

# Telemedicine Consultation: Geriatric Patients' Attitude at Primary Care Clinics in Security Forces Hospital in Riyadh, Saudi Arabia

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Received: October 2022 Accepted: November 2022; Published: December 15, 2022.

Citation: Zainah Alqahtani, Eyas Alhamad. Telemedicine Consultation: Geriatric Patients' Attitude at Primary Care Clinics in Security Forces Hospital in Riyadh, Saudi Arabia.. World Family Medicine. December 2022 - January 2023; 21(1): 67-77

DOI: 10.5742/MEWFM.2023.95251501

## Abstract

**Background:** Telemedicine has been adopted to deliver healthcare services around the world in response to the COVID-19 pandemic.

Telemedicine was widely used due to its safety in providing healthcare services and screening for COVID-19 symptoms.

**Objectives:** To assess telemedicine consultations during the COVID-19 pandemic at primary care clinics for follow-up geriatric patients.

**Materials and methods:** A cross-sectional survey-dependent study was conducted at Security Forces Hospital in Riyadh, Saudi Arabia, from July to August 2021. Participants were selected using a non-randomized voluntary response sampling technique. Data were collected over telephonic interviews and analyzed using SPSS program version 23.

**Results:** A total of 518 respondents were included in the study. We found 90.73% of the participants thought that first time they have been consulted as a patient on the Telephone. And 91.89% of the participants thought that the majority agreed that it made healthcare services easier during the COVID-19 pandemic. their desire to in the future to have telephone Consultation (71.62%). Showed that the average attitude toward Telephone consulting

satisfaction score of respondents was  $6.5 \pm 1.0$ , demonstrating that most participants revealed a good level of Attitude toward telephonic consultations during the pandemic. Satisfaction scores, gender, age and nationality of participants did not differ significantly.

**Conclusion:** The study concluded that geriatric patients had an excellent attitude toward telemedicine consultation during the pandemic at the Hospital's primary care clinic. Further studies are needed to address factors associated with attitudes toward telemedicine.

**Keywords:** Attitude, Telemedicine, Riyadh, geriatric patients, COVID-19

## Background

A remote consultation between doctors and patients can use a video link (teleconsultation) or take place over the telephone at all levels of the system [1]. The COVID-19 pandemic has changed many aspects of the framework for patient-health-care professional relationships [2]. In previous times of crisis, the professional perspective was that the patient experience might need to be sacrificed in the interest of clinical effectiveness [3]. COVID-19 has introduced new healthcare scenarios of human interaction and has altered procedures established long ago [4].

Technological advancements paved the way to implement telemedicine for healthcare provision, especially for geriatric patients and may need special attention. Various healthcare systems integrated Internet of Things (IoT) in telemedicine to monitor and record individual health parameters regularly [5]. Evidence suggests that telemedicine can effectively manage chronic diseases in senior patients [6].

Telephone Consultation (TC) is considered the most common alternative form of telemedicine to face-to-face consultation in clinical settings [7]. However, the characteristics of TC to focus on the presenting symptoms and patients not being comprehensively assessed, is a drawback of telemedicine [8].

There was telephone were shorter time and fewer problems than face-to-face consultations. Satisfaction outcomes were similar in both consultation types. [9].

In addition, regarding the physician - patient relationship, there are issues concerning the quality of health information and organizational difficulties [10]. Nevertheless, TC thrived during the COVID-19 pandemic [10].

Public administrations around the world were investing in TC to manage COVID-19, aiming to reduce the volume of patients interacting with emergency departments [11]. The NHS in the UK provided online consultation in designated areas to avoid patient visits [12].

In June 2019, new telemedicine regulations were published in KSA, providing a comprehensive framework for all clinical staff, which is overseen by the Saudi Telemedicine Unit of Excellence (STUE). These regulations provide a foundation for video consultations [13].

A similar study by Álvarez et al., 2021 [14] reported a total of 5,031 telephone calls, differentiating between medical referrals, primary care visits, and outpatient consultations. The percentage of successful telematics was 53%.

In New Zealand Melian et al., 2021 [16] reported that patients who utilize telephone consultations are more likely to prefer it over in-person visits in the future. This increased preference suggests that teleconsultation has a role also in orthopedic surgery.

A study done by Alhumud et al., 2020 [17] in Riyadh measured satisfaction towards a tele-retinal screening program among people with diabetes attending endocrinology clinics. The study found that patients were highly satisfied with the program.

