

# On the Agreement between Patients' Perceptions and Expectations about the Quality of Hospital Services

Ashraf A'aqoulah<sup>1,3</sup>, Raghieb Abu Saris<sup>2,3</sup> & Omar B. Da'ar<sup>1,3</sup>

<sup>1</sup> Department of Health Systems Management, College of Public Health and Health Informatics, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia

<sup>2</sup> Department of Epidemiology & Biostatistics, College of Public Health and Health Informatics, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia

<sup>3</sup> King Abdullah International Medical Research Centre (KAIMRC), Riyadh, Saudi Arabia

Correspondence: Ashraf A'aqoulah, Department of Health Systems Management, College of Public Health and Health Informatics, King Saud bin Abdulaziz University for Health Sciences, Riyadh, Saudi Arabia

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## Abstract

Minimizing the gap and ensuring agreement between patients' perceptions and expectations is an indication of a better quality of hospital services. This study aimed to examine the agreement between patients' perceptions and expectations of the quality of hospital services. A cross-sectional design was adopted, and quantitative methods were employed for data collection. The SERVAQUAL tool was used. The sample size was 415 participants. This study was conducted in Jordanian teaching hospitals. The study population was patients who used outpatient clinics in these hospitals. The study found that there is very low agreement between patients' expectation and their perceptions. Overall, the perceived service quality was significantly lower than the expected service quality across all of the dimensions used to measure the service quality gap (reliability, responsiveness, assurance, empathy, and tangibles). The results suggest regional variation, where patients who sought care at hospitals in Amman have a four-fold higher perception of the quality of services than patients who visited Irbid hospitals. Also, patients who are more highly educated (Diploma, Bachelor, or Higher Studies) have a higher perception than patients who have less than secondary education. Age and gender were found to have no significant association with patients' perceptions. The findings of this study suggest that there is a gap between patients' perceptions and expectations. Thus, there is a need to close this gap by improving patient satisfaction with the quality of services.

**Keywords:** patients' perceptions, patients' expectations, hospital quality of services, Jordan

## 1. Background

Hospitals play a significant role in providing vital services for patients. They have exerted huge efforts to overcome obstacles to introduce medical services that meet patients' expectations. There is high competition among hospitals to improve their services and achieve high performance, and hospitals can evaluate their service quality improvement according to their patients' satisfaction (Mahmoud, Alatrash, Fuxman, Meero, & Yafi, 2019). Hospital managers can achieve patient satisfaction if they achieve agreement between patients' perceptions and expectations. This agreement can be attained by reducing the distance between patients' expectations and their perceptions. The agreement drives to quality in the healthcare sector, which is defined based on different perspectives. One perspective focuses on adapting the degree between patients' perceptions and their expectations. Patients' perceptions are based on their interaction with the services provided. When patients receive a specific service, they form perceptions based on the assessment of the quality of the services. In addition, perceptions vary from time-to-time based on the quality of the services received. Hence, hospitals should review continuously review their patients' perceptions. Meanwhile, patients' expectations reflect beliefs about specific services, which involve procedures or tasks based on reference points, standards or criteria against which achievement is judged. In other words, they have faith in the services provided as a reference point against which performance is judged (Girmay et al., 2018).

Enhancement of services is one way to improve patients' perceptions towards healthcare quality and meet patients' needs in order to reduce the distance with patients' expectations. Small and large hospitals can prove great

performance when they meet the quality factors and patients' expectations. Some hospital managers have measured the quality of healthcare services based on only specific standards and have neglected the importance of patients' perceptions (Nguyen, 2016).

However, these days, patients' perceptions are considered a significant source of information to address managerial and technical problems and develop efficient and effective plans for quality improvement in hospitals. Therefore, hospital managers can assess the quality of their hospital services by measuring the gap between expectations and perceptions. Usually, patients can judge low performing quality of services if the actual service provided to patients is less than patients' expectations and vice versa (Ali et al., 2019). Hospital managers should find and address factors related to determining whether a patient's judgment of the hospital services they receive is negative or positive. This action can help hospital management and health care providers to increase their efforts on these factors that hinder their quality improvement, and hence improve healthcare services.

