

Study of Patients' Satisfaction with different types of Telemedicine Services provided by the Ministry of Health in Saudi Arabia

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Abstract - One way to gauge the quality of healthcare is to look at how satisfied patients are with the system overall. Finding out how happy patients are with various telemedicine services offered by Saudi Arabia's Ministry of Health is the main goal of this research. The satisfaction of Saudi Arabian customers using telemedicine services was assessed in a cross-sectional survey. Customers of the 940 medical contact centre and the Sehha app, two telemedicine services, were surveyed using a rigorous random selection technique. Two hundred and fifty users of the 940 medical contact centre and the Sehha app were selected at random to fill out a pre-designed survey about their level of satisfaction with various aspects of the two health services. Out of 250 people who used telemedicine services, 83.14 percent were happy with the care they received overall, while 8.03 percent were unhappy. These days, telemedicine apps are employed by a lot of wealthy nations and even some underdeveloped ones to help provide healthcare to people faster for all sorts of medical issues. In Saudi Arabia, telemedicine services generally had good satisfaction ratings, with no discernible variation in ratings between the 940 medical contact centre and the Sehha app. Customers who used telemedicine services were generally pleased and were even willing to recommend them to others.

Keywords - Telemedicine, Medical Services, Applications, Satisfaction, Patient.

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INTRODUCTION

Healthcare may now be delivered remotely via telemedicine, which allows for faster communication and reduces the need for patients to physically visit clinics. This has several benefits, including increased cost-effectiveness, better access to treatment and medical records, higher service quality, and happier patients [1,2,3]. Whether it's via video, chat, or the phone, telemedicine is a win-win for healthcare practitioners, patients, and the system as a whole[4]. Telemedicine is a field that is always developing, both in terms of technology and our knowledge of it. It is adapting to new health settings and the requirements of populations[5].

Telemedicine apps have made it easier to monitor chronic illnesses with fewer non-urgent hospital visits, which is particularly helpful for vulnerable groups and children. Patients are now able to get the treatment they need without leaving the comfort of their own homes[6]. Many common healthcare procedures may be expedited with the use of telemedicine, including the delivery of prescriptions, the tracking of patient samples with labs, the execution of radiological exams, and the provision of timely information. Patients are less likely to miss appointments or not take their medications as prescribed when they may do so online.[7]

Saudi Arabia's Ministry of Health (MOH) committed substantial resources to the Saudi Telemedicine Network (STN), the country's first national telemedicine initiative, in 2011 with the goal of providing residents and citizens with high-quality health services and expanding the reach of telehealth. In 2018, the MOH announced rules that clarified the procedures for licencing and certification in telemedicine. [8,9] The Saudi Health Council (SHC) and the National Health Information Centre (NHIC) are subordinate to the Telemedicine Excellence Unit, which oversees and controls telemedicine as well as directs, assists, tracks, and evaluates its development and implementation throughout the Kingdom of Saudi Arabia. [10] It is imperative that laws governing privacy, access, and security be strengthened. When using telemedicine ICT, it is important to keep in mind the ethical considerations of privacy, dignity, and secrecy. As things stand, the Saudi Commission for Health Specialties (SCFHS) must authorise any training that a healthcare practitioner receives that teaches them how to utilise these services. [11] Legislation and specialised apps for remote care provision should be included of the telemedicine training curriculum. In order to improve patient care, increase financial performance, and speed up technological innovation, the Kingdom's Vision 2030 prioritises public-private partnerships, highlights the importance of a national

telemedicine network, and outlines steps to improve it. [12,13]

When it comes to integrating telemedicine, reshaping service delivery, and expanding access for remote regions, the Saudi healthcare system encounters obstacles in ensuring that telemedicine services are in line with the goals, objectives, and plans of healthcare organisations. [14,15] A large number of hospitals, both public and commercial, have signed with vendors to acquire the capability of remote patient management consultation. Problems with implementation and maintenance of telemedicine platforms by healthcare IT specialists, as well as security, privacy, dependability, and supportability, are additional obstacles to the system's smooth operation. [16,17] Patients' openness to and engagement with telemedicine platforms also poses a threat. Compatibility with Islamic law, social conventions, and traditions, as well as Saudi society at large, provide substantial cultural and social constraints. Other challenges to the effective usage and implementation of telemedicine include low levels of computer literacy and reluctance to embrace new methods. Another obstacle are language limitations. The majority of patients speak Arabic as their native language, but most of the systems in place were built in English, which makes translating them a programming problem.

important aspects that should be taken into account while planning the establishment of hospital information systems. The availability of high-quality healthcare for patients is enhanced when healthcare providers' capacity and skill sets are enhanced in relation to health technology. [18] In order for telemedicine services to run well, organisations need to improve their training programmes for healthcare practitioners. This is because providers are increasingly looking for more flexible training and education options, such as virtual webinars and video conferencing. [19] Patients' adoption and participation in telemedicine are also critical factors.

