

Patient experience with Telemedicine in Primary Health Care in Al-Ahsa, Saudi Arabia.

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Abstract:

Background: Telemedicine and virtual care have rapidly increased during the COVID-19 pandemic. Since then, the ministry of health in Saudi Arabia has adopted telemedicine to increase access to healthcare services and overcome geographical barriers. Our study aimed to measure patient satisfaction with virtual primary health care in the governmental primary health care centers in Al-Ahsa, and study possible predictors for better patient satisfaction. Methods: A cross-sectional study was done among patients who had visited virtual clinics in Al-Ahsa, Saudi Arabia primary healthcare centers. Everyone who had at least one virtual visit between JAN 2020 and MARCH 2022 received an open-source questionnaire. Demographic information, level of satisfaction, and inquiries about their virtual clinic experience were all collected. The Mann-Whitney U test and the Kruskal-Wallis test were used to compare computed frequencies and percentages for categorical variables between groups. Results: The questionnaire was completed by 391 patients, 53.5% of whom were female. The most frequently used virtual clinics were family medicine clinics. The inability to meet the healthcare professional face-to-face was cited by 54% of participants as the most significant disadvantage of virtual care. Patients' overall satisfaction with virtual clinics was 68.1%. Patient satisfaction was significantly correlated with age group, level of education, and being well-informed about the use of telemedicine. Conclusion: According to this study, virtual clinics gained a high level of satisfaction in Saudi Arabia. Our research found that satisfaction was related to age, education, and the type of clinic used. Future studies are recommended to be done in different areas of Saudi Arabia.

Keywords: Patient experience; Telemedicine; Primary Health Care; Saudi Arabia.

1. Introduction

The World Health Organization (WHO) defines telemedicine as "the delivery of healthcare services, where distance is a primary factor, by all medical care experts using information and communication technologies (ICTs) for the diagnosis, treatment, and prevention of diseases (1). Telemedicine design varies greatly depending on the technology used (2). It can be classified into two basic types: health professional to health professional or health professional to a patient. Telemedicine is becoming more popular and diverse, and it has been used in a wide range of specialties and conditions (3). Telemedicine was established almost 70 years ago (1) however, its use can be traced as far back as 500 BCE (4). The bright future of telemedicine will transform the delivery of health services away from hospitals and clinics into homes.

Telemedicine increases access to health care services by overcoming geographical barriers. As a result, it has successfully improved healthcare accessibility, distribution equity, quality, and cost-effectiveness. Its objective is to improve health outcomes (1). During the COVID-19 pandemic, the use of virtual care has increased because it aids in reducing contact with medical services offices, staff, and patients, thereby reducing the risk of COVID-19 spread. (5). Despite this, telemedicine has achieved varying levels of success in both industrialized and developing countries. This is explained partially by cultural and personal resistance to adopting different forms of services, especially in the healthcare sector as well as privacy and confidentiality concerns regarding the use of ICTs in telemedicine and finally; to the absence of a clear policy framework for telemedicine (1).

The Ministry of Health (MOH) established various platforms in Saudi Arabia, including 937 call centers, outpatient telemedicine clinics (virtual clinics), and the Sehaty smartphone application. Moreover, telemedicine was integrated with the training programs for all healthcare specialties (6) (7).

Patient satisfaction could be defined as a set of patient attitudes and perceptions about health care services (8) (9) in which their needs and expectations are met by the provider (10) (11) (12). Patient satisfaction is a realistic tool to evaluate the improvement of health care and is considered an effective measure of service quality because it is based on users' direct experiences. Furthermore, patient satisfaction has been linked to better patient's compliance with the treatment plan (13).

Our study aimed to measure patient satisfaction with virtual primary health care in Al-Ahsa government primary health care centers and study possible predictors for better patient satisfaction.

2. Materials and Methods

This study included patients who received virtual care in the primary healthcare centers in Al Ahsa region of Saudi Arabia. A cross-sectional study design was used, as well as a convenient sampling technique.

Our sample size was calculated to be 385 using a 95% confidence interval and a 5% margin of error (Www.raosoft.com)

We excluded patients who are not living in Al- Ahsa Saudi Arabia, those who were younger than 18, and patients who use private hospital telemedicine clinics.

Everyone who had at least one visit to virtual clinics between JAN 2020 and MARCH 2022 received an online questionnaire. It was an open-source validated questionnaire adapted from a previously published study (14). The information gathered in the questionnaire included:

- Participants' demographic information (age, gender, marital status, and level of education) as well as the type of clinic visited
- 9 questions to assess the patient's experience with the virtual clinic
- A question to rate their experience with the virtual clinic

Data analysis was done using IBM SPSS version 28.0.11 for descriptive data, Mean and standard deviation as well as frequencies and percentages (%) were used as indicated. The Mann-Whitney U test and the Kruskal-Wallis test were used for studying the impact of different predictors on patient satisfaction scores.