Also, Nasser et al., 2021 [18] revealed acceptable satisfaction of patients toward telemedicine programs in Saudi Arabia.

Multiple studies have been published to report the telemedicine experience of Saudi patients, however, the data related to geriatric patients in these studies are limited. Alhamam et al. carried out a study to infer the acceptance of patients affected with musculoskeletal disorders among the Saudi population towards telemedicine. In this study, geriatric patients were found to be less likely to have positive attitudes toward telemedicine as compared to younger patients. However, this study recruited only eight patients (1.3%) older than 55 years [19].

Similarly, Thirunavukkarasu et al. reported a significant correlation between poor satisfaction levels for telemedicine services and the increasing age of participants attending outpatient telemedicine clinics in Saudi Arabia [20].

According to a careful literature review, there is no published study from Security Force Hospital assessing patients' satisfaction with tele-consultation during COVID-19. This study aimed to assess the patient's satisfaction with their experience of using TC during the COVID-19 pandemic.

### Objectives of the study:

- Evaluation of telemedicine consultation for follow-up geriatric patients during the COVID-19 pandemic in the primary care clinic in the Security Forces Hospital in Riyadh, Saudi Arabia, 2022.
- Research the attitudes of Security Force Hospital's primary care geriatric patients concerning the usage of TCs during the COVID-19 pandemic.
- Using tele-consultation techniques with primary care geriatric patients at Security Force Hospital, determine the relationship between the sociodemographic information of the participants and the degree of attitude.

## Materials and Methods

### Study Area/Setting:

This study was conducted at Security Force Hospital in Riyadh, Saudi Arabia.

### Study Subjects:

The study was done on primary care geriatric patients who were followed up through TCs in a Security force hospital from July to August 2021. Patients who were 65 years of age or older and who participated in tele-consultations follow-up during COVID-19 were included.

### Study Design:

This was a cross-sectional survey-dependent study.

### Sample Size:

Was calculated using SPSS software.

### Sampling Techniques:

Participants were selected consequently using a non-randomized voluntary response sampling technique. The sampling was done by using online and offline techniques. Online methods involved interacting with patients over the Telephone. Offline methods include face-to-face sessions and taking data from the attendees/ relatives of the patients.

### Data Collection methods, instruments used and measurements:

A telephone interview questionnaire collected data. It was modified to elicit participants' sociodemographic data, attitudes toward tele-consultation follow-up, and their views on healthcare services in Saudi Arabia during the COVID-19 pandemic. The participants' attitude towards tele-consultations was detected using a four questions checklist with two responses; "yes/agree" given a 2 score and "no/disagree" given a 1 score. So, the attitude score ranged from 5 to 7.

### Data Management and Analysis Plan:

Data were analyzed by SPSS program version 23, where quantitative data was expressed as numbers and frequencies. Also, we used mean and standard deviation (mean  $\pm$  SD) to measure the average and spread of participants' responses. One-way ANOVA and student T-test were used to test associations between variables. A p-value  $<$  0.05 was used as a cutoff point for statistical significance.

### Ethical Considerations: Informed Consent

The Ethical clearance for the study was obtained from the Security Force Hospital Ethics committee (22-574-10). Confidentiality was assured to all participants who agreed to participate in the study. The respondents were given a brief description of the research and its objectives.

## Results

In this study, a total of 518 participants were included. The individuals were selected based on their age. Any participant younger than 65 was rejected for the study. Female participants were more than males, i.e., 288 and 230, respectively. Females consisted of (55.60%) of the individuals who that participated. Participants from 65 years to 70 years were (22.97%), from 70 to 80 years were (36.10%) and participants aged more than 80 years were (40.93%). The highest percentage of participants aged more than 80 years (40.93%). Moreover, our findings revealed that most respondents were Saudis (96.53%), and only (3.47%) were non-Saudis. (Table 1 and Figure 1).

