

# Patient Satisfaction: Comparative Study Between Pre-Hospital Accreditation and Post-Hospital Accreditation

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## ABSTRACT

The patient has a legitimate role in evaluating the healthcare services provided to them; this evaluation can be measured through patient satisfaction, which is considered an effective tool to evaluate the provided services and the quality program for hospitals. This study aims to examine the association between patient satisfaction and hospital accreditation status. Cross-sectional design with a random sampling technique for adult hospitalized patients. The SERVQUAL instrument was utilized to measure the patient's satisfaction. The sample size included 800 patients from the two phases based on the inclusion and exclusion criteria. The obtained data was analyzed using SPSS version 26. The study revealed that patient satisfaction was high both before and after accreditation. The order of the patient satisfaction dimensions was as follows: assurance, reliability, tangibles, responsiveness, and empathy. The highest subscale in this phase was assurance, with a mean of (4.49), and the lowest score was empathy, with a mean of (4.25). In the pre-accreditation phase, reliability was the highest subscale, with a mean of (4.46), and the lowest score was responsiveness, with a mean of (4.13). In addition, the study revealed that there is an association between the satisfaction subscales (tangibles, responsiveness, and assurance) and accreditation status, except for reliability and empathy. The study concludes that the high level of satisfaction in the post-accreditation phase may relate to the high level of patient care standards and safety environment implemented in the hospital as requirements of accreditation, which gives evidence that the hospital accreditation status had a positive impact on patient satisfaction.

**KEYWORDS:** Patient satisfaction; Accreditation status; Hospitalized patients.

## 1. Introduction

The patient's opinion is one important aspect of the patient-centered concept [1], which can be implemented by patient engagement in the treatment plan as an essential part of the patient's rights [2]; the patient's wishes, needs, or expectations are important elements in the treatment journey and care process which improve the patient's judgment of the journey [3]. This opinion can be measured by different methods, such as patient satisfaction and patient experiences [4]. Patient satisfaction is considered one of the most important managerial indicators that provide healthcare leaders and decision-makers with an overview of the services provided to patients during the hospitalization period [5].

The importance of patient satisfaction relies on the

fact that the level of patient satisfaction may impact the treatments or the cooperation of the patients with the healthcare providers, which affects the quality of services provided by the healthcare organization and leads to undesirable effects on the patient's relation with their providers and commitment to their treatments plan [6].

Healthcare organizations utilize patient satisfaction indicators to measure the impact of quality programs or the impact of accreditation programs. Those programs may be international, such as the Joint Commission of International Accreditation (JCIA), or maybe national accreditation programs, like the Healthcare Accreditation Council (HCAH) and the Saudi Central Board for Accreditation of Healthcare Institutions (CBAHI) [7].

The accreditation programs aim to improve the

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care processes and ensure the quality of services provided to the patients, which enhances the clinical outcome, maintains patient safety, and increases patient satisfaction with healthcare organizations [8]. Despite those benefits, the sustainability of the accreditation needs to be maintained to maximize the benefits of accreditation programs and ensure that the benefits of accreditation reach the patient [9].

JCIA is one of the most reputed accreditation programs in the world, and it is implemented in many countries; this accreditation has many standards and aims to improve the quality of care and maintain patient safety, as other accreditation programs help healthcare organizations to improve patient outcome, reduce infection rate, and enhance the overall hospital processes that concern patients wishing and expectations [10].

Some of the literature discusses the relationship between patient satisfaction and accreditation status, such as the impact of hospital accreditation status on patient satisfaction [8, 10], the impact of accreditation on patient outcomes [6, 11, 12], patient satisfaction in accredited and non-accredited hospitals [4] and the association between patient satisfaction and accreditation [8].

In Palestine, the hospital accreditation program has been implemented recently, and many hospitals have been JCIA-accredited. Those hospitals measure the impact of accreditation on different levels and domains; one of the important aspects that need to be assessed regarding the impact of the accreditation program is the patient's satisfaction before and after the hospital is granted the accreditation. This study is the first study comparing the impact of JCIA on patient satisfaction before and after accreditation.

In healthcare, patient satisfaction provides hospital leaders, healthcare providers, health agencies, and health insurance companies with an important measure and tool to evaluate the hospital process and outcome from a patient perspective [13]; leadership strategies and management commitment are strategic pillars in enhancing patient satisfaction [14].

The quality of care is far from the optimal status, and accreditation is used by healthcare organizations to improve the quality of care. This improvement relies on the link between the quality and the accreditation program, as it has become evident that accredited organizations are better than non-accredited organizations, mainly in using evidence-based, care processes, and patient outcomes [15]. And at Dr. Mohammed Saleh Hospital at the University of Bahrain, Indonesia. The researchers studied the level of patient

satisfaction and quality in the neurology clinic. Through collecting and analyzing data, the researchers concluded that the level of patient satisfaction with the services in the hospital increases with the increase in the quality of service in the hospital [16]. This research included the level of patient satisfaction in terms of the services provided and the level of quality provided by nurses working in one of the accredited hospitals in Indonesia. Through the results obtained by the researchers, it was found that there is a correlation between the level of quality and the level of satisfaction among patients, and the reliability factor obtained a higher degree than the rest of the parameters [17].

Accreditation is considered a valuable tool to enhance the overall process in hospitals and ensure that healthcare professionals and the other disciplines are working according to standards that maintain the patient's safety, improve the patient's outcome, and enhance the reputation of the organization [18]. Accreditation also has a positive impact on hospital indicators such as efficiency, effectiveness, safety, patient outcome, and patient satisfaction [19].

