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Using Performance to Determine the Quality of Healthcare

Mahdi Jari Alharthi, Wael Ahmed Abdullah Alghamdi, Abdulrahman Awad Alshehri, Ali Mohammed Salem Alqarni, Waleed Ibrahim Khawaji, Abdulaziz Abdurhman Almugren, Awad Jarallah N Alkaabi, Hamed Saad Alqarni, Saeed Mohammad Ali Alqarni, Hisham Abdulrahman Aloshaywan, Ahmed Shadad Alanazi, Saad Othman Almuqri

Corresponding Author: Mahdi Jari Alharthi

Ministry of Health, Saudi Arabia

Abstract

Background: In recent years, the healthcare system has undergone rapid transformation. Nonetheless, a recent Quality and Patient Safety Report highlighted declining levels of patient safety and quality culture among healthcare professionals. This highlights the importance of assessing care quality and patient safety from the perspectives of both patients and healthcare professionals.

Objectives: This study sought to determine (2) which demographic factors are associated with overall quality of care and patient safety, as well as (1) patients' and healthcare professionals' perceptions of patient safety and overall quality of care standards at two tertiary hospitals.

Methods: The research design was cross-sectional. Data on two topics—overall quality of care and patient safety—were gathered using the Healthcare Professional Core Competency Instrument and the Revised Humane Caring Scale. Between the end of 2018 and the start of 2019, questionnaires were given out to patients (n = 600) and healthcare workers (n = 246) in three departments at two tertiary hospitals: medical, surgical, and obstetrics and gynecology. Binary logistic regression and descriptive statistics were used to analyze the data.

Results367 patients and 140 medical professionals completed the questionnaires, representing response rates of 61.2% and 56.9%, respectively. Overall, healthcare professionals gave higher ratings for patient safety (M = 4.39; SD = 0.675) and quality of care (M = 4.36; SD = 0.720) than did patients (M = 4.23; SD = 0.706) and the general public (M = 4.22; SD = 0.709). The research discovered a relationship between hospital characteristics and overall healthcare quality (OR = 0.095; 95% CI = 0.016-0.551; p = 0.009) as well as patient safety (OR = 0.153; 95% CI = 0.027-0.854; p = 0.032) among medical staff. Additionally, a relationship between the admission/work area and the participants' perceptions of the quality of care was found (patients: OR = 0.257; professionals: OR = 0.093; 95% CI = 0.009-0.959; p = 0.046).

Conclusions: With only minor differences, patients and healthcare professionals both rated the quality of care and patient safety as excellent, demonstrating high patient satisfaction and skilled healthcare delivery personnel. These viewpoints can provide beneficial and complementary insights into how to raise the general bar of healthcare delivery system standards.

Keywords: perspective of the patient, perspective of the healthcare provider, Care quality, patient safety, quantitative analysis

I. Background

Unquestionably, the two main objectives of the world's top healthcare systems are quality of care and patient safety [1-3]. Regulators and policymakers in the healthcare industry continue to place a high priority on these objectives [4]. The Department of Quality and Patient Safety was established in regional hospitals by the Ministry of Health (MOH) in 2007 [5] to implement a quality assurance strategy. In order to advance an inclusive and integrative healthcare system, it also implemented the Patient Safety Friendly Hospital

Initiative (PSFHI) in 2015 [6]. By lowering child and maternal mortality rates by 72% and 55%, respectively, from 1990 to 2013, these initiatives have significantly improved healthcare outcomes [5, 7].

A recent Report of Quality and Patient Safety (RQPS) revealed a declining level of patient safety and quality of care culture among healthcare professionals (HCPs), despite the World Health Organization (WHO) ranking the healthcare system as one of the top ten in the world in 2012 [8,] The report promoted a thorough evaluation of patient safety and care quality that took patients' and HCPs' (as service providers) points of view into account (as service users). The report claims that HCPs frequently manage service and delivery costs while concentrating on long-term and sustainable solutions [10]. From the perspective of healthcare providers, their core competencies and wider technical excellence frequently play a crucial role in the overall classification of quality of care and patient safety [3, 11–13].

