

Evaluation of the Aspects Affecting Patients' Satisfaction toward the Virtual Clinic Experience in Makkah 2024

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Abstract:

Background: Patients can receive prescriptions for drugs and medical advice from healthcare experts via these digital means. In addition to being a factor in the adoption and spread of virtual clinic facilities, patient satisfaction is a critical component of service quality. Patient satisfaction evaluation is becoming an essential measure for assessing the effectiveness and results of healthcare. **The study aimed:** To evaluate the factors that influence patients' satisfaction toward the virtual clinic experience in Makkah, Saudi Arabia 2024. **Methods:** A cross-sectional study was conducted using a convenience sample of 300 patients visiting a virtual clinic at three general hospitals in Makkah, Saudi Arabia. Tool for evaluating factors affecting patients' satisfaction toward the virtual clinic experience developed by researchers after extensive literature review; which included six sections: technology access and usability, communication and interaction, quality of care, privacy and trust, cultural and regional factors, overall satisfaction to get a holistic view of patient satisfaction and willingness to recommend the virtual clinic. **Results:** the majority of study participants satisfied with using a virtual clinic for healthcare services. 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 were high levels of satisfaction with the service. **Conclusion:** The study's conclusions highlight the value of virtual clinic services and the high degree of patient satisfaction, although further research in other areas is needed to improve these findings.

Keywords: Patient satisfaction, Virtual clinic, Experience, factors affecting.

Introduction:

Health service directors and managers now face a significant challenge in assessing the quality of integrated service outcomes⁽¹⁾. Prospective of customers, health status, personal characteristics, and the health system are all factors that affect patient satisfaction or dissatisfaction⁽²⁾. Nonetheless, patient satisfaction has become a popular outcome measure and is a reliable gauge of the caliber of healthcare. Patient satisfaction surveys are becoming more widely accepted as metrics for assessing how well the hospital service delivery system is performing⁽³⁾. According to one definition, patient satisfaction measures the perceived differences between the patient's expectations and what they actually receive during the course of their care⁽⁴⁾.

Technology used in virtual clinics is altering the efficacy, availability, and quality of medical care⁽⁵⁾. A virtual clinic is an online meeting space where a patient and a healthcare professional can meet. Patients can examine the initial reports of illnesses or injuries in a virtual clinic without having to wait a long time for an in-person visit at a hospital or clinic⁽⁶⁾. Using tablets or other devices to direct speech, survey questions, email or text messages, images, and videos with or without a conference call is the modern approach to virtual clinics, which were established from telephone use in the 1874s to decrease needless workplace trips. The virtual clinic is still growing and has developed into a more comprehensive area of patient care that now includes information technology and broadcasting⁽⁷⁾.

This digital technology can provide a continuous healthcare touch to various aspects of patient care from far-flung geographic locations over long periods of time. In a virtual clinic, a medical professional can view patients via a video connection. In addition to reducing the need for travel, this lowers the chance of infection or further harms⁽⁸⁾.

A study by Sept et al. (2020)⁽⁹⁾ found that virtual care appears to be as accurate or consistent in diagnosing conditions in clinical visits. Due to excessive wait times, fewer primary care visits, and people's need for quick care, the usage of virtual clinic technology has grown dramatically in recent years⁽¹⁰⁾. A number of tools are available to track and enhance the quality of technology used in virtual clinics. One of the most widely used and common instruments among them is patient satisfaction⁽¹¹⁾. Additionally, patients' adoption of such technology will determine the future viability of virtual clinics. Therefore, a thorough assessment of patients' experiences and satisfaction is essential⁽¹²⁾.

Research has indicated that patients are very satisfied with the virtual clinic service; nonetheless, there is a notable deficiency in assessments of patient satisfaction with the virtual clinic. Assessing patients' satisfaction with the virtual clinic is crucial for healthcare organizations and clinicians as well as patients⁽¹³⁾. Patient satisfaction is crucial to the standard of care and plays a role in how patients take advantage of virtual clinic services⁽¹⁴⁾.

Patient satisfaction evaluation is becoming a crucial metric for assessing the effectiveness and results of healthcare. However, little study on Saudi Arabian patients' satisfaction with the virtual clinic has been done. This makes it difficult for medical professionals to assess the standard of care provided. As consequently, this study aimed to evaluate the factors that influence patients' satisfaction toward the virtual clinic experience in Makkah, Saudi Arabia 2024.