The relationship between patient satisfaction and accreditation is utilized as an indicator to evaluate the impact of accreditation from the patient's perspective on different processes or departments that may be affected by the accreditation process, such as the impact of accreditation on inpatient services, which found that accreditation has a positive impact on patients' satisfaction [20]; the impact of accreditation on outpatient services, which found that accreditation has improved the outpatient satisfaction significantly [21]; and the impact of accreditation on diagnostic services, which found that accreditation enhances the process of diagnostics and patient satisfaction [22]. The impact of accreditation of pharmacy services found that accreditation had positive feedback and improved the satisfaction level among those patients [23]. Other researchers conducted a study to assess patient satisfaction with services offered at the accredited hospital laboratory. They have reached a high and positive level of satisfaction with some of the services provided in the laboratory department, and they have also obtained a negative impact on some of the other services provided in the same department [24].

The impact of accreditation on the quality program and hospital performance measures can differ between the initial accreditation survey (the first time of the accreditation) and the triennial accreditation survey (the reaccreditation). These

differences may relate to the process of maintaining the sustainability of the accreditation standards implemented by the hospitals and to the experiences earned by the healthcare providers in the accredited hospitals [25]. The difference between initial and triennial accreditation was studied in an academic tertiary hospital by Devkaran et al. [25] to different quality measures without looking for the difference in patient satisfaction.

As a result, the impact of the hospital accreditation status of hospitals needs to be measured at the same hospitals to determine the benefits of accreditation for the hospital. The purpose of this study is to assess the level of patient satisfaction of patients who had been treated in a hospital before the hospital became accredited (pre-accreditation) and measure the level of patient satisfaction after the hospital gained accreditation (post-accreditation) to determine the impact or the benefits of the accreditation status from the patient point view.

It is worth mentioning that patient satisfaction with accreditation status was measured previously in Palestine. study [4] compared patient satisfaction between two hospitals, an accredited hospital, and a non-accredited hospital. The scope of services differed between the two hospitals; the access to hospitals differed, as the accredited hospital is located in a restricted area and the patient needed permission to reach the hospital. The type of hospital differs, as the non-accredited hospital is private and the accredited hospital is a non-governmental not for profit hospital. The hospital size differed, as the accredited one is more than double the size of the non-accredited one. Furthermore, the comparison was made between two different hospital processes, where there was no uniformity in the process between the two hospitals. Thus, it is pivotal to mention that the comparison between them had many multiple factors to consider, which may affect patient satisfaction and not only accreditation status, such as several staff, teaching hospital, the authority that issues the hospital license, financial status, hospital structure, and management style. Finally, the study finds that there is no association between patient satisfaction and accreditation status and that the two hospitals had a high level of

satisfaction among the patients who participated in the study. There is no association between patient satisfaction subscales except for responsiveness.

The novelty of this study relates to many issues: 1) the method of measuring patient satisfaction before the hospital implemented accreditation standards, and reevaluating patient satisfaction after the hospital gained accreditation and implemented the accreditation standards. 2) making the comparison by using the same hospital environment and organization factors that may affect patient satisfaction more than the accreditation status, such as the number of staff, nursing staff and patient ratio, hospital infrastructure, hospital hierarchy structure, management style, the scope of services, department type, patient flow, hospital process, access to the hospital, teaching hospital, owner of the hospital, working hours, type of patients, payers of the services (health insurance, governmental referrals, cash payers), and the continuous education program implemented in the hospital. 3) The firsthand dataset is used in this study. 4) the type of accreditation program: in this study, the accreditation program is the JCIA, which has been more prevalent among hospitals in Palestine; seven hospitals have been accredited by JCIA since 2013, and two hospitals are set to get the JCIA accreditation in this year, meaning that the findings of this study will provide evidence to policymakers and hospital leaders regarding the benefits of the accreditation program and the impact of the JCIA program on patient satisfaction from the patient perspective.

The objective of this study is to assess the level of patient satisfaction of patients who are treated in a hospital before accreditation (pre-accreditation) and after accreditation (post-accreditation).

To identify how the accreditation status impacts the level of patient satisfaction.

The research has two hypotheses: 1) there are statistically significant differences between patients' demographics and accreditation status. 2) there are no statistically significant differences between patient satisfaction and accreditation status.

Table 1 shows the comparison between this work and other related reference papers.

**Tab. 1. Difference between our work and the other reviewed papers.**

Ref.	Other work	Our work
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No.		
9	The study was carried out at King Abdullah Medical City (KAMC). The target population included all KAMC employees: managers, administrative personnel, physicians, nurses, dentists, pharmacists, technicians, dietitians, and support staff. Seven Hospitals in Hamadan, Iran.	Our work is to assess patients' satisfaction with hospital accreditation
10	The researchers study different aspects such as human resources conditions, information, communication, education, medical equipment and physical structure, accessibility to clinical services, emotional support, management, and coordination of care. Medicare Hospital, US.	The researchers studied patient satisfaction both before and after accreditation and focused on the following criteria assurance, reliability, tangibles, responsiveness, and empathy.
11	The researchers focused on patients on 65 old and above, younger people with disabilities, and people with end-stage renal disease. The researchers used the observation approach as a tool for their work.	In our work, the age of patients 18 and above also, used the questionnaire as a tool for our work.
12	Researchers have selected four hospitals in Sleman, Yogyakarta. They study patient satisfaction on accreditation status, service quality, length of care, source of funds, employment, age, and gender. Patient satisfaction is impacted directly and negatively by work	Our work is on a Palestinian private hospital in the middle of the West Bank And focused on the following criteria assurance, reliability, tangibles, responsiveness, and empathy. In our results, we have a positive impact on patient satisfaction
16	Researchers selected random samples from a neurology clinic in a hospital in Indonesia. The objective of their work is to evaluate the degree of quality services in the hospital	Our work has different objectives (to assess the level of patient satisfaction of patients who are treated in a hospital pre-accreditation and post-accreditation. To identify how the accreditation status impacts the level of patient satisfaction)
17	The research focused on the level of quality provided by nurses to patients in one of the hospitals in Indonesia.	The current research focused on the level of satisfaction among patients in different departments of the hospital and additional parameters.
16	In this study, the worker seeks to explore the advantages of accreditation programs that apply to hospitals. Jordan from the viewpoint of staff (doctors and nurses).	Our work seek to know the association between patient satisfaction and hospital accreditation status
18	The researchers selected a private hospital in India. They seek to study the extent of patient satisfaction in hospitals before and after accreditation. They examined the patients' satisfaction on the different dimensions (safety, timely, effective, efficient, equitable, and patient-centered)	In our work, we seek to know the association between patient satisfaction and hospital accreditation status on assurance, reliability, tangibles, responsiveness, and empathy.
24	The researchers conducted a study to assess patient satisfaction with services offered at the accredited hospital laboratory. India	Our work was in various departments in the hospital and the services provided to patients

