

## Patient safety culture of nurses in public and private hospitals in northwestern Saudi Arabia



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### ABSTRACT

Several studies have been published focusing on the patient safety culture of nurses around the world and in the Kingdom of Saudi Arabia. However, comparative studies between the safety cultures of nurses in public and private hospitals in Saudi Arabia have not been updated yet since 2008, more than a decade ago. This study determined the patient safety cultures of nurses in public and private hospitals in a city in northwestern Saudi Arabia. A cross-sectional study designed was used and the survey tool was derived from the Hospital Survey on Patient Safety Culture. It was distributed to nurses both in public and private hospitals. A total of 441 nurses from four public and three private hospitals participated in the study. The study was conducted from December 2018 to March 2019. Along with the 12 composites of the Patient Safety Culture survey tool, there was no significant difference between the responses of the participants from public and private hospitals except for two composites which are the 9<sup>th</sup> composite (Teamwork Across Units) and 11<sup>th</sup> composite (Handoff and Transitions) having a p value of 0.899 and 0.989, respectively. Clearly, there are differences in some aspects of hospital guidelines between private and public hospitals. The difference in management and operational strategies between these two different institutions affects how their processes flow, thus affecting patient care provisions and safety as well. Both private and public hospitals in Saudi Arabia uphold and abide to the same guidelines on patient safety culture. Nurses are aware, regardless of the classification of their hospital, towards patient safety standards.

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### 1. Introduction

Today's healthcare systems are looking into the critical role of patient safety in improving healthcare services and preventing hospital-related errors (Gartshore et al., 2017). Patient safety as an indicator of accepted standard of care is now the hallmark of best clinical practice, and yet development on this aspect is taking a slow pace (Suliman et al., 2017).

The primary barriers in ensuring and achieving a sustainable patient safety culture among hospitals are adverse events such as medical malpractice and medication errors. In Saudi Arabia alone, adverse events related to clinical malpractice remain the most occurring medical error related to patient safety (Alharbi et al., 2019). The incidence of medical

errors and litigations involving medical malpractice have been increasing in this country. Despite the critical incidents from these errors, few cases have been resolved while the remaining larger incidents remained unsolved (Aljarallah and Alrowaiss, 2013).

In many parts of the world, the need to determine the state of patient safety has become an urgent need. The Hospital Survey on Patient Safety Culture (HSOPSC) was released in January 2016 by the Agency for Healthcare Research and Quality (AHRQ). Several studies were undertaken to determine the attitude, perception, and awareness of patient safety culture across the world using tools such as the AHRQ survey.

Several countries across the world have since used the tool to determine the perceived patient safety cultures of their workforce—especially with nurses, which comprise the largest healthcare team in any hospital. Studies were undertaken in Latin America (Arrieta et al., 2018; Carvalho et al., 2017; Mir-Abellan et al., 2017), the Middle East and East Asia (Abdi et al., 2015; Al Malki et al., 2018; Alquwez et al., 2018; Pelzang and Hutchinson, 2018; Pelzang

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et al., 2017; Ramos and Calidgid, 2018), the USA and North America (Hickner et al., 2016; Smith et al., 2017; Sorra et al., 2014), Europe (Cappelen et al., 2016; Moghri et al., 2012), and Australia and the Pacific (Taylor et al., 2016; Usher et al., 2017).

Cases involving medical errors and patient safety have been increasing in Saudi Arabia for the past 8 years (Al-Saeed, 2010; Alharbi et al., 2019; Awad et al., 2016; Henary et al., 2012), and yet few have been litigated and given a final verdict. In the United Kingdom, the financial compensation for the victims of medical errors is high compared to Saudi Arabia; thus, there is a need for Saudi Arabia to reform the laws that govern hospital-related errors to protect their patients (Alkhenizan and Shafiq, 2018).