When people receive services or goods, they create an attitude about these services or goods based on their evaluation. In order to measure attitudes about specific services, many tools have been used (Mahmoud et al., 2019). Parasuraman et al. (1991) developed a scale called SERVQUAL to measure quality based on customer expectations and experiences of services. The SERVQUAL is widely used to measure the gap between perceptions and expectations, and agreement can be identified according to these variables. The SERVQUAL model has also drawn attention to the concept of Perceived Service Quality, which focuses on the difference between customers' expectations and perceptions. The SERVQUAL has five domains. First, tangibility is an indication of the physical items that can be recognized by human senses. Second, reliability is the ability to provide service in the same way repeatedly. Third, responsiveness relates to delivering a service at the required time. Fourth, assurance means providing a service with qualified and trained staff, and fifth, empathy refers to understanding of customers' needs and taking care of them.

There are many procedures that have been used to improve the healthcare system in Jordan, and patients believe that Jordanian hospitals have many qualified practitioners. Therefore, patients expect high-quality procedures that meet their needs. Although hospitals have exerted serious efforts to improve the quality of services, and have clarified the importance of a successful health information system (Ayaada et al., 2019), there are many challenges and obstacles that hinder the healthcare system in Jordan from providing patients with high-quality services that meet their expectations. Some of these obstacles are lack of reward, inadequate authority delegation, inadequate material resources, and insufficient budget for a quality management system (A'aqoulah et al., 2016). Consequently, Jordanian hospitals should assess the quality of services and understand how big the gap is between patients' expectations and their perceptions. Therefore, this study aims to examine the agreement between patients' perceptions and expectations of quality hospital services.

## 2. Materials and Methods

A cross-sectional design was adopted, and a quantitative method was employed for data collection. The SERVQUAL tool was used with minor adaptation to measure agreement between patients' perceptions and expectations. An expert translated the SERVQUAL to Arabic from English, and it was then retranslated back to English by another professional translator to be sure that the Arabic SERVQUAL had been translated correctly.

This study was conducted in Jordanian teaching hospitals. The study population was patients who used outpatient clinics in these hospitals. Teaching hospitals were chosen because they have training programs for medical school students. Consequently, it is expected that these hospitals have high-quality healthcare services. The study population included only adult patients who used the teaching hospitals, and a sample of 415 patients was driven by the study population. The study used a simple random sample to distribute the SERVQUAL among participants in order to take a representative sample from the target group. The completed SERVQUALs were collected from the participants directly, and the response rate was 83%. Five hundred questionnaires were distributed, while 415 questionnaires were returned.

The SERVQUAL has five domains about expected services and the five domains were repeated to assess the patients' perceptions. The domains are tangibility, reliability, responsiveness, assurance, and empathy. The SERVQUAL contains 21 items, and uses a 5-point Likert scale which starts at 1 (strongly disagree) to 5 (strongly agree). The SERVQUAL is classified into three categories based on the mean score: (1) low agreement degree, where the mean is  $< 2.33$ ; (2) medium agreement degree, where the mean is from 2.34 to 3.66; and (3) high agreement degree, where the mean is 3.67 to five. The questionnaire was sent to three experts to check the validity of the questionnaire and suitability for Arabic culture. A pilot study was conducted with 50 patients. A reliability analysis was conducted, and it showed an alpha of 0.82. The collected data was analyzed using the IBM SPSS (International Business Machines - The Statistical Package for the Social Sciences) program. The coding for the

negatively worded items of the questionnaire was reversed, and the data was used for analysis in relation to the study aims. Descriptive statistic procedures were completed to determine the mean scores of expectations and perceptions.

The study used Cohen's kappa coefficient ( $\kappa$ ) to test the agreement between the SERVQUAL domains of tangibility, reliability, responsiveness, assurance, and empathy for both patients' hospital service expectations and quality of service perceptions.  $\kappa$  is a statistic that is used to measure inter-rater reliability (also Intra-rater reliability) for qualitative (categorical) items (McHugh, 2012).  $\kappa$  statistics are a more robust measure than simple percent agreement calculation, as  $\kappa$  takes into account the possibility of the agreement occurring by chance.  $\kappa$  is a quantitative measure of reliability for two raters that are rating the same domain, corrected for how often the raters may agree by chance. Cohen suggested the Kappa result should be interpreted as follows: values  $\leq 0$  indicate no agreement and 0.01–0.20 as none to slight, 0.21–0.40 as fair, 0.41–0.60 as moderate, 0.61–0.80 as substantial, and 0.81–1.00 as almost perfect agreement.  $\kappa$  has been widely used in healthcare research (McHugh, 2012; Tsang et al., 2020; Bordalo-Rodrigues et al., 2020).