### Telephone Consulting During COVID-19 Pandemic

Our results demonstrated that most respondents admitted that this was the first time they had been consulted as a patient on the telephone, i.e., 470 (90.73%) out of 518. Almost the same agreed that TC made healthcare service easier today was 476 (91.89%). In addition, 451 (87.07%) of respondents thought they might have to miss work to see a therapist if telephone services were unavailable. (Table 2). Our findings showed that most of the respondents 191 (36.87%) would use alternative medicine if the telephone was not available for consultation, and the lowest percentage 66 (12.74%) would have to not go to see any of the participants' doctors. 166 (32.05%) of respondents demonstrated that they would have to drive for 30 minutes - 1 hour to receive medical care, and 159 (30.69%) would have to drive for more than two hours. (Table 2) Furthermore, results indicated that participants preferred telephone consultation 371 (71.62%) over face-to-face consultation was 147 (28.38%). Most participants are not willing to participate in a telephone-only consultation for all routine check-ups was 398 (76.83%). The existence of the direct opposite answers to the question 7 and 8 leaves, in our opinion, some reasons and assumed limitations, such as the scarcity of service availability in some health centers, lack of training for staff and technical support on TC no good interaction between them and patients. It is also important to ensure privacy and confidentiality of communication and the diversity of TC authentication methods. (Table 2).

**Table 1. Display the frequency of gender, age and nationality of individuals participating in the research**

Variable	Category	Frequency	Percent
Gender	Male	230	44.40%
	Female	288	55.60%
Age	65 to 70	119	22.97%
	70 to 80	187	36.10%
	More than 80	212	40.93%
Nationality	Saudi	500	96.53%
	Non-Saudi	18	3.47%