## 2. Research Methodology

This section presents the research design used in this study, the sampling approach recruited to collect the data, the inclusion and exclusion criteria used to recruit the participants in the study, the conceptual framework with dependent and independent variables in the study, the population and sample size, study setting, research instrument, data collection period, reliability and validity of the research instrument, and the data analysis.

### 2.1. Research design

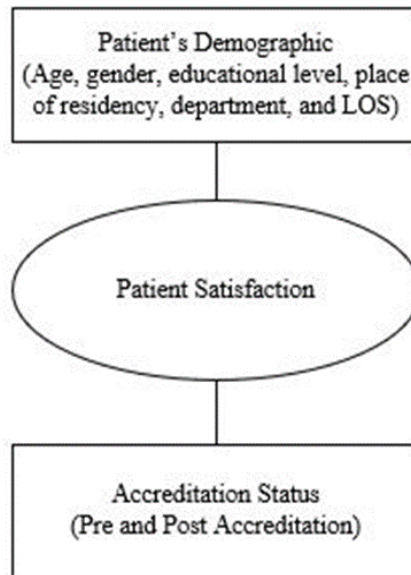
A quantitative descriptive cross-sectional design was used to describe the variables for assessing the association between patient satisfaction and accreditation status [26]. This study was reported according to strengthening the reporting of observational studies in epidemiology (STROBE) guidelines [27], as presented in Appendix A.

### 2.2. Conceptual framework

The conceptual framework of the study includes patient satisfaction as a dependent variable, and the study needs to examine the association of the independent variables, which include (patient

demographics and accreditation status). A designated questionnaire measured patient satisfaction in this study, and the means of overall satisfaction and means of domains in the questionnaire were compared with accreditation status. The demographics of the patients who

participated in this study included their age, gender, educational level, length of stay, place\ area of residency, and the department in the hospital that hosted them, as presented in Figure (1).



**Fig. 1. Conceptual framework.**

### 2.3. Sampling approach

The researcher recruited participants using the random sampling technique; this approach ensures that the target population has an equal chance and ensures a lack of bias [28]; the researcher reviewed the discharge patients list, which was obtained from the admission office daily and excludes the patients who don't meet the inclusion criteria. The rest of the patient list was coded with numbers, and 10% of the list was picked randomly.

### 2.4. Inclusion and exclusion criteria

The inclusion criteria required adult patients equal to or above 18 years old who had been admitted to the hospitals, stayed for at least one day and were admitted to the open departments only. The study excluded patients who were admitted as emergencies and treated in the closed unit patients who were under 18 years old, and patients who refused to participate in the study.

### 2.5. Target population and sample size

The target population included adult inpatients who were treated in the open departments, and according to the inclusion and exclusion criteria, the hospital data provided the number of

admissions for the last year of about 18,000 admissions and 1500 patients admitted monthly; based on this data from the hospital and the power of sample size at 80%, the recommended sample size was 377 patients with a marginal error of 5 % and a confidence level of 95%. The researcher collected the data in two phases: 1) a pre-accreditation survey and 2) a post-accreditation survey, and the data was collected from each phase separately. The total sample size was 800 patients (400 patients before accreditation and 400 patients after accreditation), which means a duplicate of the recommended sample size. The sample size was balanced for the two phases to decrease the risk of bias.

### 2.6. Study setting

A Palestinian private hospital in the middle of the West Bank was established in 2016. It consists of 220 beds and more than 20 outpatient clinics and is equipped with the latest technologies to provide acute care and tertiary care; the hospital is considered the referral hospital in the West Bank. The hospital was accredited by the Joint Commission of International Accreditation (JCIA) in 2023 [29]. The hospital data for 2022 indicated

that the admissions were about 18000 patients annually.

**2.7. Instrument**

The patient's data was collected by using service quality (SERVQUAL), which was developed by [30] to measure the perception and expectation of services provided. This tool includes 24 items and is divided into five dimensions (tangibles, reliability, responsiveness, assurance, and empathy). The SERVQUAL rating each item with a Likert-type scale, ranking from ‘Strongly Disagree’ to ‘Strongly Agree’. The tool was translated into Arabic as the native language of the patients who participated in the study, and this version had been utilized previously in Palestine. Permission to use this tool was obtained from the author.

