

Evaluation of patient satisfaction with the virtual clinic in Jazan City: Saudi Arabia



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ABSTRACT

Patient satisfaction is a key component in the quality of care and is an element in the dissemination and adoption of virtual clinic facilities. Evaluating patient satisfaction has become an essential indicator of healthcare performance and outcomes. The aim of the study was to evaluate patient satisfaction with the virtual clinic. A cross-sectional study was conducted using a convenience sample of 305 patients visiting a virtual clinic at three general hospitals in the Jazan region of Saudi Arabia. The study was conducted using a quantitative descriptive correlational design. The researcher employed the Telehealth Satisfaction Scale to assess patient satisfaction with virtual clinic care. Satisfaction scores were compared between groups using an independent sample t-test and one-way analysis of variance. The study indicated that patients reported a high degree of satisfaction with their virtual clinic. Most scale item averages were greater than 3, indicating ratings of "good" to "excellent" satisfaction. There was no statistically significant relationship between patient satisfaction with the virtual clinic and sociodemographic characteristics. Despite the fact that virtual clinics in the healthcare sector in the Jazan area are relatively new, the survey results show high levels of satisfaction with the service. The courtesy, respect, sensitivity, and friendliness of the virtual clinic staff and respecting patients' privacy were essential to patients, demonstrating that virtual clinics may improve access to care.

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1. Introduction

Evaluating the quality of incorporated service products has become a major challenge for health service managers and directors (Tripathi and Siddiqui, 2020). Patient satisfaction or dissatisfaction is a complex issue that is associated with patient prospects, health eminence, personal features, and characteristics of the health system (Akinwale and George, 2020). However, patient satisfaction is a good indicator of healthcare quality and has emerged as an outcome measure. Surveys of patient satisfaction are progressively recognized as indicators for measuring the achievement of the hospital service delivery system (Salyers et al., 2017). Patient satisfaction was described as an

assessment that represents the perceived distinctions between the patient's expectations of what is essentially received during the care cycle (Esposito and Dal Canton, 2014).

Virtual clinic technology is changing the quality, provision, and effectiveness of healthcare services (Choudhary et al., 2017). A virtual clinic refers to an online conference room for a healthcare provider and patient to meet. Within a virtual clinic, patients may review the first reports of diseases or injuries without an extensive wait for an in-person visit at a hospital or clinic (Chellaiyan et al., 2019). Up-to-date use of virtual clinic developed from phone use in the 1870s to reduce unnecessary workplace visits uses tablets or other devices to direct voice, survey questions, email or text messages, pictures, and videos with or without a conference call. The virtual clinic continues to expand and has evolved into a wider sector of patient care encompassing broadcasting and information technology (Shah and Schulman, 2021). This digital technology has the ability to give continuous healthcare touch to different characteristics of patient care from remote

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geographic regions for extended periods of time. In a virtual clinic, a healthcare expert through a video connection may view patients. This minimizes the need for travel and decreases the risk of infection or additional injury (Davoud, 2017). In a study conducted by Sept et al. (2020), it is been shown that diagnostic accuracy or agreement of virtual care looks equivalent to clinical follow-up visits.

The use of virtual clinic technology has increased significantly over the past years, mainly due to long waiting times, reduced primary care appointments, and individuals' desire for immediate care (Yakobi, 2017). Several tools have been developed to monitor and improve the quality of virtual clinic technology. Among them, patient satisfaction is one of the most common and prevalent tools (Layfield et al., 2020). Furthermore, the future success of virtual clinics will depend on the patient's acceptance of such technologies. It is therefore imperative that patients' satisfaction and experiences are fully evaluated (Kissi et al., 2020). Studies have shown a high level of patient satisfaction with the virtual clinic service, but there is a significant lack of evaluation of patient satisfaction with the virtual clinic. Evaluating patients' satisfaction with the virtual clinic is important not only for patients but also for healthcare providers and healthcare institutions (Rutherford et al., 2020).

Patient satisfaction is a key component in the quality of care and is an element in the dissemination and adoption of virtual clinic services (Tenforde et al., 2020). Evaluating patient satisfaction has become an essential indicator of healthcare performance and outcomes. Nevertheless, no studies of patient satisfaction with the virtual clinic have been conducted in Saudi Arabia. This leads to healthcare providers not being able to effectively evaluate the quality of care delivered. Thus, this study will evaluate patient satisfaction for patients using the virtual clinic as well as identify differences in patient satisfaction levels with virtual clinic between different demographic characteristics.

2. Material and methods

2.1. Research design

The quantitative descriptive correlational design was utilized to achieve the study's aim.