There are four studies on patient safety culture conducted in the Kingdom of Saudi Arabia to date that focused on the oncology department (Alharbi et al., 2018), determined the perceptions of three hospitals in Saudi Arabia (Alquwez et al., 2018), or determined the pattern of patient safety from 2012 to 2015 (Alswat et al., 2017). Another study focused on the patient safety perception of nurses in one hospital in Riyadh, Saudi Arabia (Aboshaiqah and Baker, 2013). No study since 2008 has compared the safety culture of nurses working in private and public hospitals in the Kingdom.

Only one study so far has compared the patient safety culture between private and public hospitals. Conducted in Peru, the study showed a wide gap between the perceived patient safety of private and public hospitals, and that patient safety is observed better in private hospitals compared with public hospitals in all twelve composites of the HSOPSC (Arrieta et al., 2018).

## 2. Methods

### 2.1. Aim

The study aimed to a) determine the demographic profile of the participants as to gender, nationality, position, area of assignment, provision of direct care, educational attainment, total years in the hospital and in the unit of current assignment, number of work hours in a week, total years of experience and the classification of the hospital the participants are currently employed; b) what are the perceived patient safety culture of the participants when grouped according to the hospital classification either as private or government hospital.

### 2.2. Method

This is a cross-sectional study using a survey method. It included four government hospitals and three private hospitals. Out of a total of 550 questionnaires distributed (300 in government hospitals and 250 in private hospitals), 441 (80.18%) completely answered questionnaires were retrieved.

### 2.3. Sampling

Systematic sampling was used to determine the number of participants to ensure that all units and wards in all the hospitals were represented and counted. Further, systematic sampling ensured that there is an equal proportion of participants from the government and private hospitals, given that the population of nurses in government hospitals is almost double that of private hospitals. Data were collected from December 2018 to March 2019 from all nurses in different hospitals.

### 2.4. The participants

To meet the study's inclusion criteria, participants had to be staff nurses (either bedside or administrative) and have a moderate to excellent command of the English language. Participants could be of any nationality, gender, and age. Nurses who were on their shifts during data collection and had implied participation by answering the questionnaire were considered as participants. Responses that were complete and accurate were counted in the total sample number.

### 2.5. Locale

The participants were recruited from both governments funded and private hospitals in the city of Hail, Saudi Arabia. There are a total of 5 government hospitals and 5 private hospitals that were included in this study. Permission was obtained from the chief nurses of the hospital and when it was given, the distribution of the questionnaire commenced. Prior to distribution, the total number of nurses in each hospital was first determined to ensure enough sample and that all units and wards in the hospital were represented, including those in administrative works.

### 2.6. The tool

The AHRQ's Hospital Survey on Patient Safety Culture (HSOPSC) was utilized as the primary survey tool for this study. The tool is composed of three parts. The first is the consent form that asks for the voluntary participation of the participants. The second is the demographic profile of the participants, and the third is the HSOPSC questionnaire. The English version of the tool was distributed to the subjects. The study sample, which included Saudi and non-Saudi nurses (such as from the Philippines and India), had a moderate to excellent command of the English language, and thus translating the survey to the Arabic version was not necessary. Additionally, the communications in the hospital within and across units, endorsement, and nurses' notes are in the English language. However, the tool was translated in many languages such as Turkish (Bodur and Filiz, 2010), Farsi (Moghri et al., 2012), Norwegian (Moghri et al., 2012), Chinese (Lin

et al., 2017), Italian (Tereanu et al., 2017), and Romanian (Tereanu et al., 2018).

The questionnaires were given near the end of the shift or right after, when endorsements were finished, so as not to disturb the normal workflow in the hospital. The data collection period was divided among all the hospitals to ensure they were all covered. In each hospital, researchers collected the data at various shift timings until all the nurses' shifts were covered. A time allotment of 15-20 minutes was provided for answering the questionnaires. Time extensions were given as desired and needed by some participants. When data collection was over, all the questionnaires were retrieved and read, and accuracy and completeness of responses were determined.