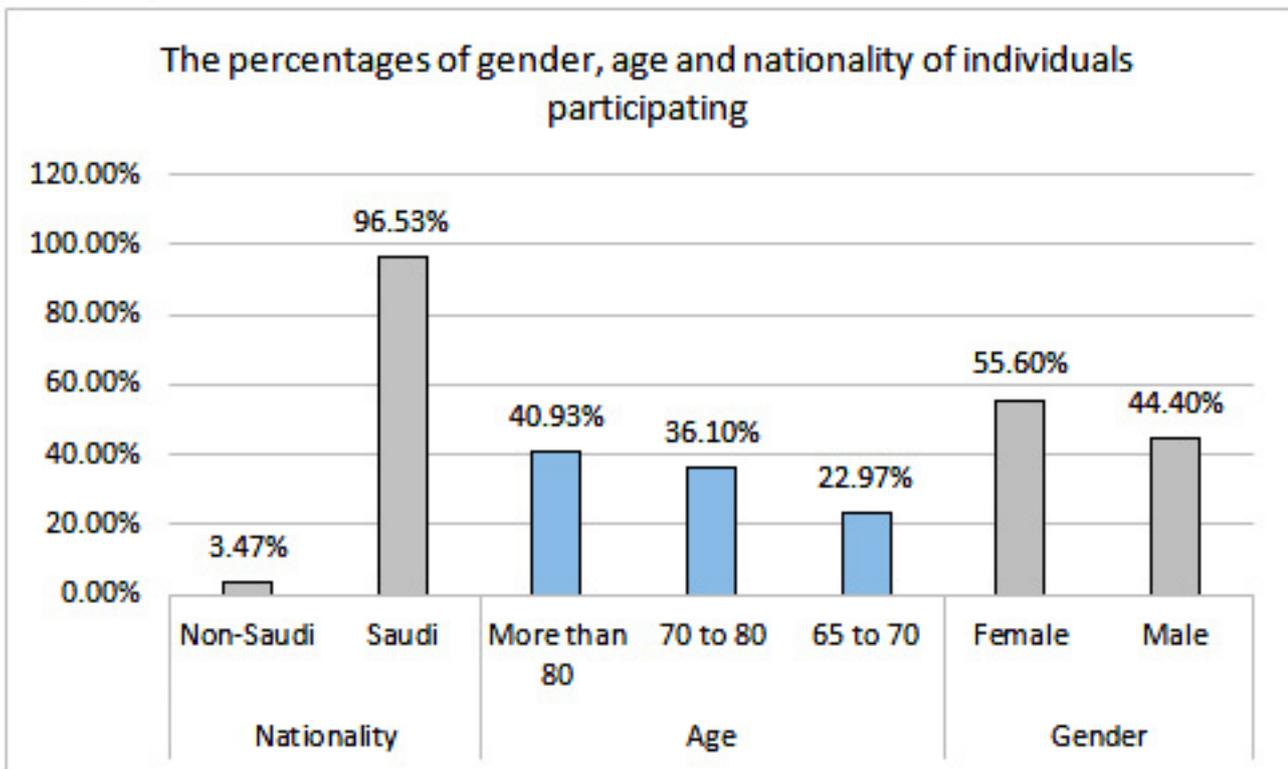
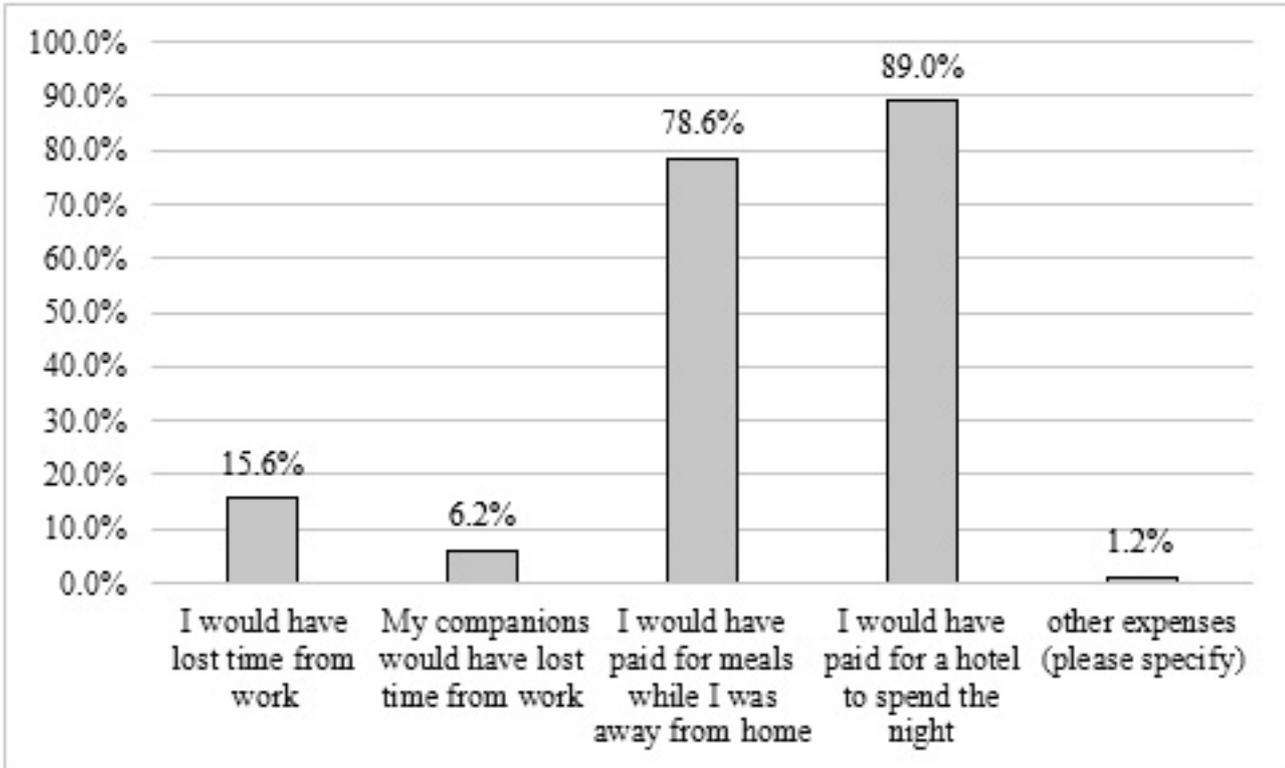
**Figure 1. Histogram of percentages of gender, age and nationality of individuals participating**

Table 2. Display of frequency of questions answered by participants

<b>Is this the first time you have been consulted as a patient on the Telephone?</b>	
Yes	470 (90.73%)
No	48 (9.27%)
<b>Do you think telephone services made healthcare easier today during the virus COVID-19 pandemic?</b>	
Agree	476 (91.89%)
Disagree	42 (8.11%)
<b>If you need any healthcare services, do you think you might have to miss work / get things done to see a therapist if telephone services are unavailable?</b>	
Agree	451 (87.07%)
Disagree	67 (12.93%)
<b>If Telephone had not been available for your consult today, which of the following would have been your alternative plan of action?</b>	
I would have contacted my local clinic to see if they could assist	139 (26.83%)
I would have driven to see the specialist face-to-face	122 (23.55%)
I wouldn't go see any doctor	66 (12.74%)
The use of alternative medicine (honey - nigella - Indian installment, etc.)	191 (36.87%)
<b>If telephone had not been available for your consult today, how far would you have had to drive to receive care?</b>	
Less than 15 minutes	60 (11.58%)
15 - 30 minutes	64 (12.36%)
30 minutes - 1 hour	166 (32.05%)
1-2 hours	69 (13.32%)
More than 2 hours	159 (30.69%)
<b>In the future, which would you prefer?</b>	
Face-to-face Consultation	147 (28.38%)
Telephone Consultation	371 (71.62%)
<b>Would you be willing to participate in another telephone consultation?</b>	
Yes	14 (2.70%)
No	398 (76.83%)
Not sure	106 (20.46%)
<b>If telemedicine had not been available and you had to travel to meet face-to-face with the provider to receive care, which of the following would apply?</b>	
I would have lost time from work	81 (15.6%)
My companions would have lost time from work	32 (6.2%)
I would have paid for meals while I was away from home	407 (78.6%)
I would have paid for a hotel to spend the night	461 (89.0%)
Other expenses (please specify)	6 (1.2%)