**2.8. Reliability and validity**

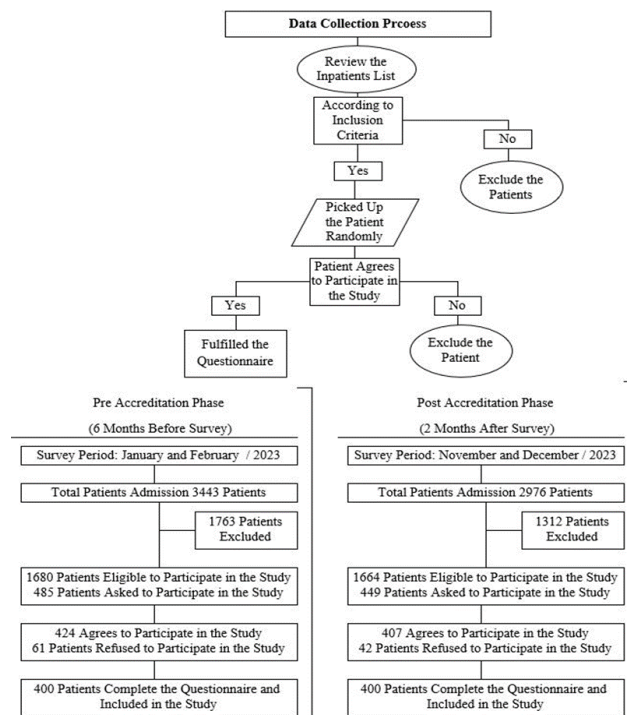
The reliability intended to measure the consistency of the instrument and to control the random error [31], and the instrument was able to measure the required data by giving the same results over time [32]; the research instrument used by the researcher in the data collection process was measured by Cronbach’s alpha and had good reliability level between 0.69 – 0.92.

Validity relates to the results from the participants being true and measuring what they intend to measure [30]. There are different types of validity, such as face, content, convergent, and

discriminant validity. The instrument used in the study (SERVQUAL) was measured by two types of validity (convergent and discriminant), and after conduction, it showed that the tools were acceptable [33]. The researcher also conducted face validity with two experts in the field, and the feedback was good; in addition to that, the instrument was used to measure patient satisfaction in several studies such as [33-36] and measure patient satisfaction with accreditation such as [4, 34, 35].

**2.9. Data collection**

The researcher collects the data in two phases, phase one: pre-accreditation (January and February / 2023) and post-accreditation phase (November and December / 2023) from the inpatient list and according to the inclusion and exclusion criteria. The researcher also distributes the questionnaire to the patients after explaining the aim of the study, answering all questions or concerns from the patients, and agreeing to participate in the study. The researcher collects the questionnaire from the patients and ensures patients that the answers to the questions will be anonymous, and none of the healthcare providers will know their responses. The researcher ensures that the patients who participated in the study fulfill all required data and questions in the questionnaire. The data collection process is presented in Figure (2).



**Fig. 2. Data collection process.**

### 2.10. Data entry and analysis

The data was entered into the data analysis application after the data was coded to identify each category or class that was used during the data collection. The data was checked, ensuring that no data was missing and no data entry errors were made. The data was analyzed by the Statistical Package for Social Sciences (SPSS) program version 26; the analysis included the frequencies, percentages, means for continuous variables, a student test (T-test) for categorical variables (two categories), chi-square for categorical variables (more than two categories), and linear regression to predict the impact of accreditation.

### 2.11. Limitations

The study was conducted in one hospital, which will make the generalization of the study not applicable. In addition, the study was conducted by using a structured tool, which may be considered a leading perspective according to the structure of the tool.

## 3. Results

This section discusses the findings of the study, which include the descriptive study of the patient’s demographics and testing of the research hypothesis. The descriptive section shows the numbers and percentages of the demographics of patients who participated in the study. For testing the hypothesis, the section showed the findings of statistical tests that were used in this study to examine the association.

### 3.1. Descriptive Statistics

#### 3.1.1. Patient Demographics

Patient demographics include (the age of the patients, their gender, educational level, residency area, departments, and length of stay in the hospital). Eight hundred patients filled out the questionnaire; half (400 patients) of the participants filled out the questionnaire before the accreditation, and the other half (400 patients) after the hospital obtained the accreditation. No missed data for all questionnaires were filled in by patients participating in the study.

Figure (3) shows that 35% were between 18-30 years old, 44% were between 31-50 years, 14% were between 51-70 years, and 7% were between 71-90 years. The average age of the patients was 42.3 years. The data showed that the percentage of males from the patients who participated in the study was 57%, while 43% were females. The residency area was categorized as 13% from the south, 47% from the center, and 40% from the north. The education level for the patients in the sample was as follows: 18% were in primary school, 22% were in secondary school, 18% had diplomas, 38% were undergraduates, and 4% were graduates. The patients were recruited from the departments of the hospitals as follows: 19% from the surgical department, 16% from the medical department, 27% from the gynecological department, 20% from the orthopedic department, and 18% from the ENT department. The average Length of stay (LOS) of respondents was 5.1 days. Figure 3 illustrates that 68% stayed between 1-10 days, 25% between 11-20 days, and 7% between 21-30 days.

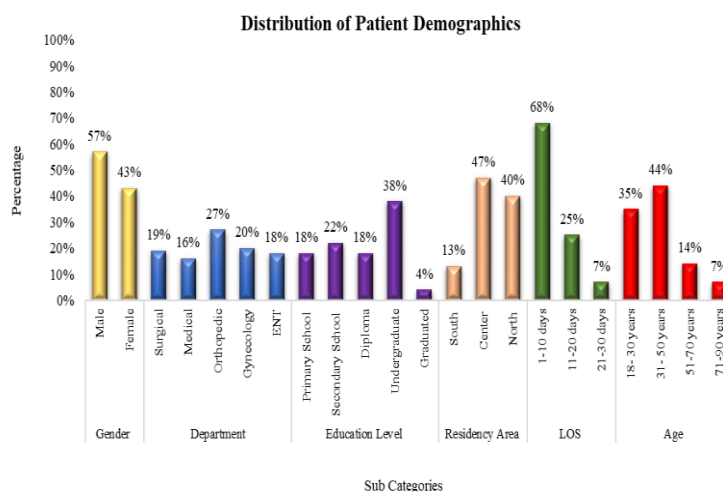


Fig. 3. Distribution of patient demographics.

