

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

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## 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. Results showed that the average attitude 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. Furthermore, the majority agreed that it made healthcare services easier. There is a statistically significant association between Attitude toward telephone consulting during the COVID-19 pandemic and the participant's age ( $P$  value= 0.003).

**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]. Other drawbacks of telemedicine use include a lack of visual cues and the examination part. We can overcome these drawbacks with visual cues. [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 55 was rejected for the study. Female participants were more than males, i.e., 288 and 230, respectively. Females consisted of 55.6% of the individuals who participated. Participants from 65 years to 70 years were 23.4%, from 70 to 80 years were 36.2% and participants aged more than 80 years were 40.4%. The highest percentage of participants aged more than 80 years (40.4%). Moreover, our findings revealed that most respondents were Saudis (96.5%), and only 3.5% were Non-Saudis. (Table 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 (90.7%) out of 518. Almost the same agreed that TC made healthcare service easier today. In addition, 86.7% of respondents thought they might miss work to see a therapist if telephone services were unavailable. (Table 2)

Our findings clarified that more than one-third of respondents would use alternative medicine if the Telephone had not been available for consultation, and a lesser percentage (26.3%) of participants would have to see the specialist face-to-face. 31.4% of respondents demonstrated that they would have to drive for 30 minutes - 1 hour to receive medical care, and 30.7% would have to drive for more than two hours. (Table 2)

Furthermore, results indicated that participants preferred telephone consultation over face-to-face consultation. (Table 2)

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

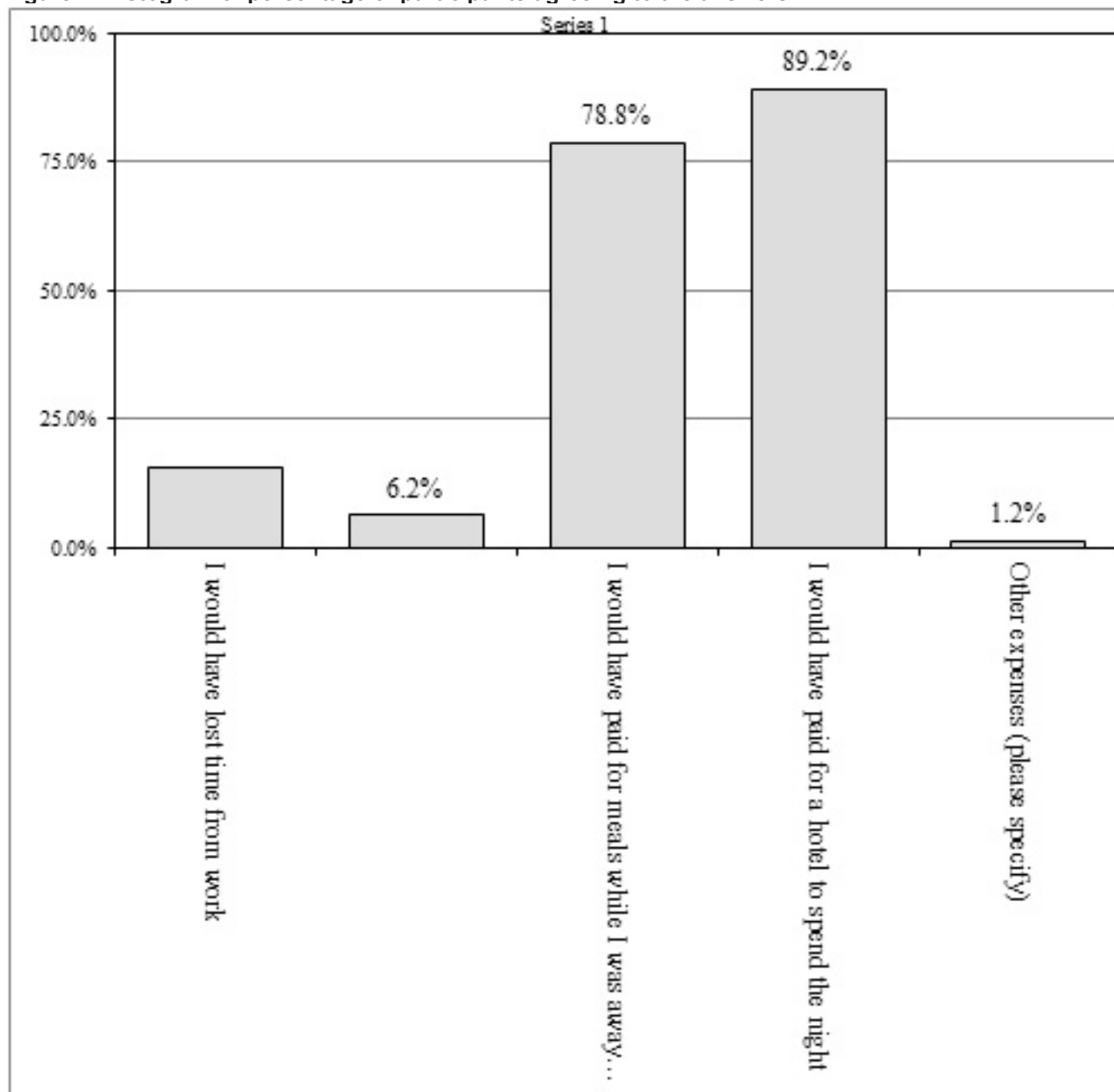
Variable	Category	Frequency	Percent
Gender	Male	230	44.4%
	Female	288	55.6%
Age	65 to 70	119	23.4%
	70 to 80	187	36.2%
	More than 80	212	40.4%
Nationality	Saudi	500	96.5%
	Non-Saudi	18	3.5 %