Contrarily, patients favor momentary comforts [14]. They frequently base their opinions on the general healthcare system, the type of practice, and the personal and professional qualifications of the healthcare professionals [13, 15, 16]. This explains why international organizations like the Council of Europe (CoE) [17], the World Health Organization (WHO) [3], and the United States (US) Institute of Medicine (IOM) [18] stress the importance of including patients' perspectives on quality care in addition to providers' perspectives in order to strike the right balance between the two and offer additional insight into areas where change is necessary. Therefore, this study is a component of a larger study that aims to (2) identify participant characteristics most related to quality of care and patient safety, and (3) consolidate patients' and HCPs' (nurses and physicians') perspectives on quality of care and patient safety at two tertiary hospitals [19]. The results of this study will offer useful and complementary insights for raising the standards of the entire healthcare delivery system.

II. Methods

Study context

This study was carried out in Riyadh, the capital of Saudi Arabia, a high-income Arab nation with 24.6 million citizens [20]. Since 1970, it has experienced quick economic and social change, raising living standards. As of 2019, MOH had 1254 private clinics, 269 governmental health centers, clinics, and dispensaries, 50 hospitals, and 5049 beds. There were 6419 physicians and 14,491 nurses in total. With a nurse-to-doctor ratio of 2:1, there were 21 doctors and 44 nurses for every 10,000 people in the nation in 2019. The public and private sectors of the healthcare system combine to provide universal coverage for both locals and foreigners. Government-owned and -operated facilities are where the majority of healthcare is delivered; these facilities provide 83.1% of hospitals, 92.5% of hospital beds, 62.2% of all outpatient services, and 94.5% of all inpatient services, accounting for approximately 81.1% of total health expenditure (THE) [21].

Design

The study's cross-sectional design was used in its execution. Study reporting followed the STROBE (Strengthening the Reporting of Observational studies in Epidemiology) guidelines [22].

Sample and setting

Adult patients and all HCPs (nurses and doctors) from three departments—medical, surgical, and obstetrics and gynecology (OBG)—at two tertiary hospitals were included in this study (A and B). In the month between the end of 2018 and the beginning of 2019, data was gathered. For hospital "A" and hospital "B," where the effect size (d = 0.5), = 0.05 and N was 6155 (4094 from hospital "A" and 2061 from hospital "B") discharged patients at two hospitals, power analysis determined that at least 313 respondents were required [21]. Patient information was gathered from a convenience sample of 600 adult patients admitted to hospitals A and B. (400 and 200, respectively). The authors enrolled more participants than the bare minimum required sample size and increased participant follow-up and reminders in order to lessen the possibility of bias from convenience sampling.

HCPs were chosen through proportional stratified sampling from a group of 246 employees from the two hospitals, including 139 nurses and 107 doctors. The primary study data, which included all, were used to calculate the sample size for HCPs.

Study instruments

Two items—general quality of care and patient safety—that were included in the healthcare professional core competency instrument (HPCCI) and revised humane caring scale (RHCS), respectively, for patients and HCPs, were used to collect data for this study [23–25]. The aforementioned two items were developed by the authors and piloted as part of a larger study using convenience sampling of patients (n = 30) and HCPs (n = 56) at a tertiary hospital. The study also included the entire RHCS and HPCCI instruments. The HPCCI, which consists of 11 subscales with 81 items, was developed using valid and trustworthy tools, the use of which was authorized by the tools' developers. Experts in this study translated the RHCS, which consists of seven subscales with a total of 46 items each, from English to Arabic and back again. The pilot had no impact on the tool's requirements. A 5-point Likert scale was used to evaluate the two items on the questionnaires given to patients and HCPs (1 = Failing, 2 = Poor, 3 = Acceptable, 4 = Very Good, and 5 = Excellent). A score of 1 was thought to indicate poor levels of care quality and patient safety perceptions, while a score of 5 was thought to indicate excellent levels.

Data collection

The lead researcher worked closely with the research assistants from the two target hospitals, outlining the goals of the study and the procedure for gathering data. Over the course of a month, the research assistants distributed a variety of fact sheets and questionnaires to the patient and HCP target populations. Each unit was given a set of locked boxes to store the completed questionnaires in. In both institutions, research assistants reminded the target groups verbally throughout the study period. The study was open-ended, so participants could leave at any time.