Methods:

A cross-sectional study was utilized to achieve the study's aim on patients visiting an outpatient virtual clinic at three general hospitals in Makkah, Saudi Arabia. The idea behind a virtual clinic is to "visit" a patient using "virtual" technology. Referral, additional investigation, ordering, and medicine refills will all be done over the phone. Additionally, it will enable patients to express their views during the visit and care plan decision-making process. In this study, the target group consisted of adult patients (over the age of 18) receiving treatment for various illnesses at virtual clinics. The necessary sample size was attained by using a convenience sampling technique.

Participants who were available during the data collection period were contacted in order to obtain a convenience sample until the required sample size was reached. Patients excluded from the study are those who are aged below 18 years or unable to provide informed consent. The sample size for the present study was determined using the G*power software in order to perform a power analysis. To be confident in the results, a total of 285 participants were needed, considering 0.80 power, 0.05 alpha error, and 0.5 effect size. Alternatively, over-sampling is done in order to better understand the phenomenon. The total sample size for this study consisted of 300 patients.

In order to collect demographic information, researchers created a demographic questionnaire. Socio-demographic factors included age, gender, educational level, and have you used a virtual clinic before. Tool for evaluating factors affecting patients' satisfaction toward the virtual clinic experience developed by researchers after extensive literature review⁽⁷⁻¹⁴⁾; which included **six sections**: **Technology Access & Usability**: This section assesses how easy and accessible the virtual clinic platform is for patients, including technical issues they may have faced. **Communication & Interaction**: This section focuses on how effectively healthcare providers communicated with patients and whether they felt the interaction was supportive and empathetic.

Quality of Care: Here, the focus is on the perceived quality of care patients received through virtual consultations. **Privacy and Trust**: This section gauges how comfortable patients felt about sharing personal and medical information in a virtual environment, which is crucial in evaluating patient trust. **Cultural and Regional Factors**: Considering Makkah's unique socio-cultural context, it is important to evaluate whether these factors influence virtual clinic use and satisfaction. **Overall Satisfaction**: This section aims to get a holistic view of patient satisfaction and willingness to recommend the virtual clinic. In the current study, Cronbach's alpha was 0.94, showing that tool has extremely robust internal consistency.

Data was gathered in 2024 between January and March. Participants were gathered from participating hospitals' online clinics. Following the patients' consent to take part in the study, a conference with the hospital's information systems manager was convened to decide on a method for obtaining further data, including the identities of patients receiving treatment at outpatient clinics. Additionally, plans were arranged with the head nurse to conduct the study during a time of day that would not significantly disrupt the clinic's regular operations.

Before the study started in the outpatient clinic, participants completed an informed permission form after the researcher had explained the study's purpose to them orally. Google Forms was used to create online surveys and send them to the phone numbers of patients who had visited the outpatient clinics following virtual clinic care. For additional data processing, the patient responses were stored in a secure computer file. SPSS version 28 was used to analyze the data. All statistical analyses were conducted at a significance level of 0.05. The sample's demographic characteristics and the patient satisfaction survey were described using descriptive statistics.

Results:

A total of 300 patients took part in this study, with a response rate of 100 %. **Table (1)**: shows that more than half of the participants (58.3 %) were female, and their ages varied from 18 to 68 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 Bachelor's Degree (43.3%). The majority of study participants used a virtual clinic before (91 %).

Table (1) Demographic Information about study participants(n = 300)

| Demographic Information | | (n) % |
|---|--|--------------|
| Age: | <input type="radio"/> 18-30 | 65 (21.6 %) |
| | <input type="radio"/> 31-45 | 125 (41.7 %) |
| Gender: | <input type="radio"/> 46-60 | 60 (20 %) |
| | <input type="radio"/> 60+ | 50 (16.7 %) |
| mean (SD) 39.19 (19.19) | | |
| Gender: | <input type="radio"/> Male | 125 (41.7 %) |
| | <input type="radio"/> Female | 175 (58.3 %) |
| Educational Level: | <input type="radio"/> High School or below | 109 (36.3 %) |
| | <input type="radio"/> Bachelor's Degree | 130 (43.3 %) |
| Location: | <input type="radio"/> Master's Degree | 35 (11.7 %) |
| | <input type="radio"/> Doctorate | 26 (8.7 %) |
| Have you used a virtual clinic before? | <input type="radio"/> Makkah city | 255 (85 %) |
| | <input type="radio"/> Other (specify) | 45 (15 %) |
| Have you used a virtual clinic before? | <input type="radio"/> Yes | 273 (91 %) |
| | <input type="radio"/> No | 27 (9 %) |