METHODOLOGY

- **Design of the study and recruitment of patients**

From May 2020 to October 2020, researchers in Saudi Arabia used a cross-sectional study design to gauge how satisfied customers were with telemedicine services. Consumers' satisfaction with the two telemedicine services, the 940 medical call centre and the Sehha app, were evaluated and compared using a systematic random sampling approach with a sample interval of 1:13. Based on the Saudi Ministry of Health's a p-value of 91%, a z-value of 2.576 (corresponding to a confidence level of 99%), a d-value of 5%, and a design effect of (1), the determined sample size was 245 consumers. A total of 250 customers consented to take part in the poll. The customers were surveyed using a pre-designed questionnaire that was sent over SMS and telephone.

The validity and reliability of each item on the questionnaire were examined by experts. The questionnaire collected data on socio-demographic variables, service type, and satisfaction with several service items using closed-ended questions. In order to find out how customers thought the services could be improved, we used an open-ended question.

Any customer who was willing to engage in the research and was at least 18 years old was enrolled. Customers whose primary complaint was not medical in nature or who had any other health condition that would prevent them from participating in the research were not eligible to participate.

- **Statistical Analysis**

Analysis was performed using Microsoft Excel, 2013 (Microsoft Corp., Redmond, Washington USA). To compare the two services in terms of satisfaction and socio-demographic characteristics, we used chi-squared test and student's t-test. A p-value less than 0.05 was used to determine the degree of significance.

- **Consideration of ethics**

Following participants' description of the research, their informed permission was obtained. No one other than the researchers conducting the study will have access to the personal data collected from the customers. Exclusion criteria included a participant's refusal to take part in the research. An ethical review committee (the Central Institutional review board committee) inside the Saudi Ministry of Health examined and authorised the research proposal. The central IRB log number for this project is 20-91M, and the permission letter was provided in June 2020.

RESULTS

Two hundred and fifty users of the 940 medical contact centre and the Sehha app were selected at random to fill out a pre-designed survey about their level of satisfaction with various aspects of the two health services. in the 250 customers that took part in this survey, 50.2% were male, and their average age was 34.9 ± 9.89 years. Nearly 45% of the customers were located in the Riyadh region, and the vast majority were Saudi nationals (93.59%).

Table 1: Clientele Reached via Telemedicine in Saudi Arabia.

Region	Percentage Of Distribution
Riyadh	45%
Western Province	22%
Eastern Province	12%
Other Region	21%

The table displays detailed information on the standard attributes of the customers.1. Out of 250

individuals who used telemedicine services in Saudi Arabia, 83.14 percent were generally happy with the medical care they received from the ministry of health, while 8.03 percent were dissatisfied (p-value < 0.001). Patients were most satisfied with doctors' suggestions(77.29%), doctors' ability to communicate (83.53%), patients' ability to listen (85.14%), and the length of time they had to wait (67.87%).

Table 2.: Consumers' Essential Personal Details.

Variables	All telemedicine consumers (N=250)	940 medical call center's consumers (N=200)	Sehha application's consumers (N=45)
Mean age (in years)	34.90	34.90	34.96
Ages younger than 40 years (%)	72.23	71.81	73.91
Ages between 40-60 years (%)	25.21	25.00	26.09
60 years or older (%)	2.56	3.19	0
Saudi nationality (%)	93.59	94.15	91.3
Living Region			
Riyadh (%)	45.38	45.30	45.65
Western province (%)	21.96	22.65	26.09
Eastern province (%)	11.65	10.35	17.40
Other Regions (%)	21.01	21.70	10.86

Table 3: An Analysis of Telemedicine Users' Satisfaction.

Telemedicine Services	Satisfied	Neutral	Unsatisfied
An Analysis of Telemedicine Users' Satisfaction			
Physician's Communication Skill	83.53	8.21	9.78
Physician's Recommendations	77.29	19.15	10.26
Waiting time	67.87	19.18	15.89
Overall Satisfaction	85.25	9.19	8.29

Of the 940 individuals who used the medical call centre, 53.2% were men, and the average age was 34.9 ± 10 years. In terms of the service provided by 940 medical call centres, 83.74% of customers were happy overall, while 8.86% were dissatisfied (p-value < 0.001). In order of importance, patients were most satisfied with the medical call centre doctors' suggestions(73.89%), communication abilities(83.25%), listening skills (82.75%), and wait time (73.89%).

Table 4: Views on 940 Medical Call Centre from Satisfied Customers. Levels of Contentment with 940 Medical Call Centre as Per Customers.