Data analysis

To analyze the data, descriptive statistics were employed (frequency, percentage, mean value, and standard deviation). The parameter used to evaluate the general quality of care and patient safety was the statistical mean. The lowest possible score was a mean score of 1, and the highest possible score was a mean score of 5. On this scale, a mean score of 4 or higher was regarded as "excellent." Based on literature and the magnet hospital assessment scales, this value represents best practices, with a score of 4 indicating compliance with the magnet standards [26]. The relationships between the dependent variables (general quality of care and patient safety) and the independent variables were examined for both patients and HCPs using binary logistic regression analysis (demographic characteristics). 'Excellent or very good' was recorded as 1, and 'acceptable, poor, and failing' was recorded as 0. The variables for care quality and patient safety were dichotomized. The P value (P), odds ratio (OR), and 95% confidence interval (CI) of the OR were computed in this analysis to understand how the predictors were related to the outcomes. There were both multivariate and univariate analyses done. The data were examined using the computer program Statistical Package for the Social Sciences (SPSS version 27.0).

III. Results

Participants' demographic characteristics

The total patient response rate was 61.2% (367 out of 600 targets), with 149 patients from hospital B and 218 patients from hospital A (59.4% and 40.6%, respectively). A total of 140 out of 246 targets, or 56.9%, of HCPs responded, with 65 professionals (46.4%) from hospital A and 75 (53.6%) from hospital B. (Table 1). Less than 30% of the patients and over 50% of the staff were in their 30s and 40s, respectively. Females made up 58.5 percent

of patients and 75.5% of professionals, respectively. The majority of patients (93%) were citizens of the country, and the staff's response rate was marginally higher (3.6%) than that of foreign nationals.

Table 1 Participants' demographic characteristics

Patients				Healthcare Professionals			
		n	%			n	%
Hospital	A	218	59.4	Hospital	A	65	46.4
	B	149	40.6		B	75	53.6
				Profession	Nurse	84	60.0
					Physician	56	40.0
Age in (years)	< 30	119	35.6	Age in (years)	< 30	28	24.6
	30–40	94	28.1		30–40	59	51.8
	> 40	121	36.2		> 40	27	23.7
Gender	Female	210	58.5	Gender	Female	105	75.5
	Male	149	41.5		Male	34	24.5
Ethnicity	i	332	93.0	Ethnicity	i	72	51.8
	Non-i	25	7.0		Non-i	67	48.2
Living	Alone	39	11.3	Position	Clinician	84	78.5
	With family	305	88.7		Management	4	3.7
Education	Post-secondary school education	140	40.0		Both	19	17.8
	Basic level of education	210	60.0	Work experience	< 8 years	41	34.2
Occupational status	Un-employed	154	43.9		8–15 years	44	36.7
	Employed	159	45.3		> 15 year	35	29.2
	Retiree	38	10.8	Education	Diploma/resident	60/13	71.4/27.1
					Bachelor/specialist	23/34	27.4/70.8
					Master/adjunct	1/0	1.2/0
					Ph.D./docent	0/1	0/2.1
Admission area	Medical	117	34.7	Work area	Medical	34	25.0
	Surgical	156	46.3		Surgical	71	52.2
	Obstetrics and gynaecology	64	19.0		Obstetrics and gynaecology	31	22.8
Hospital admission	Planned	132	37.7				
	Emergency	218	62.3				
Reason of admission	Examination	47	13.3				
	Treatment	306	86.7				
Stay duration	<=5 Days	192	67.6				
	> 5 Days	92	32.4				

60% of the patients had a high school diploma, and about 89% of them lived with their families. 44% of them were unemployed, leaving about 45% of them in employment. The majority of health care professionals

(HCPs)—78.5%—worked at the bedside, with those who had dual responsibilities—clinical and management work—coming in second. There were several traits that respondents from each working group of HCPs had in common. About two-thirds of them had between eight and fifteen years of experience. Most nurses (71.4%) and doctors (70.8%) had diplomas as part of their educational background or credentials.

Nearly half of the patients (46.3%) and HCPs (52.2%) were in the surgical department, which was followed by the medical department. The majority of patients (87%), or nearly two-thirds (62.3%), were admitted as emergencies and chose treatment over an examination. 67.6% of patients, or two thirds, stayed in the hospital for fewer than five days. Participants' opinions on the standard of care and patient safety The perspectives of the participants on patient safety and standards for quality of care are summarized in Table 2. Patient safety (M = 4.22; SD = 0.709; HCPs: M = 4.39; SD = 0.675) and patient quality of care (M = 4.23; SD = 0.706; HCPs: M = 4.36; SD = 0.720) both received excellent ratings overall. However, there were significant differences between the participants' views on patient safety (p = 0.013).