IRB approval was obtained from the King Faisal University Ethical committee and a clear understanding of the implications, and the purpose of the study was explained to the participants in the introduction part of the questionnaire. Informed consent was obtained from study subjects. All collected data will be confidentially kept, and it will only be used for scientific purposes.

3. Results

The survey was completed by 391 participants. The majority of them were female, aged between 18-39. 51.9% of participants were married and 74.9% of them studied at the university/college level. Around 70% of the participants reported utilizing family medicine virtual clinics while 7.2% reported consulting surgery clinics and 6.6% consulted dermatology virtual clinics.

More than half of the participants reported receiving sufficient information on telemedicine use and services before receiving the care (59.8%), while (40.2%) reported that they had not been properly educated about it previously.

Table 1. Demographic variables

Variables	Categories	N	Percentage %
Gender	Male	182	46.5%
	Female	209	53.5%
Age	18-39	293	74.0%
	40-59	94	24.0%
	>60	4	1.0%
Marital status	Unmarried	203	51.9%
	Married	188	48.1%
Level of education	Illiterate	3	0.8%
	Primary school	1	0.3%
	Middle school	24	6.1%
	Secondary school	41	10.5%
	Under-graduate	293	74.9%
	Postgraduate	29	7.4%

Table 2. Frequencies and percentages of Clinic categories

Variables	Categories	N	Percentage %
Clinic	Family medicine	279	71.4%
	General surgery	28	7.2%
	Dermatology	26	6.6%
	Obstetrics and Gynecology	17	4.3%
	Pediatrics	16	4.1%
	Ear, nose, and throat	15	3.8%
	Internal medicine	10	2.6%

In terms of patient satisfaction, good prior knowledge and sufficient prior education on telemedicine utilization had a statistically significant positive impact on satisfaction with virtual clinics ($P < 0.05$). Similar findings were observed with age groups where patients aged between 18–39 were more satisfied with their virtual clinic experience compared to the older patients. In terms of the specialty of care utilized, higher satisfaction was observed with family medicine and pediatrics consultations compared to other specialties e.g Dermatology, ENT, Obstetrics and gynecology and General surgery ($P < 0.05$). Gender had no significant effect on patient satisfaction and higher education level was associated with a lower level of satisfaction.

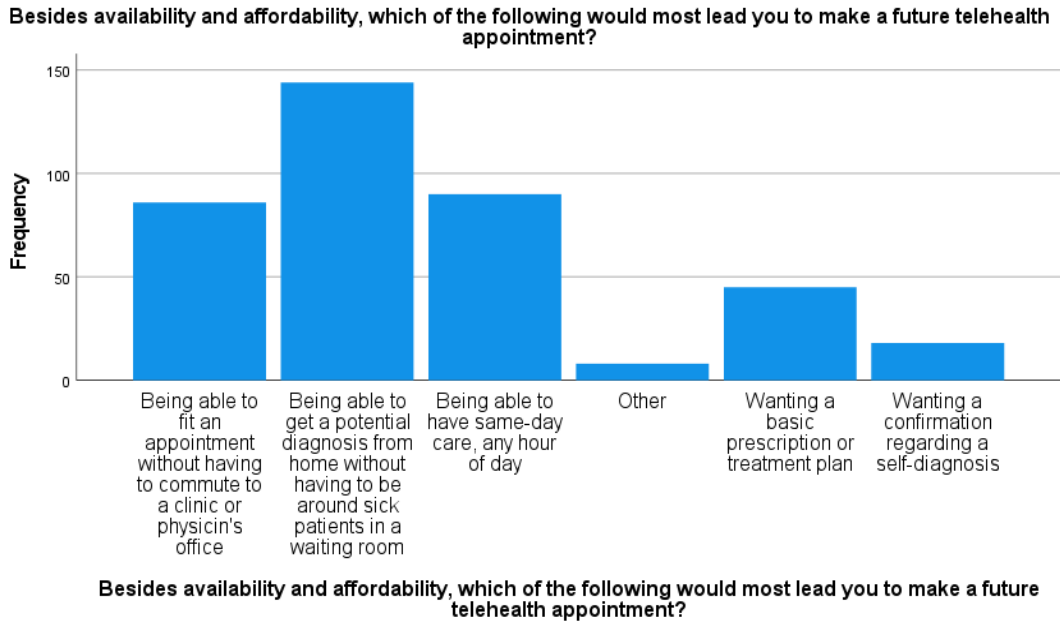


Figure 1: the advantages of telemedicine as cited by the patients.