Telemedicine Services	Satisfied	Neutral	Unsatisfied
Physician's Listening Skill	82.75	9.25	10.15
Physician's Communication Skill	83.25	8.26	11.18
Physician's Recommendations	73.89	18.26	17.45
Waiting time	73.89	15.96	14.29
Overall Satisfaction	83.25	7.86	9.85

In contrast, the 45 users of the Sehha app who were part of this research had an average age of 34.96 ± 9.5 years, with men making up 36.96% of the sample. The majority of users (80.44%) were happy with the medical services provided by the Sehha app, whereas 4.35% were dissatisfied (p-value < 0.001). Figure.4 and table.2 show that 65.21 percent of users were satisfied with the suggestions made by doctors, 84.78 percent with the accuracy of their communications, 95.6 percent with the attentiveness of their listeners, and 56.51 percent with the length of time they had to wait for their appointment. Customers' neutral reactions to the 940 medical contact center's general medical services were 7.39 percent, while those to the Sehha app were 15.22 percent.

Table 5: Customer Satisfaction with Telemedicine Services and How Often They Use Them.

Variables	All telemedicine consumers (N=250)	940 medical call center's consumers (N=200)	Sehha application's consumers (N=45)	p-value
Physicians' recommendations (%)	72.29	73.89	65.21	0.49
Physicians' communication skills (%)	83.53	83.25	84.78	0.93
Physicians' listening skills (%)	85.14	82.75	95.65	0.53
Waiting time (%)	67.87	70.44	56.51	0.41
Overall medical service (%)	83.14	83.74	80.44	0.86
Used telemedicine more than once (%)	74.7	77.37	84.78	0.51
Advising others to use telemedicine (%)	93.98	75.5	100	0.74

Table 6: Rates of Customer Satisfaction with the Sehha Application.

Telemedicine Services	Satisfied	Neutral	Unsatisfied
Physician's Listening Skill	95.65	5.17	0
Physician's Communication Skill	84.74	18.45	0
Physician's Recommendations	62.21	32.47	9.45
Waiting time	56.51	39.75	10.15
Overall Satisfaction	80.25	18.45	5.26

With over three quarters of the 250 people who took part in the survey having utilised the Saudi Ministry of Health's telemedicine services at least once, and over three quarters of those people considering recommending them to others, the rates of satisfaction with these services are high.

Table 7: Think About Suggesting Telemedicine to Others.

Yes	No
100.00 %	7.5%

Table 8: Regularity of Telemedicine Consultations.

Once	More Than once
25.24%	74.37%

Regarding each telemedicine service, 77.37 percent of customers who called the 940 medical contact centre called many times, and 75.5% of those customers were thinking about recommending the service to others. But 84.78% of users have used Sehha more than once, and 100% of users are considering recommending it to others.

DISCUSSION

Shortly after the invention of the telephone (in 1879), the idea of telemedicine was published for the first time in the Lancet journal.¹⁶[An American magazine cover from 1925 included this idea of telemedicine; the cover depicted a doctor at his practice making a diagnosis on a patient who was laying in bed at home. Healthcare practitioners and patients continue to communicate by phone, radio, and video even now, after all these years. Some published studies in the 21st century assessed the level of satisfaction that customers had with telemedicine services. Patients reported high levels of satisfaction after receiving information about their diagnosis and treatment choices via video or telephone consultation, according to these earlier research. Estimates of customer satisfaction with Saudi Arabia's Ministry of Health's telemedicine services were presented in this research. [20] Overall, patients were pleased with their medical care, their doctors' advice, their ability to communicate and listen, and the length of time they had to wait for appointments. Additionally, the 940 medical contact centre and the Sehha app did not vary significantly ($p > 0.05$) in terms of customer satisfaction with respect to different issues. [21]The findings showed that 72.23 percent of the telemedicine users were under the age of 40, while 25.21 percent were in the middle-aged bracket (p -value < 0.001). Not enough people were satisfied with the waiting time and doctors' recommendations of all telemedicine services (74%). However, when compared to other satisfaction rates, such as those for doctors' communication skills, listening skills, and general medical services (p -value > 0.05), there were no significant differences. The oversaturation of consultations caused by the COVID-19 epidemic may explain the reduced satisfaction percentages with waiting time.[22]

Customer complaints about long wait times to speak with a doctor and the lack of an extension to reach a female doctor were the most often mentioned issues.[23] This final point is often brought up in Saudi Arabia, where some women are reluctant to discuss or undergo medical examinations related to gynaecological and obstetric consultations with male doctors.²³Patients' opinions on telemedicine services offered by different hospitals throughout the world have been the subject of several prior studies. After using telemedical consultations, patients were quite happy, according to five studies. In addition, compared to in-person appointments, many patients who participated in these trials really preferred telemedicine. [24] Consistent with the present study's results in Saudi Arabia, these earlier studies demonstrated the many benefits of telemedicine, including increased patient satisfaction, decreased hospital readmission rates, and alleviating emergency room overburden. [25]

CONCLUSION

Despite insufficient satisfaction ratings noted about waiting time due to consultations' overflow during the COVID-19 pandemic, overall satisfaction rates towards various telemedicine services in Saudi Arabia were high. When comparing the 940 medical contact centre with the Sehha app, there was no discernible change in the satisfaction ratings. Customers who utilised the Saudi Ministry of Health's telemedicine services were generally pleased with their experience; several even went so far as to say that the services were worth using again and recommending to others.

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