Table 2 Participants' perspectives on quality of care and patient safety

Participants	Overall quality of care							Overall patient safety						
	N	M	SD	SE	P	95% CI		N	M	SD	SE	P	95% CI	
Patients	348	4.23	0.706	0.038	0.068	4.16	4.30	351	4.22	0.709	0.038	0.013	4.15	4.29
HCPs	140	4.36	0.720	0.061		4.24	4.48	140	4.39	0.675	0.057		4.28	4.50
Total	488	4.26	0.712	0.032		4.20	4.33	491	4.27	0.704	0.032		4.21	4.33

N Number of participants, *M* Mean, *SD* Standard deviation, *SE* Standard error, *P P* value, *CI* Confidence interval

the connection between patient safety, general healthcare quality, and demographic factors. A binary logistic regression analysis was used to examine the impact of the hospital, age, gender, ethnicity, and admission/work area on patient safety and overall quality of care. These particular variables were selected because they can be compared later and are available in both instruments (RHCS and HPCCI). Patients at hospital A were less satisfied with the standard of care than those at hospital B, according to Table 3 (OR 0.622; 95% CI 0.271-1.424; p = 0.261), but the difference was not statistically significant. HCPs at hospital A were 90% less satisfied with the quality of care (OR 0.095; 95% CI 0.016-0.551; p = 0.009) than those at hospital B. Men tended to rate the quality of care higher than women, though this difference was not statistically significant (OR 1.920; 95% CI 0.972-3.792; p = 0.060). The results showed that patients' and HCPs' satisfaction with the standard of care in the medical department was lower than that of the OBG department (p = 0.036 and p = 0.046, respectively).

The results of a binary logistic regression analysis were presented in Table 4 to see if patient and HCP demographics could be used to explain the overall findings.

Table 3 Binary logistic regression analysis of the quality of care

	Patients				Healthcare professionals			
	OR[a]	CI[b] of OR		P[c]	OR[a]	CI[b] of OR		P[c]
Hospital								
A	0.622	0.271	1.424	0.261	0.095	0.016	0.551	0.009
B	1	Ref.			1	Ref.		
Age in (years)								
< 30	0.860	0.408	1.813	0.692	0.131	0.010	1.707	0.121
30–40	1.901	0.755	4.791	0.173	0.148	0.014	1.606	0.116
> 40	1	Ref.		0.223	1	Ref.		0.269
Gender								
Male	1.920	0.972	3.792	0.060	1.496	0.255	8.790	0.656
Female	1	Ref.			1	Ref.		
Ethnicity								
	0.571	0.166	1.967	0.375	1.941	0.420	8.962	0.396
	1	Ref.			1	Ref.		
Admission/Work area								
Medical	0.257	0.072	0.916	0.036	0.093	0.009	0.959	0.046
Surgical	0.376	0.115	1.227	0.105	0.103	0.011	0.999	0.050
Obstetrics and gynaecology	1	Ref.		0.110	1	Ref.		0.119
Classification percentage correct	83.3%				84.5%			
2 Log likelihood	241.401[a]				72.160[a]			
Cox & Snell R Square	.076				.185			
Nagelkerke R Square	.126				.321			
Hosmer and Lemeshow	0.528				0.338			

[a]Odds ratio
[b]95% confidence interval of odds ratio
[c]p value (level of significance)

Standards for patient safety are thought to be very high. Patients' opinions of patient safety standards at the two hospitals did not differ in a way that was statistically significant, but those at hospital A were less satisfied than those at hospital B (OR 0.659; 95% CI 0.298-1.457; p = 0.303). In addition, HCPs at hospital A were 85% less satisfied than HCPs at hospital B with patient safety standards (OR 0.153; 95% CI 0.027-0.854; p = 0.032). Men tended to score significantly higher than women in terms of patient safety standards (OR 1.856; 95% CI 0.955-3.606; p = 0.068). The results showed that patients were less satisfied with safety in the medical department than in the OBG department (p = 0.066).

IV. Discussion

The study's two objectives were to first find out what patients and HCPs thought about the general standards of care and patient safety at two tertiary hospitals, and then to look into the correlation between demographic factors and general standards of care and patient safety. The study's key conclusions showed that patient safety and care quality were rated relatively highly, demonstrating qualified healthcare providers and a high level of patient satisfaction.

According to patients' opinions of the quality of care overall and patient safety, the results from the previous study show that both of these factors were rated as excellent (4.22 and 4.23, respectively). This shows that patients appreciated and were aware of HCPs' contributions to healthcare. This raises their level of satisfaction and confidence in the healthcare system and might even make them more open to trying new treatments and procedures. In turn, this might aid in hastening patient recovery and raising the overall value provided by each medical resource and intervention [27].