The histogram (Figure 2) below shows the multiple answer question that percentage of individuals that would go to lengths for their consultation. Of the 518 individuals, 461 (89%) agreed that they would stay in a hotel to spend the night if required for their consultation. They were followed by 407 individuals (78.6%) who were willing to pay for meals too.

**Figure 2. Histogram of percentage of participants agreeing to the answers**



### Participant's suggestions for improving consultations

In an open-ended question on suggestions for improving consultations, the results of the analysis showed the top 8 cases in descending order. As follows, about 124 (25.9%) of the participants wanted ASK your patients to be surveyed or case dependent. Followed by 77 (16.1%) of the participants if the refill appointment is by telephone if the real appointment is video and sound with privacy. Thirdly, the telephone with some privacy 51 (10.6%), which outperformed the desire for video with privacy 31 (6.5%). In contrast, the face-to-face case and the case of family doctors did not feel the desire the least, 12 (2.5%) and 3 (0.6%). (Table 3).

**Table 3. Display the frequency of the individuals who agreed to the suggestions**

No.	Cases	Frequency	Percent
1	Survey and ask your patients or depend on case.	124	25.9%
2	If it is refill appointment with telephone if it a real appointment will be video and sound with keeping privacy.	77	16.1%
3	Telephone with some privacy.	51	10.6%
4	Video with privacy.	31	6.5%
5	At least by video with privacy or face to face not only phone or telephone.	15	3.1%
6	Face to face better.	12	2.5%
7	Family doctors is better.	3	0.6%
8	I don't know or haven't any suggestions.	166	34.7%
<b>Total</b>		<b>479</b>	<b>100%</b>

As explained in (Table 2), 371 (71.62%) participants agreed for another consultation was (telephone consultation). We put an open-ended question on cases or diseases that are not suitable for telemedicine, the results of the analysis showed the top 12 cases in descending order. Out of those 91 (18.1%) agreed for it depends on the cases. Followed by it depends on the doctors was 39 (7.8%). Then it depends on the department and the policy of hospital was 10 (2%) and 9 (1.8%). In contrast, lowest Obgyn cases in PCC, Orthopedic, ophthalmology and ENT cases should be seen, refill medications via TC and family physician should communicate with patients was 3 (0.6%). We do not know if any participant would agree for an appointment for a new consultation. Regarding participants' perceptions about cases unsuitable for Telephone, most respondents admitted that they did not know or haven't any idea or nothing was 321 (63.9%). (Table 4).

**Table 4. Table showing the response of participants to different diseases.**

No.	Cases	Frequency	Percent
1	It depends on the cases.	91	18.1%
2	It depends on the doctors.	39	7.8%
3	It depends on the department.	10	2%
4	It depends on the policy of hospital.	9	1.8%
5	All cases at family medicine should be seen.	7	1.4%
6	Any case needs physical examination.	7	1.4%
7	Any new complaints.	6	1.2%
8	Obgyn cases in PCC.	3	0.6%
9	Orthopedic, ophthalmology and ENT cases should be seen.	3	0.6%
10	Refill medications.	3	0.6%
11	Family physician should communicate with patients.	3	0.6%
12	I don't know or haven't any idea or nothing.	321	63.9%
<b>Total</b>		<b>502</b>	<b>100%</b>

#### **Attitude toward Telephone Consulting satisfaction During COVID-19 Pandemic**

Results showed that the average attitude score of respondents was  $6.5 \pm 1.0$  out of Range 5-7 demonstrated that most participants had a good attitude toward Telephone consulting during the pandemic.

