

## Awareness and Attitudes of Al Ahsa's Community toward Virtual Clinics

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### ABSTRACT

**Background:** Outpatient clinics pose a risk of infection transmission to patients. Patients can access their care without this risk through virtual consultations or virtual clinics. In addition to providing a positive benefit to medical patients who are at risk, telemedicine is also an economic and time saver for primary care users, particularly patients with chronic diseases. The aim of this study is to evaluate the awareness, experiences, and attitudes of Al Ahsa community about virtual clinics and their services.

**Methods:** The study was a descriptive cross-sectional study carried out in Al Ahsa, Saudi Arabia, with convenience sampling. The data was collected in November 2021. A self-administered, predesigned, and validated electronic questionnaire was used in the study.

**Results:** Among a total of 463 majorities of participants 360 (77.8%) were aged more than 40 years. A total of 286 (61.8%) participants were aware of the presence of virtual clinics and telemedicine. Only 137 (29.6%) participants used virtual clinics. In relation to the attitude of the participants, the majority of the participants (294) had a positive feeling toward virtual clinics. In order to analyze the relation between the attitude, and other factors, there is a significant correlation between the educational level and attitude toward using virtual clinics among the participants. Also, there is a positive correlation between the presence of chronic disease and the positive attitude to use virtual clinics.

**Conclusion:** Public awareness and understanding of the potential benefits of telehealth or telemedicine are needed for telehealth initiatives to succeed. According to the study, A majority of participants were aware of virtual clinics and telemedicine. Moreover, the patients' attitudes towards using the virtual clinics were positive.

### Keywords

Virtual clinics, Telehealth, Awareness, Distance care, COVID-19.

### Introduction

Outpatient clinics pose a risk of infection transmission to patients. Patients can access their care without this risk through virtual consultations or virtual clinics. There has been a surge in the interest in VC in response to COVID-19 [1,2].

Virtual health care constituted 1% of the total volume of global

health care, and this virtual care was most of the time incompatible with the traditional health system, but recently, especially with the COVID-19 era and with the precautions set by the Ministry of Health from a curfew and fear of infection from going to hospitals, the need increased, and the virtual clinics' service was activated. After the number of infections from the Coronavirus decreased, there are many viruses and diseases that can still be received from hospitals, so virtual clinics have a great role to prevent infection and facilitate access to health services.

There are many benefits of using virtual clinics. It can help in reducing the risk of infection transmission like COVID-19. It also guarantees accessible and continual care. It gives fast access to care with improved communication tools with patients. It has also benefited health care providers as it gives them great work flexibility [3]. Furthermore, digital tools can improve access to healthcare services and improve care delivery (Ministry of Health, 2019). For these advantages, it is probable that many health services will shift from face-to-face to the virtual clinics keeping pace with technological advancements [4].

In addition to providing a positive benefit to medical patients who are at risk, telemedicine is also an economic and time saver for primary care users, particularly patients with chronic diseases. Unfortunately, there are some challenges in using the virtual clinics, such as the lack of physical assessment, uncertain clinical diagnosis and treatment, technical issues, increase workloads, and limited type of consultations [3].

As some studies showed the high satisfaction of beneficiaries using virtual clinics services, research published by Irish Journal of Medical Science shows that upon easing of lockdown measures clients prefer physical appointments over the virtual ones, while during the COVID-19 pandemic they were highly satisfied [5]. Nurses have a great role in virtual clinics. It is an opportunity to take advantage of the nurse's experience without the physical demands of bedside [6]. The nurse has a vital role in the delivery of much electronic health deliveries [7].

The disadvantages of online consultations could be reduced by implementing new and advanced strategies. Using digital stethoscopes and advanced distance communication channels are examples of evolving technologies [8].

### Study Justification

Transformation of the health sector into a comprehensive and useful system is the first theme of the National Transformation Program. A new Model of Care will promote public health that focuses on the prevention and health awareness of society. It will provide optimal coverage, equitable geographical distribution, and comprehensive and extended e-health services and digital technologies to ensure access to health care [9].

### Statement of the Problem

COVID-19 (Coronavirus disease 2019) is a pandemic that rapidly progressing globally against which nations are struggling for containment [10]. This pandemic negatively affected patient care in a significant way that patients' attendance to clinics decreased [11]. The primary health services were conducted remotely as a response to that pandemic, assessment and treatment of patients are shifted from in-person care to telephone consultation [12]. As such, the study aimed to evaluate the awareness, experiences, and attitude of Al Ahsa community about virtual clinics and their services.