The survey has 42 items distributed in twelve composites that determine the practice of safety culture across and within units of the hospital, continuous monitoring and communication about issues related to patient safety, and the role of supervisors in maintaining safe patient care. Some questions asked about the subjects' overall rating of the patient safety of their units and determined how many incidents involving patient safety have occurred in a year. Participants chose based on their appraisal of the items from a 5-point Likert scale ranging from 1= "strongly disagree" to 5= "strongly agree," or in some items, 1= "never" to 5= "always." Some items are worded positively while others are negatively phrased.

In the construction of the tool, the Cronbach's alpha was established from a score range of 0.63 to 0.84 (Sorra and Dyer, 2010). The psychometric analysis of the tool was established in various studies conducted, such as in Jordan where the positive responses to the twelve dimensions of safety culture ranged from 20.0% to 74.6% (Suliman et al., 2017), and in Saudi Arabia, the tool was graded as excellent by 60% of the participants, and 33% considered it acceptable (Alahmadi, 2010).

## 2.7. Ethical clearance

Ethical clearance for the conduct of the study was provided by the Ethics Committee. The approval in each hospital was provided by the chief nurse upon presentation of documents stating the benefit-risk ratio, the questionnaire explaining the rights of the participants, the contents of the questionnaire, and the significance of the study to the participants, hospital, and nursing profession. The chief nurses signed the consent sheet as an approval of the conduct of the study and the date it was approved.

## 2.8. Analysis of data

The Statistical Package for Social Sciences 22 (SPSS-22) was utilized in deriving the results. To answer the first objective, frequency and percentage of the participants' profiles were used to illustrate the results. For the second objective, which were to determine the significant difference between the

participants' responses to the survey tool when classified by hospital type according to the twelve composites and to determine if there is a significant difference between the participants' responses to the survey tool when classified by hospital type and selected demographic profile, respectively, a t-test of independent samples was utilized.

## 3. Results and discussion

### 3.1. Results

A total of 441 nurses participated in this study. Table 1 shows the demographic profiles of the participants. Most of the participants were women (89.3%), and 10.7% of them were men. In terms of nationality, 70.3% were Non-Saudi's, and most of them were from the Philippines, followed by nurses from India. The remaining 29.7% were Saudi nurses. Regarding position or rank in the hospital, 78.9% were bedside nurses across different wards and units while the remaining 21.1% held administrative positions. For work or area of assignments, around half of the participants (49.2%) were working in wards while 32.4% were assigned to special units, and 18.1% carried out administrative works. With regard to the provision of direct care, 87.1% provided direct patient care, and this is congruent with the data since almost 80% of the participants are bedside nurses. Regarding the highest educational attainment in nursing, 90.1% were baccalaureate or bachelor's degree holders; 6.1% had finished a diploma course; and 2.9% had a master's degree. With regard to their work experience as a nurse in the current hospital, 52.2% had worked for 1-5 years, 16.6% for 6-10 years, 6.1% for 11-15 years; and 24.5% had less than one year's experience in the hospital. A very small percentage (0.7%) had worked 16-20 years.

In terms of the number of years in their current work or area of assignment, 50.6% had been there for 1-5 years, 15.2% for 6-10 years, and 2.5% for 11-15 years; 31.7% had less than one year of experience in their current unit. For the number of work hours per week, the majority of the participants (81.6%) were working 41-60 hours per week, followed by 20-40 hours (5.4%), 61-80 hours (1.8%), and less than 20 hours (0.7%). Regarding total work experience as a nurse, the majority had been nurses for 1-5 years (43.3%), followed by 6-10 years (37.4%), 11-15 years (7.3%), 16-20 years (4.5%), and more than 20 years (4.1%). A small portion (3.4%) had less than a year of work experience as a nurse. The majority of the nurses were working in government hospitals (68.7%), while 31.3% were in private hospitals.

Table 1 shows the significant difference between government and private hospitals in relation to the twelve composites. All except composite nine, "Teamwork across Units," showed a significant difference with an SD of 0.44 for government and 0.47 for private hospitals, a t-value of -0.128, and a p value of 0.899.