Table (2) shows that technology access & usability of study participants, regarding easy to access the virtual clinic platform the majority of study participants reported easy access (75%). According to experience study participants (75%) reported that have technical issues during your consultation. 97% of study participants use mobile phone to access the virtual clinic. 73% of study participants' rated overall technical performance; 52% of study participants receive adequate technical support when needed.

Table (2) Technology Access & Usability of study participants with the virtual clinic platform

| Technology Access & Usability | | | | |
|--|-----------------------------------|--------------------------|------------------------|-------------------------|
| <ul style="list-style-type: none"> How easy was it to access the virtual clinic platform? | | | | |
| Very easy (7 %) | Easy (75 %) | Neutral (10 %) | Difficult (5 %) | Very difficult (3 %) |
| <ul style="list-style-type: none"> Did you experience any technical issues during your consultation (e.g., connectivity, software glitches)? | | | | |
| <input type="radio"/> Yes (please specify) (25%) | <input type="radio"/> No (75%) | | | |
| <ul style="list-style-type: none"> What device did you use to access the virtual clinic? | | | | |
| Mobile phone (97%) | Tablet (3%) | Desktop computer (0%) | Other (please specify) | - |
| <ul style="list-style-type: none"> How would you rate the overall technical performance (connection, video, sound quality)? | | | | |
| Excellent (17%) | Good (73%) | Fair (7%) | Poor (3%) | Very poor |
| <ul style="list-style-type: none"> Were you able to receive adequate technical support when needed? | | | | |
| Yes (52%) | No (13%) | | Not needed (35%) | |

Table (3) shows communication and interaction of study participants with the virtual clinic platform. The majority (69%) of study participants agree about the healthcare provider listened attentively to your concerns. Study participants very satisfied and satisfied (90%) with the provider's empathy and professionalism during the consultation. 67% of study participants feel comfortable discussing your health issues virtually. Study participants very satisfied and satisfied (75%) with the response time.

Table (3) Communication & Interaction of study participants with the virtual clinic platform

| Communication & Interaction | | | | |
|--|-----------|---------|--------------|-------------------|
| <ul style="list-style-type: none"> Did you feel that the healthcare provider listened attentively to your concerns? | | | | |
| Strongly agree | Agree | Neutral | Disagree | Strongly disagree |
| (11%) | (69%) | (7%) | (10%) | (3%) |
| <ul style="list-style-type: none"> How satisfied were you with the provider's empathy and professionalism during the consultation? | | | | |
| Very satisfied | Satisfied | Neutral | Dissatisfied | Very dissatisfied |
| (19%) | (71%) | (6%) | (4%) | (0%) |
| <ul style="list-style-type: none"> Did you feel comfortable discussing your health issues virtually? | | | | |
| Yes | No | | | |
| (76%) | (24%) | | | |
| <ul style="list-style-type: none"> How satisfied were you with the response time (e.g., waiting for the consultation)? | | | | |
| Very satisfied | Satisfied | Neutral | Dissatisfied | Very dissatisfied |
| (13%) | (62%) | (9%) | (11%) | (5%) |

Table (4) shows quality of care among study participants with the virtual clinic platform. Study participants reported that 90% excellent and good rate the quality of care provided during the virtual consultation. 52% of study participants think the virtual consultation was same as in-person. 67% of study participants receive a clear diagnosis or treatment plan from your virtual consultation. 73% of study participants receive adequate information. 68% of study participants feel the virtual consultation mostly met your healthcare needs.