The study then categorized patients' perceptions into high and low and used *logistic* regression to model the probability of that experience using patients' expectations and demographic factors. Using interaction terms, we further tested whether the effect of patient's expectations on the patients' perception of hospital service quality varied with their level of education. Finally, we used the area under the Receiver Operating Characteristic (ROC) curve to capture whether patients' observations were correctly classified.

### 3. Results

The results reveal that, overall, perception (experience) ranked lower than expectation. Overall, there was very low agreement as shown by the Kappa statistics ( $\kappa = 0.17$ ), which was statistically significant ( $p < 0.001$ ). The mean difference of the domains of expectation and perception are statistically significant ( $p < 0.001$ ). As shown in Table 1, the results also reveal that the mean of the domain of tangible expectations (4.49) is significantly ( $p < 0.001$ ) higher than the mean of the domain of tangible perceptions (3.97). The rest of the domains of empathy, assurance, responsiveness and reliability reveal similar results, where there is a very low agreement between expectation and perception and the mean difference was greater in the expectations.

Table 1. Agreement between the domains of expectation and perception

	N	Mean	SD	$\kappa$	P-value
Expectation: Tangibles	415	4.49	.64	0.139	< 0.001
Perception: Tangibles	415	3.97	.97		
Expectation: Empathy	415	4.31	.72	0.087	< 0.001
Perception: Empathy	415	3.82	.99		
Expectation: Assurance	415	4.39	.73	0.125	< 0.001
Perception: Assurance	415	3.83	1.01		
Expectation: Responsive	415	4.40	.70	0.137	< 0.001
Perception: Responsive	415	3.80	1.06		
Expectation: Reliability	415	4.37	.70	0.101	< 0.001
Perception: Reliability	415	3.86	.98		
Mean Expectation: All domains	415	4.39	.64	0.170	< 0.001
Mean Perception: All domains	415	3.83	.87		

Table 2 shows the results of logistic regression. The results reveal that by visiting a hospital in the Amman region, patients' perceptions increase by a factor of 4.139 ( $p < 0.001$ ) compared to visiting a hospital in the Irbid region. In addition, the results show that having an education level of diploma, bachelor degree or higher education, patients' perceptions increase by a factor of 3.675 ( $p = 0.013$ ), 3.83 ( $p < 0.001$ ), and 2.59 ( $p = 0.041$ ), respectively, compared to no schooling. The patients' demographic profiles such as gender and age, as well as their expectations about the services, were not associated with the perceptions of patients about the quality of services in the hospitals they visited. Further analysis did not reveal that the influence of patient expectation on perceptions varied with the level

of education (Table 3).

Table 2. Experience/perception and associated factors

		Variable	OR	[95% C.I]		P-value
Expectation (low=base)		High expectation	1.244	0.79	1.944	0.337
Region of hospital (Irbid =base)		Amman region	4.139	2.63	6.505	< 0.001*
Age category 20-30 = base		31-40	1.04	0.61	1.753	0.884
		41-50	1.327	0.68	2.561	0.399
		>50	1.216	0.56	2.635	0.62
Education level <High school=base		High school	1.364	0.59	3.152	0.467
		Diploma	3.675	1.31	10.292	0.013*
		Bachelor	3.83	1.88	7.797	< 0.001*
		Higher Educ.	2.587	1.04	6.425	0.041*
Gender	Male = base	Female	0.694	0.43	1.107	0.125
		Intercept	0.333	0.14	0.753	0.008*
		Wald Chi2 (14)	56.18			
		Prob > Chi2	<0.001			
		Pseudo R2	0.1292			
		Linktest	0.528			
		Goodness fit (Lfit)	0.2923			

Notes. \*significant at 5% level.

Table 3. Experience/perception and associated factors with interactions

		Variable	OR	[95% C.I]		P-value
Expectation (low=base)		High expectation	1.090	0.321	3.695	0.891
Region of hospital (Irbid =base)		Amman region	4.089	2.584	6.472	< 0.001*
Age category 20-30 = base		31-40	1.06	0.624	1.801	0.828
		41-50	1.332	0.689	2.578	0.394
		>50	1.271	0.575	2.808	0.553
Education level <High school=base		High school	1.100	0.335	3.614	0.875
		Diploma	5.042	1.061	23.949	0.042*
		Bachelor	3.829	1.442	10.17	0.007*
		Higher Educ.	1.560	0.369	6.594	0.546
Gender	Male = base	Female	0.697	0.437	1.111	0.129
Education expectation interaction		High school × High expectation	1.496	0.288	7.76	0.631
		Diploma × High expectation	0.653	0.084	5.052	0.683
		Bachelor × High expectation	1.040	0.267	4.051	0.955
		Higher Educ × High expectation	2.257	0.343	14.83	0.397
		Intercept	0.349	0.131	0.928	0.035
		Wald Chi2 (14)	58.320			
		Prob > Chi2	<0.001			

Pseudo R2	0.1322
Linktest	0.462
Goodness fit (Lfit)	0.2439

Notes. \*significant at 5% level.