### Materials and Methods

**Study design and setting:** Descriptive cross-sectional study was conducted in Al Ahsa, Saudi Arabia, in which we used a non-probability convenience sampling technique.

### Data Collection Instrument and Method

The data was collected in November 2021. A self-administered, predesigned, and validated electronic questionnaire was used in the study. A survey is conducted online anonymously. Social media, including WhatsApp, Twitter, and Facebook, were used to distribute a web page link. For wide reach and ease of access, Google Forms was used to administer the online survey. When participants accept the survey link, they are required to provide demographic information and complete a battery of measures. It took around 3 weeks to collect the data. Three consultants evaluated the questionnaire to ensure its validity. The survey questionnaire dispensed to collect the data consisted of 3 sections: 1) a brief idea of the study and general instructions on how to fill the survey, 2) demographic information (age, gender, level of education, health status), 3) knowledge, perception, and attitude regarding virtual clinics. 4 yes, no questions, followed by 11 states used a 3-point Likert scale (agree, disagree, neutral).

### Ethical approval

After discussing the aims and objectives of the study with the participant, they were granted permission to share.

### Data Analysis

The analysis was conducted using SPSS software. A Chi-square test was used to analyze the data. Continuous variables were described by descriptive statistics (e.g., mean and standard deviation), whereas categorical variables were presented as frequencies and percentages. In the SPSS program, the significance level was determined as  $p < 0.05$  using the confidence level of 95%. Frequencies and percentages were calculated to summarize all the data.

### Results

The study was conducted on 463 participants in November 2021. The given table (1) represents the demographic data of the participants. As shown in table (1) majority of participants 360 (77.8%) were aged more than 40 years. 314 (67.8) are male while the female represents (32.2%) of the total participants. In terms of participants' educational levels, it appears that 301 (65%) have a bachelor's degree. The majority of the participants 330 (71.3%) have no chronic medical condition.

**Table 1:** Demographic Data of the participants.

Items	Number	Percent
<b>Age</b>		
18-30	83	17.9
31-40	20	4.3
More than 40	360	77.8
<b>Gender</b>		
Male	314	67.8
Female	149	32.2
<b>Educational level</b>		
High school and less	92	19.9
Bachelor	301	65
Master	50	10.8
No formal education	20	4.3
<b>Chronic medical condition</b>		
Yes	133	28.7
No	330	71.3

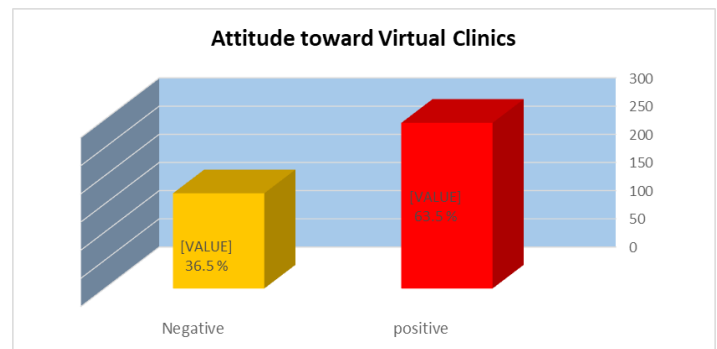
Table 2 illustrates the knowledge and perception of virtual clinics. In the study, a total of 286 (61.8%) participants were aware of the presence of virtual clinics and telemedicine. Only 137 (29.6%) participants used virtual clinics. About 171 (36.9%) participants who have previously used virtual clinics are satisfied with the service provided to them by the doctor during the consultation. In the study, 267 (57.7%) agreed that Virtual clinics will save time and effort. 326 (70.4%) participants expect to feel more confident and comfortable discussing special issues with the doctor through the virtual clinic.