HCPs also gave excellent ratings for patient safety and care quality (4.39 and 4.36, respectively). This may be a reflection of HCPs' perceptions of themselves as competent experts who execute the quality assurance strategy and apply the Patient Safety Friendly Hospital Initiative (PSFHI) [4, 6].

It is important to note that HCPs rated both the quality of care and patient safety slightly higher than did patients. This result is in line with those of Miranda et al. [28], who discovered that healthcare professionals had greater confidence in their abilities. These elements could contribute to this optimism: First, due to linguistic and cultural barriers, patients might not voice their concerns about the care they receive; second, HCPs might think they deliver high-quality care [29]. This conclusion was supported by Zhao et al. [30], who noted that nurses thought they provided holistic care while patients thought that high-quality care interfered with their privacy and ability to sleep.

	Patients				Healthcare professionals			
	OR[a]	CI[b] of OR		P[c]	OR[a]	CI[b] of OR		P[c]
Hospital								
A	0.659	0.298	1.457	0.303	0.153	0.027	0.854	0.032
B	1	Ref.			1	Ref.		
Age in (years)]								
<30	0.967	0.483	2.022	0.929	0.273	0.022	3.348	0.310
30–40	1.623	0.683	3.859	0.273	0.399	0.038	4.226	0.445
>40	1	Ref.		0.445	1	Ref.		0.589
Gender								
Male	1.856	0.955	3.606	0.068	1.184	0.197	7.117	0.853
Female	1	Ref.			1	Ref.		
Ethnicity								
	0.560	0.163	1.929	0.358	0.876	0.171	4.481	0.873
	1	Ref.			1	Ref.		
Admission/work area								
Medical	0.331	0.101	1.077	0.066	0.289	0.027	3.083	0.304
Surgical	0.435	0.147	1.288	0.133	0.167	0.018	1.579	0.118
Obstetrics and gynaecology	1	Ref.		0.185	1	Ref.		0.275
Classification percentage correct	82.3%				88.2%			
-2 Log likelihood	254.335[a]				66.644[a]			
Cox & Snell R Square	.065				.114			
Nagelkerke R Square	.107				.220			
Hosmer and Lemeshow	1.000				0.249			

[a]Odds ratio
[b]95% confidence interval of odds ratio
[c]p-value (level of significance)

This study's binary logistic regression analysis revealed a relationship between hospital, age, gender, ethnicity, and admission/work area factors and overall patient safety and quality of care. The overall standard of care and patient safety were rated higher by HCPs at hospital B than by HCPs at hospital A. The fact that hospital A is a specialized facility for medical and chronic cases with protracted hospital stays may be the cause of the higher workload there.

The results of this study demonstrated a significant variation in the general standard of care provided to patients and HCPs in the medical division. This outcome is consistent with Abuosi's research [31], which found that patients and nurses had different perceptions of quality care due to how they defined and understood it.

This study offers important new information about how patients and HCPs view patient safety and healthcare quality. Such information can be helpful for projects the MOH is working on now and in the future that are in line with the Sultanate's Health Vision 2050 [41].

V. Strengths and limitations

The positive results may be explained by the fact that healthcare institutions have been implementing quality assurance and patient safety strategies for a number of years. This should especially inspire nations that haven't started using these tactics yet. There are, however, some restrictions on this study. First of all, it focused on just two factors: overall quality of care and patient safety, as well as how those factors related to demographic traits. Second, the study's generalizability might be constrained by the fact that data were only gathered from three departments at two hospitals. The response rate for both target groups could have been higher, though it was acceptable [32, 33]. Third, considering how broad the concepts of quality of care and patient safety are and how many different variables can affect them, only using self-assessment techniques is not sufficient. Interviews and focus groups with patients and HCPs would therefore give researchers more information about this subject.

VI. Conclusions

This study examined how patients and healthcare professionals view the standard of care and patient safety. In comparison to magnet hospital standards, both patients and HCPs rated the quality of care and patient safety as excellent. Patients are therefore happy with the levels of the healthcare delivery system and acknowledge and value the medical services they receive. This might also suggest that HCPs employ suitable quality assurance techniques and strategies and have a wide range of core competencies.

The overall standard of care and patient safety were influenced by factors in the hospital and the admission/work area. To better align healthcare delivery models with the health Vision 2030, these viewpoints can be applied.

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