The diagram shows the advantages of telemedicine and virtual clinics as mentioned by the participants. The ability to obtain a diagnosis without being in contact with sick patients and to have same-day care at any time of day was the most frequently mentioned benefits of virtual clinics (36.8% and 23%, respectively).

Other benefits mentioned included the ability to confirm a provisional diagnosis, obtain an electronic prescription, and schedule appointments without having to visit the clinic.

Compared to traditional clinics, quicker access to health care was the main benefit of the virtual clinics as viewed by the participants. Avoiding overcrowding of clinic and hospital waiting rooms was reported as the second advantage. Other advantages listed included: The ability to avoid unnecessary work excuses and leaves as well as commuting to health care facilities.

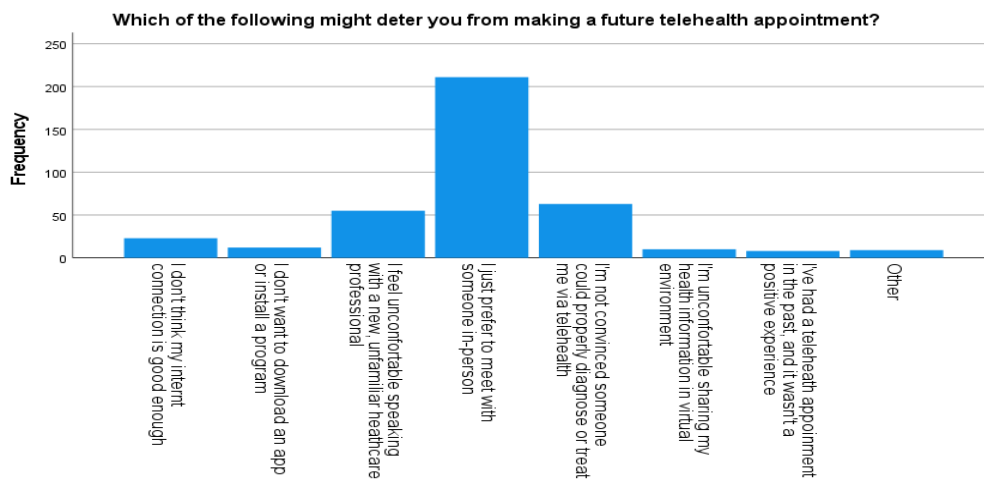


Figure 2: disadvantage of telemedicine as cited by patients.

On the other hand, more than half of our study population cited the most significant disadvantage as the inability to meet with healthcare professionals face to face. Many of our participants (16.1%) believed that virtual clinics would not allow healthcare professionals to accurately diagnose their condition. The third highest frequent disadvantage mentioned was that participants felt uneasy speaking with a healthcare professional they do not know (14.1%). Furthermore, the quality of health care via telemedicine is a concern for most participants (53.7%), followed by the misconception that virtual care cannot lead to accurate diagnosis (29.2%). Figure 2

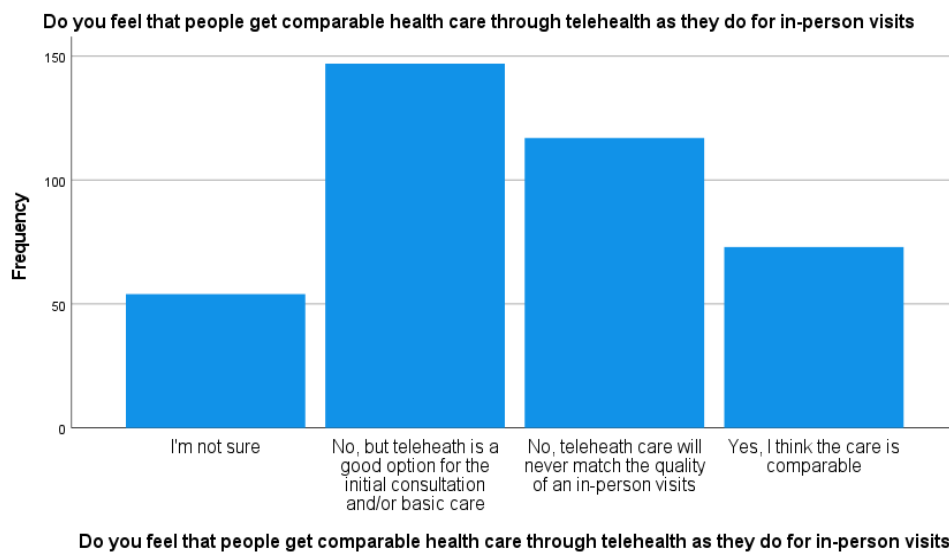


Figure 3: Perception of participants about comparison of telehealth with in-person visit

About one-third (37.6%) of the participants think Virtual clinics' quality will never be similar to that of outpatient clinics. Over a quarter of them (29.9%) think it was not comparable, but it was still a decent basic service. Others (18.7%) think that the two were comparable. Figure 3

In terms of overall patients' satisfaction with virtual care around 69.6% of the participants reported positive feedback while only 5.6% reported negative feedback.