### Factors associated with Attitude toward Telephone Consulting satisfaction during COVID-19 Pandemic

There was no statistically significant association exists between attitude toward Telephone consulting during the COVID-19 pandemic and participants' gender they have the same mean 6.5 with (P value =.433). Other sociodemographic variables did not significantly affect attitude toward Telephone consulting during a pandemic. Having previous Telephone consulting was associated with a higher attitude toward Telephone consulting satisfaction but without a significant difference (P value =.827). (Table 5).

**Table 5. Display of factors affecting attitude toward telephone consulting**

Variable	Category	Attitude toward Telephone Consulting satisfaction		P value
		Mean	SD	
Gender *	Male	6.46	.989	.433
	Female	6.53	1.013	
Age (years) **	65 to 70	6.57	.983	.758
	70 to 80	6.47	.973	
	More than 80	6.48	1.042	
Nationality *	Saudi	6.48	1.002	.135
	Non-Saudi	6.84	.992	
Having previous Telephone consulting *	Yes	6.50	1.010	.827
	No	6.47	.934	

\* Independent t test, \*\* One way ANOVA.

## Discussion

The World Health Organization (WHO) defines telemedicine as “the delivery of health care services, where distance is a key factor, by all medical care professionals using Information and Communication Technologies (ICTs), for the diagnosis, treatment and prevention of disease and disability.” Furthermore, WHO has included telemedicine as one of its recommendations for essential services, as it has played an important role during the COVID-19 pandemic. (20, 21). The study on 518 geriatric patients regarding telephone consultation found that (90.73%) of participants say yes that the first time you have been consulted as a patient on the Telephone that they high desire to take advice over the telephone providers in person. Also, found that (91.89%) of participants agreed that the telephone services made healthcare easier today during the virus COVID-19 pandemic Similar to the present research, Abdel Nasser, A. et al. also found that (84.9%) their study participants agreed that the telephone services made healthcare easier today. This high desire for ease of telephone services is due to the increasing awareness of the Arab community after the events of COVID-19 and

in support of development and sustainability. The present study depicted that only (2.70%) of the participants were willing to participate in another telephone consultation. However, an increased number of participants (71.62%) expressed their desire to in the future to have telephone Consultation. This interesting finding suggests that patients wish to transform their healthcare towards virtual care in necessary situations. (18). A previous study in Australia reported that more than half of respondents (n=369, 61.9%) stated that their telemedicine experience was “just as good as” or “better than” their traditional in-person medical care experience (23). In contrast, another study conducted in the USA, which revealed that (65.2%) of patients reported that they prefer in-person visits (24). On the other hand, a study done by Abdel Nasser, A. et al. in 2021 stated that healthcare providers envisage decreasing telephone consultation in the future (48.9%) (18). Similar to the current study findings, Thirunavukkarasu, A.et al. also reported that most participants wished to prefer telemedicine even post-COVID-19 (74.4%) (20). The different study settings, inclusion criteria, and departments could be the cause of this striking difference between the studies. According to the current study's participants (76.83 %), they would not

be interested in participating in another telephone consultation. In the same way, Nasser A. et al. and Thirunavukkarasu, A., et al. also reported that technical difficulties and the scarcity of service availability in some health centers, lack of training for staff and technical support on TC no good interaction between them and patients. It is also important to ensure privacy and confidentiality of communication and the diversity of TC authentication methods. were the most frequently cited limitation by patients (18,21). Female participants had a non-significantly higher mean attitude score than the other participants, indicating that there was no statistically significant correlation between satisfaction scores and gender. In addition, satisfaction scores and age and nationality of participants did not differ significantly. Comparative outcomes to the ongoing review discoveries, Abdel Nasser, A. et al. There was a non-significant difference in satisfaction between the gender of the participants and the scores. Our study executed this cross-sectional survey faces with some limitations. Firstly, our survey is a descriptive observational study, hence we could not establish a casual relationship. Secondly, recall bias is a possibility. Lastly, it is signifiant for the entire country because the study is based at a single center.

## Conclusion

Our study found that geriatrics at the Security Forces Hospital in Riyadh, Saudi Arabia, had a positive attitude toward telemedicine consultation during the COVID-19 pandemic at the primary care clinic. More research is needed to address the factors influencing attitudes toward telemedicine consultation. Future surveys should also compare people's experiences with telemedicine to experiences with in-person visits based on the health service provided.

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