systematic identification, analysis, assessment, surveillance, and control of risks. An effective risk management should not start only after the evaluation of an incident but when failure can still be avoided and damage can be prevented. A successful example of effective risk management is the World Health Organization’s safe surgery checklist,” which is the most prevalent example of a standardized information exchange aimed at preventing patient harm due to information deficit [25].

This study provides an overall assessment of safety perceptions among PHC staff. Based on its reflections, we recommend a systematic improvement of staff qualification by providing training opportunities and educational interventions to promote a better understanding of the principles of teamwork, help staff acknowledge each other’s roles and perspectives, and develop effective communication strategies. Moreover, regarding the underreporting, if incident reporting process is perceived as a supportive and formative opportunity, and where protected time is allocated to discuss incidents, then professionals are willing to participate. That is why it is essential to establish a culture where individuals are supported to identify and report errors without threat of punitive action or blame.

Also, we recommend the implementation of continuous training programs concerning risk management and patient safety guides. As well, we find it useful to introduce a medical curriculum safety culture in the educational programs of undergraduate healthcare professionals. Actually in 2011, the WHO published the “Multi-professional Patient Safety Curriculum Guide” with 11 themes related to patient safety to be integrated into healthcare universities [26].

One of the study’s limitations was that the instrument tool used was, actually, developed for use in hospitals setting and not for PHC [16]. The assessment of PSC using a self-administered questionnaire can be associated with a declaration bias. Indeed, self-administered questionnaire may influence the reaction of those who, for fear of reprisal or prosecution, will give social answers that do not reflect reality. Furthermore, HSOPSC does not calculate an overall score of PSC. The validation of such score is complex and raises the problem of choosing the dimensions to be considered and their weightings.

In conclusion, the study findings demonstrate that none of PSC dimensions is developed in our PHC. We highlighted different areas of concern such as “frequency of adverse events reported,” “nonpunitive response to error,” and “staffing.” It also shed the light on the lack of reporting in primary care due to the punitive culture regarding errors.

More attention should be paid to PSC in primary healthcare because changing values and attitudes needs time and motivation through training and improving risk management skills within healthcare providers. Also, as well, the results obtained bring up the necessity of the implementation of quality management system in Tunisian primary healthcare centers.

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