The data showed as well that the number of male patients who participated in the study in the pre-accreditation phase was 200 patients and 256

patients in the post-accreditation phase. In comparison, the female patients were 200 patients in the pre-accreditation phase and 144 patients in

the post-accreditation phase. This means that the total number of male patients who participated in this study was more than that of female patients by 7%, as presented in Table (2).

The number of patients from the departments in the pre-accreditation phase is as follows: 80 patients from surgical, 56 patients from medical, 112 patients from orthopedic, 88 patients from gynecology, and 64 patients from the ENT department, while the number of patients recruited in the post accreditation phase is as follows: 64 patients from surgical, 75 patients from medical, 104 patients from orthopedic, 76 patients from gynecology, and 64 patients from the ENT department. This means that the number of patients participating in the orthopedic departments was higher in both phases (216 patients) followed by the gynecology department (164 patients), which may relate to the nature of the hospital services, as presented in Table (2).

As for the educational level, the number of patients recruited in the pre-accreditation phase was as follows: 60 patients with primary school education, 96 patients with secondary school education, 80 patients with diplomas, 144 patients at the undergraduate level, and 20 patients with higher education degrees, while the number of patients from the post accreditation phase was as follows: 84 patients with primary school education, 80 patients with secondary school education, 64 patients with diplomas, 176 patients at the undergraduate level, and 8 patients with higher education degrees. These numbers showed that the undergraduate qualification was the highest group (308 out of 800 patients), and the graduate was the lowest among all qualification groups (28 patients), as presented in Table (2).

Regarding residency areas, the number of patients in the pre-accreditation phase was as follows: 32 patients from the south, 204 patients from the center, and 164 patients from the north, while the number of patients for the post-accreditation phase was as follows: 72 patients from the south, 172 patients from center, and 156 patients from the

north. The data showed that most of the patients are located in the center area (376 patients) followed by the south area (304 patients), and this is logical due to the location of the hospital, as presented in Table (2).

For the length of stay, the numbers for patients in the pre-accreditation phase were as follows: 292 patients stayed between (1-10 days), 88 patients stayed between (11-20 days), and 20 patients stayed between (21-30 days). While the numbers for patients in the post-accreditation phase were as follows: 253 patients stayed between (1-10 days), 112 patients stayed between (11-20 days), and 35 patients stayed between (21-30 days). This means that the patients who stayed between (1-10 days) were prevalent among the other groups, with 545 out of 800 patients, and this result may relate to the nature of hospital services and the study inclusion criteria, by which the intensive unit patients were excluded from the study. This was followed by patients who stayed between (11-20 days) with 200 patients, as presented in Table (2).

As for patients' ages in the pre-accreditation phase, they were as follows: 144 patients between (18- 30 years), 184 patients between (31- 50 years), 48 patients between (51- 70 years), and 24 patients between (71-90 years), while the numbers for patients in the post-accreditation phase were as follows: 136 patients between (18- 30 years), 170 patients between (31- 50 years), 60 patients between (51- 70 years), and 34 patients stayed between (71-90 days). This means that the patient age group between (31 and 50 years) was the highest group among the other age groups at (354 out of 800) patients, and the lowest patient group was the patients aged between (71 and 90 years) at 58 patients, and this may relate to the hospital scope of services, as the hospital doesn't have a rehabilitation department or geriatric departments, which may increase the number of elderly patients, and no patients less than 18 years due to the inclusion criteria in the study, as presented in Table (2).

**Tab. 2. Distribution of patients' demographics according to accreditation status**

Category	Subcategory	Pre- Accreditation	Post Accreditation	Total & Percentage
Gender	Male	200 (43.9%)	256 (56.1%)	456 (57%)
	Female	200 (58.1%)	144 (41.9%)	344 (43%)
Department	Surgical	80 (55.6%)	64 (44.4%)	144 (18%)
	Medical	56 (42.7%)	75 (57.3%)	131 (16%)
	Orthopedic	112 (51.9%)	104 (48.1%)	216 (27%)
	Gynecology	88 (53.7%)	76 (46.3%)	164 (20%)
	ENT	64 (44.1%)	81 (55.9%)	145 (18%)



Education Level	Primary School	60 (41.7%)	84 (58.3%)	144 (18%)
	Secondary School	96 (54.5%)	80 (45.5%)	176 (22%)
Residency Area	Diploma	80 (55.6%)	64 (44.4%)	144 (18%)
	Undergraduate	144 (45%)	164 (55%)	308 (38%)
	Graduated	20 (71.4%)	8 (28.6%)	28 (4%)
LOS	South	32 (30.8%)	72 (69.2%)	104 (13%)
	Center	204 (54.3%)	172 (45.7%)	376 (47%)
	North	164 (51.3%)	156 (48.7%)	320 (40%)
Age	1-10 days	292 (53.6%)	253 (46.4%)	545 (68%)
	11-20 days	88 (44%)	112 (56%)	200 (25%)
	21-30 days	20 (36.4%)	35 (63.6%)	55 (7%)
Age	18- 30 years	144 (51.4%)	136 (48.6%)	280 (35%)
	31- 50 years	184 (51.8%)	170 (48.2)	354 (44%)
	51-70 years	48 (44.4%)	60 (55.6%)	108 (14%)
	71-90 years	24 (41.4%)	34 (58.6%)	58 (7%)

### 3.2. Testing hypothesis

This study has two hypotheses that are related to the study's purpose; the first hypothesis is there are statistically significant differences between patients' demographics and accreditation status which is tested to examine the association of the patient's demographics (gender, department, education level, residency area, length of stay (LOS), age) with accreditation status (two phases: pre-accreditation and post-accreditation). The second hypothesis is that there are no statistically significant differences between patient satisfaction and accreditation status which aims to examine the association of patient satisfaction and accreditation status (comparing the means of patient satisfaction between the pre-accreditation phase and post-accreditation phase). Furthermore, linear regression was utilized to measure the impact of accreditation on patient satisfaction.