Table (4) Quality of Care among study participants with the virtual clinic platform

| Quality of Care | | | | |
|---|-------|------|------|-----------|
| <ul style="list-style-type: none"> How would you rate the quality of care provided during the virtual consultation? | | | | |
| Excellent | Good | Fair | Poor | Very poor |
| (23%) | (67%) | (8%) | (3%) | (0%) |
| <ul style="list-style-type: none"> Do you think the virtual consultation was as effective as an in-person consultation? | | | | |

| | | | |
|--|-------------------|----------------|----------------|
| Yes, more effective | Same as in-person | Less effective | Not sure |
| (18%) | (52%) | (23%) | (7%) |
| <ul style="list-style-type: none"> Did you receive a clear diagnosis or treatment plan from your virtual consultation? | | | |
| Yes | No | | Partially |
| (67%) | (20%) | (13%) | |
| <ul style="list-style-type: none"> Were you given adequate information (e.g., prescriptions, additional tests)? | | | |
| Yes | No | | Not applicable |
| (73%) | (20%) | (7%) | |
| <ul style="list-style-type: none"> Did you feel the virtual consultation met your healthcare needs? | | | |
| Fully met | Mostly met | Partially met | Did not meet |
| (22%) | (68%) | (10%) | (0%) |

Table (4) shows privacy and trust of study participants. 62% of study participants have confident in the privacy and security of your personal and medical data during virtual consultations. 64% of study participants have no concerns about the confidentiality of your consultation. 70% of study participants trust virtual healthcare platforms as much as in-person healthcare visits.

Table (5) Privacy and Trust of study participants

| Privacy and Trust | | | | |
|--|-----------|---------|---------------|----------------------|
| <ul style="list-style-type: none"> How confident are you in the privacy and security of your personal and medical data during virtual consultations? | | | | |
| Very confident | Confident | Neutral | Not confident | Not confident at all |
| (28%) | (62%) | (8%) | (2%) | (0%) |
| <ul style="list-style-type: none"> Did you have any concerns about the confidentiality of your consultation? | | | | |
| Yes (please specify) | No | | | |
| (36%) | (64%) | | | |
| <ul style="list-style-type: none"> Do you trust virtual healthcare platforms as much as in-person healthcare visits? | | | | |
| Yes | No | | Not sure | |
| (70%) | (9%) | | (21%) | |

Table (6) shows cultural and regional factors of study participants. 88% of study participants think virtual consultations are culturally appropriate in Makkah. 87% of study participants have no specific cultural considerations addressed during your consultation. 60% of study participants were convenient to use the virtual clinic considering Makkah's infrastructure.

Table (6) Cultural and Regional Factors of study participants

| Cultural and Regional Factors | | | | |
|---|------------|----------|---------------|---------------|
| <ul style="list-style-type: none"> Do you think virtual consultations are culturally appropriate in Makkah? | | | | |
| Yes | No | Neutral | Unlikely | Very unlikely |
| (88%) | (4%) | (8%) | (0%) | (0%) |
| <ul style="list-style-type: none"> Were there any specific cultural considerations addressed during your consultation? | | | | |
| Yes (please specify) | Neutral | Unlikely | Very unlikely | Very unlikely |
| (13%) | (87%) | (0%) | (0%) | (0%) |
| <ul style="list-style-type: none"> How convenient was it for you to use the virtual clinic considering Makkah's infrastructure (e.g., internet access, religious events)? | | | | |
| Very convenient | Convenient | Neutral | Unlikely | Very unlikely |
| (35%) | (60%) | (2%) | (3%) | (0%) |

Table (7) overall satisfaction of study participants with virtual clinic; 64% of study participants overall satisfied with virtual clinic experience. 77% of study participants use a virtual clinic again for healthcare services. 78% of study participants recommend the virtual clinic to others. 57% of study participants likely to choose virtual consultations over in-person visits in the future.