2.2. Study setting

The study was conducted in an outpatient virtual clinic at three governmental hospitals in Jazan, namely Abu Arish General Hospital, Baesh General Hospital, and Sabya General Hospital. The virtual clinic is precisely the practice of employing a "virtual" technology like teleconferencing to "visit" a patient. It will provide follow-up, referral, further investigation, order, and medication refill by telephone. Moreover, it will empower patients to

share their opinions in the decision-making process of follow-up and management plans.

2.3. Sample description

The target population for this study was adult patients (age greater than 18) with different diagnoses who were receiving treatment for their disease at virtual clinics in governmental hospitals in Jazan City. A convenience sampling approach was applied to attain the required sample size. A convenience sample was collected by contacting the participants who were accessible at the data collection time until the desired sample size was met.

2.4. Inclusion and exclusion criteria

Patients will be chosen if they can a. speak, read, and write Arabic; b. be oriented to time, place, and person; c. be eighteen years of age or older; and d. provide informed consent. Patients will be excluded from the study if they are a) aged below 18 years or b) unable to provide informed consent.

2.5. Sample size

In order to conduct a power analysis for the current study, the G*power software was used to calculate the sample size. Assuming 0.80 power with an alpha error of 0.05 and an effect size of 0.5, the total sample size was 290 subjects to have confidence in the findings. Over-sampling, on the other hand, is done to gain a greater grasp of the phenomena. In this study, 305 patients made up the total sample size.

2.6. Study instruments

2.6.1. Sociodemographic questionnaire

In order to collect demographic data, researchers created a demographic questionnaire. Sociodemographic factors included gender, marital status, educational level, and age.

2.6.2. The telehealth satisfaction scale (TeSS)

The Telehealth Satisfaction Scale (TeSS) is a 12-item scale established by Linassi and Shan (2005) to assess patient satisfaction with telemedicine services in terms of quality of care. Each item is rated on a Likert-like scale of 4 points, ranging from 1=poor to 4=excellent. The total score on the TeSS can range from 12 to 48, with higher scores indicating higher satisfaction. According to the developers of the original questionnaire, internal consistency was 0.93, which indicated robust correlations between items of the questionnaire. Furthermore, in a study by Otten et al. (2016) the Cronbach alpha of TeSS was 0.88. The content validity was confirmed by the developers of the original questionnaire through a

thorough examination of the questionnaire by a panel that consisted of fourteen experts, including physicians, nurses, and specialists in telemedicine. The content validity index was 0.9. In the current study, Cronbach's alpha was 0.94, showing that TeSS has extremely robust internal consistency.

2.7. Data collection procedure

Data were collected from June 2022 to August 2022. Participants were recruited from virtual clinics in participating hospitals. After patients' approval to participate in the study, a meeting was held with the hospital's Information Systems Manager to determine a technique for acquiring the names of patients getting treatment at outpatient clinics and other data. As well, arrangements were made with the head nurse to perform the study at a time of the day when it would cause negligible meddling with the daily procedures of the clinic.

After the researcher explained the nature of the study in detail to participants through an oral script, participants provided signed informed consent before the beginning of the study in the outpatient clinic. Patients who visited the outpatient clinics for a follow-up appointment after getting virtual clinic care were identified, and online surveys were produced and submitted to their phone numbers using Google Forms. The answers of patients were saved in a protected computer file for further data processing. The entire questionnaire consists of a total of 16 questions. The questionnaires took about 10-15 minutes to complete.

2.8. Analysis of data

The data were analyzed using the Statistical Package for Social Science (SPSS) SPSS®-PC version 28 for Windows. A significance level of 0.05 was used for every statistical analysis. Descriptive statistics were utilized to characterize the demographic features of the sample and the Telemedicine Satisfaction Questionnaire (TeSS). The internal consistency reliability of TeSS in measuring interest variables will be assessed using Cronbach's alpha coefficient.

An independent sample t-test will also be used to examine differences in the level of satisfaction with respect to gender. A one-way analysis of variance (one-way-ANOVA) will be used to examine differences in the level of satisfaction with respect to education level, age groups, and marital status.

3. Result

3.1. Participants' sociodemographic profiles

A total of 305 patients took part in this study, with a response rate of 92%. More than half of the participants (58.7 %) were female, 54.8 % were married, and their ages varied from 18 to 98 years, with a mean (SD) of 39.19 (19.19). At the time of

data collection, patients had varying educational levels, but the most prevalent educational level was university (36.1%) (Table 1).