4. Discussion

Opportunities to use, assess, and advance the practice of telemedicine have been made possible by the COVID-19 pandemic (14). Telemedicine is the practice of providing therapeutic services remotely utilizing computer software and telecommunications to diagnose and treat patients (15,16). One of the best ways to stop the virus's spread was to use online applications for various services, such as healthcare services (17).

Telemedicine is primarily employed in Saudi Arabia to improve the standard of treatment and accessibility for patients, especially those in remote and rural areas (18).

Our research investigated patients' levels of satisfaction with telemedicine and evaluated the impact of multiple predictors on patients' experience with virtual care. Age, level of education, and type of specialty (family medicine and pediatrics) were positively correlated with patient satisfaction ($P < 0.05$), while participants' gender had no significant impact on the overall experience. Similar findings were observed in a study conducted at Qassim University, where the correlation between satisfaction level and participant demographics, such as gender, marital status, and residency, was statistically insignificant

Furthermore, the age group (18–59 years) and (post-graduate and middle school) educational level were statistically significantly associated with satisfaction. The same study reported only 36.1% of women and 50% of men said that telemedicine was very convenient (20). Another study conducted in 2021 showed that The majority of patients' perceived disadvantages were technical problems (53.1%), followed by fewer personal interactions (30.4%), and age group greater than 40 years for approximately 55% of participants. Education below the university level was significantly associated with poor and average satisfaction ratings (19). The vast majority of participants thought that using telemedicine was convenient.

This outcome is comparable to research conducted in Riyadh, Saudi Arabia, to assess how the patients are satisfied with using online clinics (19). This could be attributed to the effort done by MOH during and after COVID-19 pandemic.

An inadequate level of education before using telemedicine services significantly affects the level of satisfaction. Similar findings were found in a study conducted in Riyadh, Saudi Arabia (19). A study showed that even though lack of awareness is a major barrier, culture is a greater issue affecting the use and adoption of telemedicine. It may be due to the infrastructure, education, economics, and political state of the country (20). Despite being a relatively new service and experience to the participants, this study's findings show that virtual consultations can be quickly implemented in adaptation to a coronavirus 19 sequelae with a high level of patient satisfaction and willingness to engage in the virtual clinic in the future.

Telemedicine has several advantages over traditional clinics. One of these is the capability of scheduling a consultation without the need for transport, flexibility, and availability of appointment time, and avoiding crowded waiting rooms and sick people. Most of the participants chose “The ability to get a diagnosis without the fear of being around sick patients” as the most significant benefit of telemedicine (19). This finding is in line with a study done in Riyadh, Saudi Arabia (19). This can be attributed to the ongoing COVID-19 outbreak and the fear of contact with people who might be sick.

Despite that, telemedicine also has cons. The most frequently mentioned drawback was not being able to interact with the healthcare provider in person. as shown in another

study done in 2021, in Saudi Arabia. This may be due to a lack of eye contact as well as physical and social contact. According to another study done in the USA, participants' concerns about the quality of telemedicine were the biggest drawback of telemedicine (21).

Patient satisfaction and quality of care go hand in hand. The virtual clinic's services would never have the same level of quality as that of conventional outpatient clinics, according to almost one-third of the study's participants. This is in contrast to a prior survey conducted in the USA, which revealed over 90% of participants believed that virtual clinics were superior to or on par with conventional outpatient clinics (22).

This study has both strengths and weaknesses. This is the first study that we are aware of conducted to measure patient satisfaction in Al Ahsa, Saudi Arabia. However, one of the principal drawbacks is the limited types of specialties offered by virtual care services. Most of our participants used online clinics for family medicine. The study's second drawback is that it concentrated on governmental PHC centers in Al- Ahsa only and excluded other centers in Al- Ahsa or any other Saudi Arabian city.

5. Conclusions

We concluded that the majority of participants had found the telemedicine service to be convenient. The level of satisfaction was substantially influenced by age, education, as well as the type of clinic visited. The most significant benefit was seen as being able to receive a diagnosis without having to worry about being near sick people. The biggest reported drawback for telemedicine is the inability to personally meet with a healthcare provider. Less than half of the participants also stated that they were not knowledgeable about how to use this facility. Despite all, there are certain restrictions on this study as the study sample was not distributed equally among the different clinics, and that the sample was solely drawn from government PHC facilities. Future studies are recommended to be done in different areas of Saudi Arabia.

Informed Consent Statement: Informed consent was obtained from all subjects involved in the study.

Conflicts of Interest: The authors declare no conflict of interest.

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