**Table 2:** Awareness and experiences of virtual clinics.

Items	Number	Percent
<b>Are you aware that there are virtual clinics?</b>		
Yes	286	61.8
No	177	38.2
<b>Have you ever used virtual clinics?</b>		
Yes	137	29.6
No	326	70.4
<b>The distance between my house to the PHC is more than 15 minutes</b>		
Yes	180	38.9
No	283	61.1
<b>Routine visits to the doctor exhaust me</b>		
Yes	293	63.3
No	170	36.7
<b>I am satisfied with the service provided to me by my doctor during the consultation</b>		
Agree	171	36.9
Disagree	71	15.3
Neutral	221	47.7
<b>I prefer my next appointments to be in person (face-to-face) with my doctor rather than virtual</b>		
Agree	304	65.7
Disagree	51	11.0
Neutral	108	23.3
<b>The virtual clinic will save time and effort</b>		
Agree	267	57.7
Disagree	36	7.8
Neutral	160	34.6
<b>Telemedicine can reduce unnecessary outpatient visits</b>		
Agree	373	80.6
Disagree	16	3.4
Neutral	74	16
<b>Telemedicine is an effective tool for providing patient care</b>		
Agree	319	68.9
Disagree	31	6.7
Neutral	113	24.4
<b>I think I can discuss a lot of health problems during the virtual clinic</b>		
Agree	326	70.4
Disagree	44	9.5
Neutral	93	20.1
<b>In virtual clinics, I expect to feel more confident and comfortable discussing special issues with my doctor</b>		
Agree	290	62.6
Disagree	81	17.5
Neutral	92	19.9
<b>Virtual clinics are only utilized for re-dispensing medicines by the doctor</b>		
Agree	144	31.1
Disagree	197	42.5
Neutral	122	26.3

<b>The doctor cannot diagnose the patient's condition from a distance in a virtual clinic</b>		
Agree	181	39.1
Disagree	104	22.5
Neutral	178	38.4
<b>Through an audio or video conference, a virtual clinic can be conducted</b>		
Agree	368	79.5
Disagree	27	5.8
Neutral	68	14.7
<b>My interest in virtual clinics is growing</b>		
Agree	388	83.8
Disagree	20	4.3
Neutral	55	11.9

Figure 1 represents the attitudes toward virtual clinics. As we can see the majority of the participants (294) had a positive feeling toward virtual clinics, which is a really good start to support the study's aim.



**Figure 1:** Attitude toward virtual clinics.

Table 3 illustrates the relationship between demographic data and total attitude scores. In order to analyze the relation between the attitude, and educational level, there is a significant correlation between the educational level and attitude toward using virtual clinics among the participants. It has been assumed that the higher the educational level the more are the chances of a positive attitude to use virtual clinics. Also, there is a positive correlation between the presence of chronic disease and the positive attitude to use virtual clinics.

**Table 3:** Correlation between demographic data and attitude.

Demographic data and total attitude score		
	Chi-Square	PV
Age	0.374 <sup>a</sup>	0.829
Gender	0.292 <sup>a</sup>	0.589
Educational level	9.244 <sup>a</sup>	0.026*
Chronic diseases	4.068 <sup>a</sup>	0.044*

## Discussion

Virtual clinics can be used for diagnosis and cure, remote monitoring, and health counseling, as well as for continuing education of the health workforce and for providing health information [13]. The Ministry of Health in Saudi Arabia created a strategy to combat the disease recently. Saudi Arabia's Ministry of Health uses virtual clinics and health apps to screen for suspected

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cases and provide long-distance care [14]. Providing telehealth services can be viewed as providing high-quality, professional care to patients in a convenient location while maintaining the quality and standard of care expected of specialists. A truly patient-centered healthcare system might make telehealth services ordinary [10]. Telehealth delivers outstanding support and health care delivery in Saudi Arabia [16].

In the study, there were 286 participants (61.8%) who were aware of the presence of virtual clinics and telemedicine. Similar findings were found by Lee et al., and Bradford, N.K., et al. [17,18].

Based on the present study, patients felt that discussing their problems via virtual clinic provided them with more time and comfort. This was consistent with Zahoor A. study [19]. In addition, the present study revealed that the reduction of travel expenses makes virtual clinics more cost-effective and more acceptable. The results aligned with Peine A's study [20].

In the present study, the attitude to utilize virtual clinics services was correlated with educational level and the presence of chronic diseases.

### Conclusion

Public awareness and understanding of the potential benefits of telehealth or telemedicine are needed for telehealth initiatives to succeed. A significant factor in the growth of telehealth services may be empowering patients as partners in their care.

In our study, we found that the adoption of virtual visits has been exponentially growing and can greatly help the health care system. According to the study, the virtual clinic offers new opportunities to overcome barriers for patients who are unable to attend onsite visits. A majority of participants (were aware of virtual clinics and telemedicine. Moreover, the patients' attitudes towards using the virtual clinics were positive.

### Declaration of Competing Interest

In this paper, the authors declare that they have no competing financial interests or personal relationships that could appear to influence the results.

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