**Table 1:** Demographic profiles of the participants; N=441

Profile Variables	Frequency	Percentage
<b>Gender</b>		
Male	47	10.7
Female	394	89.3
Total	441	100.0
<b>Nationality</b>		
Saudi	131	29.7
Non-Saudi	310	70.3
Total	441	100.0
<b>Position/Rank</b>		
Bedside Nurse	348	78.9
Administrative Position	93	21.1
Total	441	100.0
<b>Work/Area of assignments</b>		
Wards	217	49.2
Special Units	143	32.4
Administrative Work	80	18.1
Total	441	100.00
<b>Provides direct care</b>		
Yes	384	87.1
No	57	12.9
Total	441	100.0
<b>Highest educational attainment</b>		
Diploma	27	6.1
Baccalaureate	401	90.9
Masters	13	2.9
Total	441	100.0
<b>Total years in the hospital</b>		
Less than 1 year	108	24.5
1-5 years	230	52.2
6-10 years	73	16.6
11-15 years	27	6.1
16-20 years	3	.7
Total	441	100.0
<b>Total years in the unit (Work/Area of assignment)</b>		
Less than 1 year	140	31.7
1-5 years	223	50.6
6-10 years	67	15.2
11-15 years	11	2.5
Total	441	100.0
<b>Number of work hours/week</b>		
Less than 20 hours	8	1.8
20-40 hours	46	10.4
41-60 hours	360	81.6
61-80 hours	24	5.4
81-100 hours	3	.7
Total	441	100.0
<b>Total experience as Nurse</b>		
Less than 1 year	15	3.4
1-5 years	191	43.3
6-10 years	165	37.4
11-15 years	32	7.3
16-20 years	20	4.5
More than 20 years	18	4.1
Total	441	100.0
<b>Classification of the hospital</b>		
Government	303	68.7
Private	138	31.3
Total	441	100.0

### 3.2. Discussion

This study was primarily conducted for two reasons: First, to determine the demographic profiles of the nurses in both public and private hospitals in a city located in Northwestern Saudi Arabia based on the HSOPSC tool and second, to determine the difference between the responses of the nurses in public and private hospitals.

Previous studies on patient safety among government and private hospitals were either done more than a decade ago or have not focused much attention on hospitals in the gulf region. In Peru,

there is a big difference between patient safety culture among private and public hospitals and this is due to several factors such as financial constraints and the number of people served (Arrieta et al., 2018). In Saudi Arabia, the last published study on the patient safety of public and private hospitals was conducted in 2008 among hospitals in Riyadh City, the capital of the Kingdom, more than a decade ago. The study found that government hospitals need to improve in the areas of handoffs and transitions, communication openness, staffing, and non-punitive response to error while the private hospitals must focus on improvement in staffing and non-punitive response to errors (Al-Ahmadi, 2009).

Table 1 illustrates the demographic profile of the participants in this study. It shows that most of the participants were women. For many years, the nursing profession has been women dominated, and there are factors that impact this trend unless the academic and clinical environment diversify to cater to the needs of male students who choose to become nurses (Ndou and Moloko-Phiri, 2018). There are more expatriate nurses working in Saudi Arabia compared to citizens. One primary reason for this is the role of women in the society. Compared to men, women are not common in the workplace among Saudi industries and organizations, and the influx of foreign workers, especially in the healthcare field, is attributed to this phenomenon (Alosaimi and Ahmad, 2016).

Most of the participants were engaged in bedside care, which is a fundamental responsibility of nurses. However, in recent years, most nurses are taking up different responsibilities in the hospital, and the need to preserve the role of bedside nursing is crucial to the development of the profession to be more humane and caring (Nazarko, 2016). This is supported by the other variable where participants in the study who provide direct patient care are compared to those who are not. However, there are many predicaments faced by nurses who provide direct care to patients. The cause of these problems are associated with the personal and social factors affecting bedside nurses (Barbe et al., 2018). It is apparent in the results that most of the nurses are working in the units and wards for one to five years. This is also true of the majority, who have a total nursing work experience of no more than five years. Studies show that younger nurses are more dynamic compared to older ones (Parsons et al., 2018). Younger nurses find new perspectives and meanings in their organization to become more participative. This will reflect in their performance towards care provision (Harmoinen et al., 2014).