Table (7) Overall Satisfaction of study participants with virtual clinic

| Overall Satisfaction | | | | |
|--|-----------|---------|--------------|-------------------|
| <ul style="list-style-type: none"> How satisfied are you overall with your virtual clinic experience? | | | | |
| Very satisfied | Satisfied | Neutral | Dissatisfied | Very dissatisfied |
| (26%) | (64%) | (7%) | (3%) | (0%) |
| <ul style="list-style-type: none"> Would you use a virtual clinic again for healthcare services? | | | | |
| Yes | No | Neutral | Unlikely | Very unlikely |
| (77%) | (4%) | (19%) | (0%) | (0%) |
| <ul style="list-style-type: none"> Would you recommend the virtual clinic to others? | | | | |
| Yes | No | Neutral | Unlikely | Very unlikely |
| (78%) | (4%) | (18%) | (0%) | (0%) |
| <ul style="list-style-type: none"> How likely are you to choose virtual consultations over in-person visits in the future? | | | | |
| Very likely | Likely | Neutral | Unlikely | Very unlikely |
| (33%) | (57%) | (6%) | (4%) | (0%) |

Discussion:

While still not fully implemented in all Saudi Arabian healthcare facilities, virtual clinics are quickly becoming recognized as a breakthrough in healthcare service delivery that could change the

standard of medical care, particularly in outpatient clinics. According to recent studies, patient satisfaction with treatments provided by virtual clinics was increasing⁽¹⁵⁻¹⁷⁾. This study evaluated the factors that influence patients' satisfaction toward the virtual clinic experience in Makah, Saudi Arabia 2024. This research study indicated that the majority of study participants revealed a high degree of satisfaction with their virtual clinic services.

More than half of study participants believe that use a virtual clinic again for healthcare services regarding treatment and provide courtesy, respect, sensitivity, and friendliness. When compared to other recent studies, this finding suggests a comparable degree of satisfaction⁽¹⁸⁻²³⁾. On the other hand, other studies reported a slightly lower level of satisfaction^(24, 25). **Müller et al., (2017)**⁽¹⁷⁾ investigated how satisfied patients were with virtual clinic services. In order to examine satisfaction over time for 279 patients receiving treatment for non-acute headache attacks utilizing virtual clinic services, researchers undertook a randomized controlled experiment in one area of neurology outpatient clinics.

This study found that while patients' satisfaction was unaffected by their age group or educational attainment, women were noticeably more satisfied with their virtual clinic services than men. Additionally, the researchers discovered that, after a year, patients who utilized virtual clinics did not have a lower satisfaction rating than those who used traditional clinic appointments. Similarly, **Abdulwahab and Zedan (2021)**⁽²²⁾ revealed that women were significantly more satisfied with the experience of virtual clinic services than men, whereas age group and educational level did not affect patients' satisfaction. Moreover, **Alharbi et al. (2021)**⁽²³⁾ found that Male patients were more likely to be comfortable with their virtual clinic experience. Additionally, the degree of satisfaction was significantly impacted by age.

The current study result showed that patients' satisfaction levels with their experience of virtual clinics are dissimilar between males and females, and this is in line with^(17, 22, and 23). On the other hand, the result of the current study is similar to the findings of **Abdulwahab and Zedan (2021)**⁽²²⁾ and **Müller et al. (2017)**⁽¹⁷⁾ 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. One benefit of this study is that the researchers studied patients' perspectives on utilizing virtual clinic services across a range of technology access and usability, communication and interaction, quality of care, privacy and trust, cultural and regional factors, overall satisfaction to get a holistic view of patient satisfaction and willingness to recommend the virtual clinic.

Assessing patient satisfaction with virtual clinic services is crucial in order to determine whether virtual clinics require improvement. This study elucidates the importance of virtual clinic evaluation in the medical field. It promotes initial and ongoing assessments of the virtual clinic services provided by medical professionals. High patient satisfaction levels may be consistently maintained and crucial improvements can be implemented by assessing patient satisfaction with virtual clinic services.

Conclusion:

According to this study, patients in Makkah, Saudi Arabia, are typically satisfied with the services provided by virtual clinics. The study's conclusions highlight the value of virtual clinic services and the high degree of patient satisfaction, although further research in other areas is needed to improve these findings. Other socio-demographic data, such as monthly income and employment status, medical history, clinical presentation or co-morbidities, and whether the patient arrived at the clinic with an acute or chronic condition, may be considered in order to further evaluate patient satisfaction levels. There should be an in-depth examination at Saudi Arabian patients' knowledge with and willingness to use virtual clinic services. Patients should be encouraged to use the virtual clinic services by being informed about them. In order to inform individuals about the services and how to access them, patient education and support programs can be conducted in primary care settings, hospital public areas, and after discharge.

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