#### 3.2.1. Patient demographics with accreditation status

The demographics data was tested by using the Chi-Square test to examine the association of the categorical variables with patient satisfaction. The patient's satisfaction was tested by using a test to examine the association between patient satisfaction and accreditation status (pre-accreditation and post-accreditation).

However, the study showed that there are no statistically significant differences at the level ( $P \leq 0.05$ ) between patient satisfaction and patient demographics (gender, place of residency, education level, and length of stay) except for department and age, which showed that there are statistically significant differences at the level ( $P \leq 0.05$ ) between patient satisfaction and this demographic, as the p-values were (0.001, 0.039) respectively, as presented in Table (3).

**Tab. 3. Differences of demographic data by accreditation using chi-square test**

Demographic Data		Accreditation Status		P- value
Main	Subcategory	Pre	Post	
Gender	Male	200	256	0.225
	Female	200	144	
Department	Surgical	80	64	0.001
	Medical	56	75	
	Gynecology	112	104	
	Orthopedic	88	76	
	ENT	64	81	
Education Level	Primary School	60	84	0.723
	Secondary School	96	80	
	Diploma	80	64	
	Undergraduate	144	164	
	Graduated	20	8	
Residency Area	South	32	72	0.196
	Center	204	172	

	North	164	156	
LOS	1-10 days	292	253	
	11-20 days	88	112	0.537
	21-30 days	20	35	
	Age	18- 30 years	144	136
	31- 50 years	184	170	
	51-70 years	48	60	0.039
	71-90 years	24	34	

**3.2.2. Patient satisfaction with accreditation status**

The pre-accreditation phase includes the patients treated in the hospital at least six months before the accreditation survey, and the post-accreditation phase includes the patients treated in the hospital after the accreditation survey. The study showed there are statistically significant differences at the level ( $P \leq 0.05$ ) between the means of patient satisfaction attributed to

accreditation status. Based on the testing hypothesis results, there are significant statistical differences between the means of patient satisfaction attributed to accreditation status with  $p$ -value = 0.04. Thus, we reject the null hypothesis, which states that there are no statistically significant differences at the level ( $P \leq 0.05$ ) between the means of patient satisfaction attributed to accreditation status, as presented in Table (4).

**Tab. 4. Patient satisfaction according to accreditation status (T. test)**

Variables		Statistical analysis		
		Mean	T- value	P-value
Overall Patient Satisfaction	Pre-Accreditation	4.062		
	Post-Accreditation	4.218	-2.086	0.040

For the patient satisfaction subscale, the study showed that there are statistically significant differences between the means of patient satisfaction subscales (Tangibles, responsiveness, and assurance) related to accreditation status at

level ( $P \leq 0.05$ ). Also, the study showed that there are no statistically significant differences between the means of patient satisfaction subscales (reliability and empathy) related to accreditation status at level ( $P \leq 0.05$ ), as presented in Table (5).

**Tab. 5. Patient satisfaction subscales according to accreditation status (t. test)**

Variables		Statistical analysis		
		Mean	T- value	P-value
Tangibles	Pre-Accreditation	4.28		
	Post-Accreditation	4.42	0.252	0.012
Reliability	Pre-Accreditation	4.46		
	Post-Accreditation	4.44	0.171	0.865
Responsiveness	Pre-Accreditation	4.13		
	Post-Accreditation	4.41	0.948	0.045
Assurance	Pre-Accreditation	4.31		
	Post-Accreditation	4.49	0.016	0.031
Empathy	Pre-Accreditation	4.41		
	Post-Accreditation	4.25	0.582	0.117

Based on the study findings and to measure the impact of accreditation on patient satisfaction, the simple linear regression was utilized to measure the effect of the hospital accreditation status to

predict the accreditation impact, and the results found that a one-unit increase in accreditation increases patient satisfaction by 0.1556, as in Table (6).

**Tab. 6. Simple linear regression of patient satisfaction by accreditation status**

Coefficients				
Term	Coef.	95% CI	T-Value	P-Value
Regression	0.1556	(0.0071, 0.3041)	2.08	0.04