Figure 1 shows a 45-degree line of evidence of good fit, which is reflected in a receiver operating characteristic (ROC) curve that lies above the 45-degree line. The area under the ROC curve = 0.74029, implying that 74% of the observations about the perception of hospitals are correctly classified.

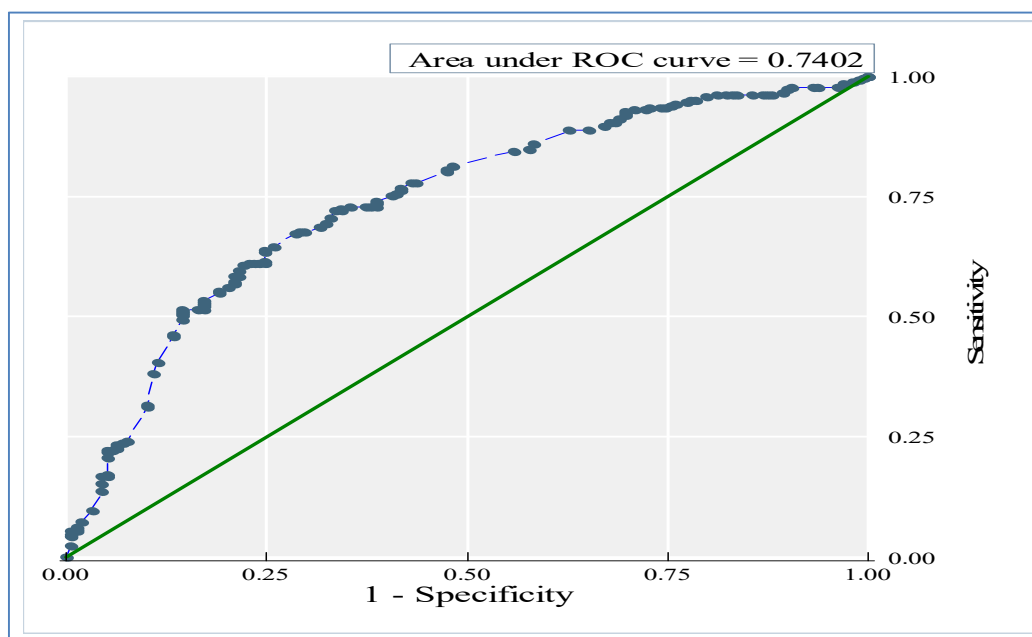


Figure 1. A Receiver Operating Characteristic (ROC) fitness

#### 4. Discussion

This study attempted to answer the question of whether there is agreement between patients' perceptions and expectations using the SERVQUAL tool. The agreement between patients' perceptions and expectations gives an important indication of the level of service quality that they have been provided in any hospital. However, Jordanian hospitals have neglected to measure the quality of their services according to the gap between patients' perceptions and their expectations. Measuring the gap provides hospitals with suggestions for how to improve dealing with patients, facilitate the various procedures of treatment, and enhance the medical practice to reach patient satisfaction. This leads hospitals to make a commitment to the quality of healthcare services.

Generally, the results revealed a difference between the mean of the domains of patients' expectations and perceptions, with the domain of expectations being significantly higher. However, overall, there was very low agreement between patients' expectations and perceptions. Hospital staff could give low attention to patients, physicians do not provide patients with adequate information their health status or patients did not receive effective and safe results. The study results are consistent with the findings of previous studies that demonstrate a difference between patients' expectation and their perceptions, where expectations were reported to be higher (Mahmoud et al., 2019). The finding is also consistent with another study that found patient expectations regarding the effectiveness of treatment were higher compared to their experiences (Moor et al., 2020). In addition, there is agreement between this study result and that of Al-Monani (2016), who showed a gap between patients' expectation and their perceptions in a public hospital in Saudi Arabia. Moreover, in other studies conducted in Pakistan and Iran, researchers found a gap between patients' expectations and perceptions of healthcare service quality (Ali et al., 2019; Abedi et al., 2015). In contrast, the results in this study are not consistent with some other studies. One study found that the perceived services of primary care physicians in Poland met patients'

expectations (Krztoń-Królewiecka et al., 2020), and another study, which examined patient expectation and experience on the interaction between a self-management system and patients, found that patients' expectations were close to their experience (Hallberg et al., 2018). In the current study, perceived service quality was significantly lower than the expected service quality. The wide gap between expectation and perception may be an indication that Jordanian teaching hospitals provided a low level of service quality.