Table 2 shows the difference in the perceptions of nurses on patient safety across all twelve composites. All except composite nine, "Teamwork across Units," showed a significant difference between private and government hospitals. In order to provide the best care to patients, different units and departments in the hospital should work in a manner that supports the others. This will ensure that patient safety is maximized, quality of patient

care is increased, and clinical-related adverse scenarios are reduced (Epstein, 2014). When there is teamwork across units, missed nursing care can be reduced as well, since team members check what has been missed by others (Chapman et al., 2017). Clearly, there are differences in some aspects of hospital guidelines between private and public hospitals. The difference in management and

operational strategies between these two different institutions affects how their processes flow, thus affecting patient care provisions and safety as well. There are definitely significant differences between the policies of government-owned and private hospitals that must be considered (Handayani et al., 2016).

**Table 2:** Type of hospital and their responses to the 12 composites; N=441

Composite	Type of hospital	N	Mean	SD	t	df	p-value	Interpretation	
1	Teamwork within units	Public	303	3.47	0.92	-1.34	306.7	.180	no significant difference
	Private	138	3.59	0.79					
2	Supervisor/manager expectations and actions promoting safety	Public	303	3.19	0.52	.647	439	.518	no significant difference
	Private	138	3.15	0.57					
3	Organizational learning-continuous improvement	Public	303	3.85	0.47	-1.59	439	.112	no significant difference
	Private	138	3.92	0.41					
4	Management support for patient safety	Public	303	3.25	0.34	.583	439	.560	no significant difference
	Private	138	3.23	0.39					
5	Overall perceptions of patient safety about error	Public	303	3.27	0.47	-.015	439	.988	no significant difference
	Private	138	3.27	0.55					
6	Feedback and communication	Public	303	3.83	0.41	1.197	439	.232	no significant difference
	Private	138	3.78	0.43					
7	Communication openness	Public	303	3.33	0.45	2.033	439	.043	no significant difference
	Private	138	3.23	0.49					
8	Frequency of events reported	Public	303	3.47	0.88	.613	439	.540	no significant difference
	Private	138	3.41	0.96					
9	Teamwork across units	Public	303	3.52	0.44	-1.28	439	.899	significant difference
	Private	138	3.53	0.47					
10	Staffing	Public	303	2.74	0.46	.479	439	.633	no significant difference
	Private	138	2.72	0.47					
11	Handoff and transitions	Public	303	3.27	0.71	.014	439	.989	significant difference
	Private	138	3.27	0.72					
12	Non-punitive response to error	Public	303	2.69	0.64	.683	439	.495	no significant difference
	Private	138	2.64	0.59					

#### 4. Conclusion

The results of the study showed that between private and government hospitals, when compared according to the twelve composites of the HSOPSC, there is no difference except for "Teamwork across Units." The implication of this outcome is that private and government hospitals in Saudi Arabia are congruent in many, if not all, aspects of patient safety. The congruency in these areas of patient safety is advantageous for patients since the quality of care received, and not the degree of safety, are maximized regardless of the classification of hospitals. It also denotes that government hospitals are not left behind in terms of safety standards. Generally, patients will choose government hospitals for their health concerns since health care and treatment is free for all citizens in Saudi hospitals (MOHS, 2019). The Ministry of Health also directed Private Corporation who hired expatriate workers to the Kingdom to procure health insurance for their workers. Pilgrims are also entitled to the same health benefits (MOHS, 2019).

#### Compliance with ethical standards

#### Conflict of interest

The authors declare that they have no conflict of interest.

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