#### 4. Discussion

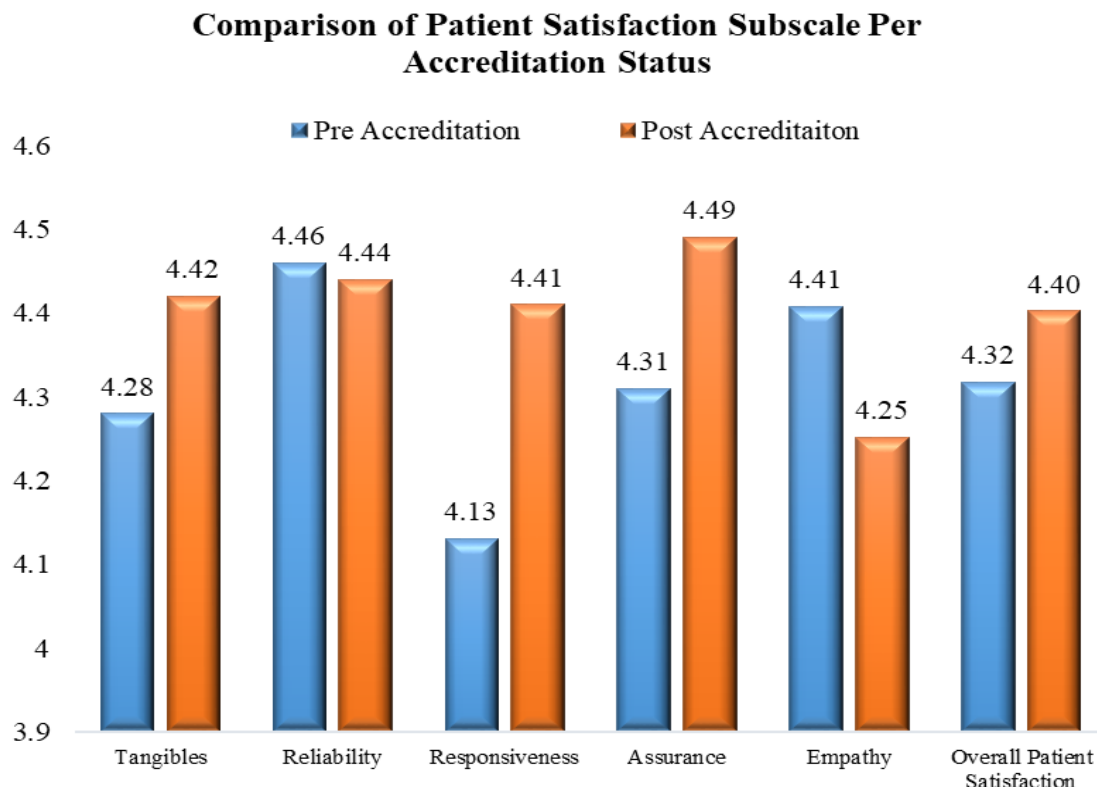
##### 4.1. Patient satisfaction

The data showed that satisfaction in the two phases is high, with a total mean of (4.36). The means of the results of all questions ranged from 3.21 to 4.67. These findings are compatible with the study [36], which states that despite the hospital accreditation status, the patient satisfaction level reflected was acceptable since most of the question results were above the scale's mean (3); this ensures that the patients who participated in this study had received an acceptable level of service quality in the hospital.

The study findings showed differences in patient satisfaction levels; the findings indicated that the post-accreditation phase has a higher patient satisfaction subscale with a mean of (4.40) than the pre-accreditation phase, which had a mean of (4.32). In the post-accreditation phase, the order of the patient satisfaction dimensions was as follows: assurance, reliability, tangibles, responsiveness, and empathy. The highest subscale in this phase was assurance, with a mean

of (4.49), and the lowest score was empathy, with a mean of (4.25). In the pre-accreditation phase, reliability was the highest subscale, with a mean of (4.46), and the lowest score was responsiveness, with a mean of (4.13).

For the reliability dimension, the mean of patient satisfaction was high in both phases in favor of the pre-accreditation phase with a mean of (4.46), while for the post-accreditation phase, it was with a mean of (4.44). In the assurance dimension, the findings were high in both phases in favor of the post-accreditation phase, with a mean of (4.49), while the pre-accreditation phase had a mean of (4.31). Regarding the empathy dimension, the findings showed that it was higher in pre-accreditation than in post-accreditation, with a mean of (4.41) and (4.25), respectively. For the Tangible dimension, the pre-accreditation had a mean of (4.28) while the post-accreditation had (4.40). Finally, in the Responsiveness dimension, the mean was (4.13) in the pre-accreditation and (4.41) in the post-accreditation, as presented in Figure (4).



**Fig. 4. Comparison of patient satisfaction subscale per accreditation status.**

The study showed that the total mean of each item ranged from (3.21 to 4.67); the lowest statement rated by patients in the questionnaire was “readiness for personal attention” at (3.21), while

the highest statement rated by patients in the questionnaire was “adequate information provided” at (4.67). The highest-rated statement in

the pre-accreditation phase was “sympathetic attendance to patients” at (4.66),

and the lowest statement was “readiness for personal attention”. In comparison, the highest-rated statement in the post-accreditation phase is “the patient feels safe” at (4.74) and the lowest is “convenient working hours”. Through the results we reached, the dimensions of patient satisfaction (guarantee, reliability, tangible things, responsiveness, and empathy) obtained nearly similar rates, which indicates a good level of satisfaction among patients, and these findings were confirmed and agreed by some previous studies [12, 18, 24].

#### **4.2. Patient satisfaction with demographics**

Regarding the relation between patient demographics data and accreditation status, the study finds that there is no association between the means of patient satisfaction and patient demographics (gender, length of stay, and residency area); this finding is consistent with the findings of [4]

which found no statistically significant association between

patient satisfaction and demographics data. This finding is also consistent with the findings of the study [37], which showed that the gender of the patients did not affect the level of patient satisfaction. As for the patient’s age, the study findings showed significant differences between the age group 51-70 pre- and post-accreditation, in which the mean satisfaction post-accreditation was (0.227) points more than the mean satisfaction in the 18- 30 years; this finding is consistent with the study [12] which showed an age association with patient satisfaction. Moreover, the study findings showed that there are statistically significant differences between patient satisfaction and patient department, with the differences in the gynecology department in favor of the post-accreditation phase. These findings may relate to the nature of the department infrastructure, a high level of readiness to provide care for gynecology patients, and the good reputation of the team involved in the care process in this department; this finding is consistent with the findings of the study [38] which found that the type of department affects patient satisfaction.

#### **4.3. Patient satisfaction with accreditation status**

The study findings showed that accreditation status impacts patient satisfaction. Also, the mean of patient satisfaction is higher post-accreditation

with a (4.40) than pre-accreditation (4.32). The study findings are consistent with the results of studies [39, 40], which found that patient satisfaction and quality of care indicators are better in accredited hospitals than in non-accredited hospitals. Accreditation helps hospitals with a group of improvements that may include the hospital’s administrative departments, employees, and workers, which also extends to nurses and patients. The patients are the main and important part that benefits from this accreditation, and through them, the evaluation is done.