Table 1: Patients' socio-demographic characteristics (n= 305)

Variable	Mean	SD	n(%)
Age	39.19	19.19	
Age Groups			
<= 28			106 (34.8)
29 - 43			102 (33.4)
>44			97 (31.8)
Gender			
Male			126 (41.3)
Female			179 (58.7)
Marital Status			
Single			96 (31.5)
Married			167 (54.8)
Divorced			19 (6.2)
Widow			23 (7.5)
Educational level			
Primary school			109 (35.7)
Secondary school			86 (28.2)
University education			110 (36.1)

SD= Standard deviation

3.2. The results of patients' satisfaction level

Telehealth Satisfaction Scale (TeSS) results showed that patients had a mean level of satisfaction of 38.17 (SD=8.83). The study found that patients expressed a high degree of satisfaction with their virtual clinic services (Table 2). The average scores varied from 3.52 (SD=0.69) for patient privacy to 2.75 (SD=1.13) for the visual quality of the equipment. The majority of scores on the scale items averaged higher than 3, indicating a rating of 'good' to 'excellent' satisfaction.

3.3. The results of relationship between patients' satisfaction level with the virtual clinic and sociodemographic factors

An independent-sample t-test and one-way ANOVA were used to examine the difference in the total level of satisfaction of patients with their experience regarding virtual clinics with respect to gender, age, marital status, and educational level. Based on the results of the study, the mean level of satisfaction was not statistically significant based on gender, age, marital status, and educational level at $p < 0.05$ (Table 3).

4. Discussion

Virtual clinic is fast gaining recognition as an advancement in healthcare service delivery that may alter the standard of medical care, especially in outpatient clinics, though not fully used yet in all healthcare facilities in Saudi Arabia. Recent research revealed patient satisfaction with virtual clinic services treatments was growing (Heo et al., 2021; Atmojo et al., 2020; Müller et al., 2017).

This study examined the level of satisfaction among patients who visited the virtual clinic. This research study indicated a mean level of satisfaction was 38.17 (SD=8.83), suggesting that patients

exhibited a high degree of satisfaction with their virtual clinic services.

Table 2: Responses of patients to a 12-item telehealth satisfaction scale (n = 305)

Item no. statement	Excellent n(%)	Good n(%)	Poor/Fair n(%)	Mean (SD)
How satisfied were you with:				
1. The voice quality of the equipment	120 (39.3)	88 (28.9)	97(31.8)	2.96 (1.02)
2. The visual quality of the equipment	105 (34.4)	80 (26.2)	120 (36.3)	2.75 (1.13)
3. Your personal comfort in using the Telehealth system	139 (45.6)	83 (27.2)	83 (27.2)	3.09 (1.00)
4. The length of time to get this appointment	126 (41.3)	88 (28.9)	91 (29.8)	3.01 (1.01)
5. The ease of getting to the Telehealth department (circle one: taxi, private, walked, CHR, staff)	124 (40.7)	70 (23.0)	111 (36.4)	2.83 (1.18)
6. The length of time with the Memory Clinic team	146 (47.9)	95 (31.1)	64 (21)	3.21 (.90)
7. The explanation of your treatment by the Memory Clinic team	163 (53.4)	102 (33.4)	40 (13.1)	3.36 (.82)
8. The thoroughness, carefulness and skillfulness of the Memory Clinic team	168 (55.1)	96 (31.5)	41 (13.5)	3.37 (.82)
9. The courtesy, respect, sensitivity, and friendliness of the Memory Clinic team	175 (57.4)	99 (32.5)	31 (10.2)	3.45 (.72)
10. How well your privacy was respected	188 (61.6)	94 (30.8)	23 (7.6)	3.52 (.69)
11. How well the staff answered your questions about the equipment?	165 (54.1)	107 (35.1)	33 (10.8)	3.41 (.75)
12. Your overall treatment experience at using Telehealth?	151(49.5)	88 (28.9)	66 (21.6)	3.22 (.91)

SD= Standard deviation

Table 3: Difference between sociodemographic factors and telehealth satisfaction scale (n = 305)

Variable		Mean	SD	t/f -Value	df	P-value*
Gender	Male	39.04	8.87	1.438	303	.151
	Female	37.56	8.78			
Age	<= 28	37.50	8.79	.501	2,302	.607
	29 - 43	38.38	8.78			
	>44	38.69	8.98			
Marital status	Single	38.19	8.21	.359	3,301	.783
	Married	37.85	9.36			
	Divorced	39.26	7.11			
	Widow	39.57	8.97			
Educational level	Primary school	38.26	8.29	.012	2,302	.988
	Secondary school	38.20	9.16			
	University education	38.07	9.17			

*: Significant at $p \leq 0.05$

More than half of patient participants believe that virtual clinic services offer superior explanations regarding treatment and provide courtesy, respect, sensitivity, and friendliness. When compared to other recent studies, this finding suggests a comparable degree of satisfaction (Baranowski et al., 2019; Pflugeisen and Mou, 2017; Iqbal et al., 2017; Poulsen et al., 2015; Abdulwahab and Zedan, 2021; Alharbi et al., 2021). On the other hand, other studies reported a slightly lower level of satisfaction (Hsueh et al., 2012; Lua and Neni, 2012).