The present study results also show regional variation in the perception of patients about service quality, where visiting a hospital in the Amman region is more likely to be perceived higher compared to Irbid. This result could be because the teaching hospital in Amman is older than the teaching hospital in Irbid, implying that it has more experience in dealing with its patients. This result is consistent with a study in Iran that found gaps in the mean score in all SERVQUAL domains in four different hospitals (Nadi et al., 2016).

The results indicate a mixed effect with regards to patients' demographic characteristics. On the one hand, the study found that having an education level of Diploma, Bachelor's degree or attending higher education is more likely to result in a higher perception about the quality of services compared to patients with less than high school education. This result may be because the patients who are more highly educated know how to use this facility and are more realistic with their perceptions. However, other studies have revealed that the influence of patients' expectations on perceptions did not vary with the level of education (Girmay et al., 2018; Al-Momani, 2016). Patients' demographic profiles, such as gender and age, were not associated with the perceptions of patients about the quality of services in the hospitals they visited. While these results are consistent with some studies (Girmay et al., 2018; Al-Momani, 2016), other studies have shown that women's perceptions of inpatient care were generally less positive than men's (Elliott et al., 2012).

Overall, our study showed that the observations about the perceptions of hospitals are correctly classified. When we adjusted for the effect of expectation on perception, the study revealed no association between patients' expectations about the services and their perception about the quality of services in the hospitals they visited. The lack of agreement between patients' expectations and perceptions means that teaching hospitals in Jordan may have been less optimal in meeting patients' expectations. Patients who attended these hospitals expected a higher level of services. Whereas this study found moderate service quality, the level of service quality was less satisfying for the hospital patients. Patient satisfaction is today a focal point for most hospitals because patients pay for services. Therefore, hospital managers need to recognize that patients receive safe and effective healthcare. This should drive hospital managers to lead their hospitals towards better service quality. Patient satisfaction is an important indication of a hospital's performance. Many hospitals link physicians' incentives with their patients' evaluations.

High-performing hospitals recognize that high satisfaction from patients yields advantages. The following are several reasons that focus on the importance of meeting patients' expectations. First, patients' satisfaction increases their loyalty. There is high competition in the market among hospitals. Therefore, it is required from hospital managers to do their best to increase patients' loyalty by addressing the issues that face them. If any hospital meets its patients' needs, the patients are more likely to come back to the same hospital rather than look for a new hospital (Rostami et al., 2019). Second, meeting patients' expectations enables hospital managers to improve patient retention and attract new patients. Patients share their experiences with one another, and if a hospital has qualified staff and introduces high-quality services to its patients, this will make patients come back again to the same hospital (Abraham et al., 2011). In addition, good service acts as marketing because satisfied patients will discuss their good experiences with their friends, and this could encourage their friends to go to the same hospital. Moreover, improving the outcomes of healthcare services reduces the risk of malpractice. If patients are satisfied with the healthcare services that were provided by staff members, they will adhere to the staff treatment recommendations. Patient satisfaction also makes the hospital staff satisfied with their work and increases staff morale, which leads to a decrease in the risk of malpractice (Prakash, 2010). Furthermore, good service offers the opportunity to make a consistent profit and makes it less likely that a hospital will lose its patients due to service prices. Patients are willing to pay more money to receive healthcare services that meet their expectations. High performing hospitals with high patient loyalty can ask their patients to pay a relatively higher price without losing them, but a hospital that is not interested in its patients' satisfaction will lose them. As a result, this will negatively affect the hospital's income (Richter & Muhlestein, 2017). In addition, most hospitals look forward to local or international accreditation, which is required from hospitals to demonstrate a commitment towards their patients by introducing high quality and safe services (Richter & Beauvais, 2017; Mahmoud, Ekwere, Fuxman, & Meero, 2019).