For the patients’ satisfaction subscales, the findings showed that patient satisfaction subscales (tangibles, responsiveness, and assurance) were associated with the accreditation status. This means that the subscales relate to the hospital infrastructure, waiting time, response to the patient’s needs, patient engagement in the process, and patient safety, which all impact patient satisfaction from the patient's perspective. This finding is compatible with the findings of the study [4], which stated that there is a relationship between accreditation and patient satisfaction subscales (assurance and responsiveness). It’s also consistent with the findings of the study [41], which found that the tangible subscale is affected by the accreditation status. Likewise, a study [12] showed a positive effect between patient satisfaction and service quality. This indicates and confirms the accreditation factor that improves the quality of services provided to patients and which many government or private hospitals seek to achieve.

The findings also showed that patient satisfaction subscales (reliability and empathy) were not associated with the accreditation status. The findings mean that the patient satisfaction subscales that concern the staff’s relation with patients and the communication skills were not impacted by accreditation status and that accreditation didn’t improve those aspects from the patient’s point of view. This may depend on the fact that accreditation enhances the patient care process in many aspects and areas, and hospitals need to reflect on all these areas for patients to feel the impact of accreditation on communication and willingness to help. This finding is consistent with the findings of the study [4], which found that patient satisfaction subscales (reliability, assurance, and empathy) were not associated with accreditation status, and consistent with the findings of the study [42], which found that interaction and communication between staff and patients were important aspects for the patients and impact patient satisfaction; it’s also consistent

with the finding of the study [43], which found that empathy is not impacted by accreditation status. Finally, accredited hospitals play a critical role in ensuring the delivery of high-quality health care to patients. Effective management practices are essential to maintaining high standards of care, operational efficiency, financial sustainability, and quality of service. Maintaining high levels of quality and patient safety is the cornerstone of accredited hospitals. This requires managers or officials in these hospitals to implement some practices or initiatives that will help raise the public and private levels of the hospital. These include good financial management, an active workforce, whether employees, nurses, or doctors, the efficiency and quality of laboratories within the hospital, as well as resting or waiting areas. All of these aspects have a role in improving and enhancing the efficiency of accredited hospitals.

### **5. Conclusion**

The findings of the study showed that patients were satisfied regardless of accreditation status, with the mean satisfaction being (4.36), yet more so in the post-accreditation phase with a mean of (4.40) than in the pre-accreditation phase (4.32). The patients' satisfaction dimensions come in the following order: assurance, reliability, tangibles, responsiveness, and empathy in the post-accreditation phase, while in the pre-accreditation phase, reliability got the highest rank, and responsiveness came in the lowest rank. The study indicates that the accreditation status (the accreditation phase) has statistically significant impacts on patient satisfaction. The study findings also suggest that the high level of satisfaction in the post-accreditation phase may relate to the high level of patient care standards and safety environment implemented in the hospital as requirements of accreditation. In the study of the relationship between patient demographic data and patient satisfaction, the obtained results found no association between patient satisfaction and patient demographics such as gender, length of stay, and residency area. Therefore, we can conclude that the satisfaction of patients comes from various aspects, including the stratification related to the information provided regarding their condition by healthcare providers, which reflects the patient rights and patient-centered care concept implemented in the post-accreditation phase. Also, the satisfaction of patients was related to the prompt services and safety practices or environment that reflected the culture of a safety environment that was earned in the post-accreditation phase. Consequently, we found that

the accreditation provided to some hospitals contributed to improving the quality of care for patients, raising the operational efficiency of the hospital, and developing the working class, starting from employees to doctors.

### **6. Recommendations**

Based on these findings, the researcher recommends that hospitals, healthcare organizations, and healthcare agencies consider accreditation as a tool to enhance hospitals' processes and meet the patient's needs, expectations, and wishes, which reflect on the patients' experiences and satisfaction. The researcher also recommends that the healthcare provider explain each process that is implemented to the patients, with full information and additional benefits of such processes related to the patient needs and patient condition. The researcher recommends to hospital leaders and policymakers in the health sector to obtain accreditation, which will enhance patient satisfaction and other vital processes, and to assess those key performance indicators in hospitals in Palestine, such as HAIs, Fall Risk Rate, Incidents of Pressure ulcers, and medication errors. Those indicators need to be measured before and after accreditation to observe the benefits and impact of hospital accreditation status on those key performance indicators. Finally, the researcher recommends developing a new patient satisfaction tool that reflects the hospital accreditation process and measures patient satisfaction in a manner that helps policymakers. Hospital leaders identify the potential power of accreditation on hospital processes from the patient's perspective.

### **7. Institutional Review Board Statement**

The researcher got approval from the hospital ethics committee after they reviewed the study application, the purpose of the study, the study tools, and its methodology. The researcher explained the research aim to the participants and obtained verbal informed consent before giving out the questionnaire. The data relating to the study was kept in a secured file, and the researcher maintained the confidentiality of the data.

### **8. Informed Consent and Ethical Considerations Statement**

The researcher explained the research aim to the participants and obtained verbal informed consent before they filled the questionnaire. The data relating to the study was kept in a secured file, and the researcher maintained the confidentiality of the data.

### 9. Data Availability Statement

All data are presented in the paper, and the raw data is available only to the researcher due to privacy and ethical considerations.

### 10. Conflicts of Interest

The author declares no conflicts of interest.

### 11. Acknowledgments

The author would like to thank the hospital that permitted conducting the study and the patients who participated in the study.

### 12. Public Contribution

Members of the research and ethics committee were involved in all phases of the study. This included the review of the study proposal, reviewing the study instrument, recruiting the patient's methods, data facilitation, and data collection process. The vital component of the success story in this study was the teamwork and the spirit of collaboration, which involved experienced ethics committee members working together with the researcher.

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