Müller et al. (2017) examined patient satisfaction when utilizing virtual clinic services. Researchers conducted a randomized controlled trial in one field of neurology outpatient clinics to investigate satisfaction longitudinally for 279 patients receiving treatment and follow-up for non-acute headache attacks using virtual clinic services. According to the study, females were significantly more satisfied with the experience of virtual clinic services than males (p -value=0.027), in contrast, patients' satisfaction was not affected by their age group or educational level. The researchers also found that patients using virtual clinics did not have a lower satisfaction rate after a year as compared to patients who used conventional clinic appointments. Similarly, Abdulwahab and Zedan (2021) used a questionnaire design in a cross-sectional study to identify variables influencing patient perceptions and satisfaction with virtual clinic services. Patients (n=235) were

surveyed on their access to virtual clinics, medical specialties, and overall satisfaction with the services. According to the study, women were significantly more satisfied with the experience of virtual clinic services than men (p -value=0.001), whereas age group and educational level did not affect patients' satisfaction. Moreover, Alharbi et al. (2021) found that male patients were more likely to be satisfied with their experience of virtual clinics. Age also had a significant effect on the level of satisfaction.

The current study result showed that patients' satisfaction levels with their experience of virtual clinics are similar between males and females, and this is not in line with Müller et al. (2017), Abdulwahab and Zedan (2021), and Alharbi et al. (2021). On the other hand, the result of the current study is similar to the findings of Abdulwahab and Zedan (2021) and Müller et al. (2017) regarding age and educational level, which revealed that patient satisfaction levels are comparable across age groups and educational levels. Furthermore, it has been revealed in this study that there are no statistically significant differences in satisfaction levels among different marital statuses. This result is comparable to that of Alhajri et al. (2022) which showed that marital status was not significantly associated with patient satisfaction with virtual clinic service. One benefit of this study is that the researchers studied patients' perspectives on utilizing virtual clinic services across a range of clinics and specializations,

which boosts the generalizability of study results. The researchers believe there is a high proportion of patient satisfaction with courtesy, respect, sensitivity, and friendliness, with respected privacy, and with staff answering inquiries regarding the equipment.

4.1. Implications for nursing practice

Evaluating patient satisfaction with virtual clinic services is important to assess whether there is a need for improvement in virtual clinics. Thus, this study clarifies the significance of virtual clinic evaluation in healthcare. It encourages healthcare professionals to conduct both preliminary and continuing evaluations of the virtual clinic services delivered. By evaluating patient satisfaction with virtual clinic services, consistent maintenance of high patient satisfaction levels and the implementation of essential interventions can occur.

4.2. Limitations

In interpreting the findings of this study, a number of limitations must be taken into account. The study only looked at age, education, marital status, and gender, and the researchers note that a larger proportion of responders were female and had completed primary school, which may be distinct to the geographical region, but some other factors may also influence patient satisfaction with the virtual clinic. Another limitation is that the study was only done in one location, restricting the generalizability of the results. Moreover, since this is a cross-sectional analytic study, sociodemographic correlations were emphasized, although the conclusion and direction of the observed interactions are difficult to explain.

4.3. Conclusion

This study demonstrated that patients in Saudi Arabia are generally satisfied with virtual clinic services. Although the study's findings show the importance of virtual clinic services and the high level of patient satisfaction, more investigation in other areas is required to enhance these results. In order to further assess patient satisfaction levels, other sociodemographic information may be taken into accounts such as monthly income and employment status, health history, clinical presentation or co-morbidities, and whether the patient presented to the clinic with an acute or chronic condition.

The familiarity of patients and their desire to adopt virtual clinic services in Saudi Arabia should be more examined. Patients should be taught about virtual clinic services and motivated to utilize them. Patient education and support programs may be implemented in primary care facilities, hospital public areas, and after discharge, or by text messaging, patient portals, or by deploying posters

at healthcare facilities to notify people of the services and how to get access to them.

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Compliance with ethical standards

Ethical considerations

The Saudi Ministry of Health Institutional Review Board approved the current study (Ref. No.2179). In addition, the author informed the directors of the virtual clinics. Patients were convinced that completing the questionnaires had no influence on the fulfillment of their treatment plan within the virtual clinic. Patients were advised that engagement in the study was fully elective and that their anonymity and confidentiality would be maintained.

Conflict of interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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