Hospital managers should pay more attention and take several actions to enhance their hospital services in order to

reduce the gap between their patients' expectations and perceptions. First, it is necessary to improve the appearance of physical materials, equipment, and facilities. Hospital managers need to emphasize cleanliness in their hospitals and employ enough workers to cover all of the hospital facilities. Cleanliness has to be practiced every day, and a hygiene culture must be disseminated among the hospital staff. Hospitals must also ensure that there is car parking available for hospital visitors. Hospital staff need to appear neat and deal with patients in a gentle manner. All tools and machines that are used in the hospital should be up to date. Ali et al. (2019) discuss that tangible resources are essential in organizations to facilitate their services. Second, the ability to implement services to patients reliably and accurately must be enhanced. Appropriate and immediate actions should be taken to address any issues that hinder patient services. In addition, all medical and non-medical mistakes must be reported. Patients must be provided reliable information about their medical status, and providing the right treatment makes patients feel confident with the ability of staff to take care of them. Devi and Muthuswamy (2016) examined service quality perceptions in Indian hospitals, and they found that reliability was one of the most important domains connected with healthcare service quality based on patients' perceptions. Furthermore, Al-Damen (2017) found that the reliability dimension had the most impact on patient satisfaction. Third, hospitals need to provide quick and responsive services to patients. All patient queries should be answered and explained clearly, which will make patients more likely to commit to following the staff recommendations. In addition, all phone calls should be answered promptly. Hospital staff should inform patients exactly when services will be performed, and the service should be at a convenient time for the patient. Moreover, working during the weekend should be organized. Kashkoli et al. (2017) found that the responsiveness of hospital staff has a positive effect on patient satisfaction. They recommend that hospitals should respond to their patients' needs in a quick manner to provide high-quality service. Furthermore, dealing with patients with courtesy and knowledge helps to build a trusted environment. Hospitals should employ qualified staff who can take care of patients and respect their privacy. Naik et al. (2010) found that the staff of any institution need to be trained well to help their customers and be able to provide them with the right information in a timely manner. Moreover, the training program should include etiquette, courtesy, and communication skills. Finally, each patient should feel cared for and attended to. Medical staff should be aware and understand when patients are in discomfort. Hospital staff should also deal with patients with a caring and warm attitude, in addition to providing medical attention to every patient. Nguyen (2016) focused on the empathy factor in a study which examined patients' expectations and perceptions. The study mentioned that health workers should take care and have an interest in all patients; they should understand and listen to each patient to give him or her the best healthcare service that the patient needs.

All of the SERVQUAL domains need to be addressed to improve the quality of services. Thus, it is required from hospital managers to perform corrective actions where these procedures are lacking, in order to improve the quality of services. Improving quality on the ground in hospitals eliminates or reduces the gap between patients' expectations and their perceptions in different domains. As a result of these actions, patients will receive a high level of healthcare service quality and become satisfied with their hospitals. Hospital managers need to constantly review their patients' expectations and perceptions, and eliminating a gap between these factors will enhance the hospital's reputation, locally and globally.

The study limitations include collecting data only from teaching hospitals and only covering some demographic factors. This study did not include private hospitals because of concerns of accessibility to data and privacy issues, thereby limiting the generalizability of the results of the study. Jordan has many private hospitals that are considered high-performing hospitals. These hospitals have modern equipment and qualified staff. However, the services of these hospitals are expensive and are out of reach for many patients, as only wealthy patients and patients who have private insurance can afford the cost of the services of these hospitals. In addition, this study did not capture all demographic characteristics of patients because of privacy issues. Future research should measure patients' expectations and perceptions in private hospitals and focus on other demographic factors that were not covered in this study.

## 5. Conclusion

Measuring the gap between patients' expectations and their perceptions is a vital procedure to improve the quality of healthcare services and achieve patient satisfaction. Teaching hospitals in Jordan have a significant gap between their patients' expectations and perceptions, which is an indicator that these hospitals do not meet their patients' needs. Hospital managers need to meet their patients' needs because this will increase patient loyalty, enhance patient retention and attract new patients, generate marketing via satisfied patients, improve hospital outcomes and reduce the risk of malpractice, and contribute to generating a consistent profit with less chance of losing patients due to service prices. As a result, serious action needs to be taken by hospital managers to eliminate the gap between patients' expectations and perceptions. These actions include improving the appearance of physical

materials, equipment, and facilities; enhancing the ability to implement services to patients reliably and accurately; improving responsiveness to patient needs and providing efficient services; dealing with patients with courtesy and knowledge to build a trusted environment; and introducing more caring practices and providing enough attention to each patient.

### Competing Interests Statement

The authors declare that there are no competing or potential conflicts of interest.

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