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 (90.7%)
No	43 (8.3%)
<b>Do you think telephone services made healthcare easier today during the virus COVID-19 pandemic?</b>	
Agree	476 (91.9%)
Disagree	14 (6.6%)
<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	449 (86.7%)
Disagree	64 (12.4%)
<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	119 (23%)
I would have driven to see the specialist face-to-face	136 (26.3%)
I wouldn't go see any doctor	63 (12.2%)
The use of alternative medicine (honey - nigella - Indian installment, etc.)	188 (36.3%)
<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 (11.6%)
15 - 30 minutes	64 (12.4%)
30 minutes - 1 hour	164 (31.7%)
1-2 hours	69 (13.3%)
More than 2 hours	159 (30.7%)
<b>In the future, which would you prefer?</b>	
Face-to-face Consultation	134 (25.9%)
Telephone Consultation	357 (68.9%)
<b>Would you be willing to participate in only telephone consultation for all your routine checkups?</b>	
Yes	11 (2.1%)
No	396 (76.4%)
Not sure	103 (19.9%)

The histogram (Figure 1) below shows the percentage of individuals that would go to lengths for their consultation. Of the 518 individuals, 462 (89.2%) agreed that they would stay in a hotel if required for their consultation. They were followed by 408 individuals (78.8%) who were willing to pay for meals too.

**Figure 1. Histogram of percentage of participants agreeing to the answers**



#### **Participant's suggestions for improving consultations**

Around 7.5% of participants wanted the appointment to be on video with their privacy intact but preferred an appointment over the Telephone if it was for refilling medicines. In contrast, 5.8 % of individuals did not feel the need to come to the video appointment, but they were willing to have an appointment over the Telephone for a refill. (Table 3)

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

Cases	Frequency	Percent
It depends on the appointment if it's only refill medications so it can be by Telephone or something no need to come or video appointment with keeping privacy	30	5.8%
Video with privacy	11	2.7%
Telephone Consulting is useless, should be by videos	2	0.4%
You must be more organized with which cases need Telephone Consulting and which cases do not need telephone Consulting	21	4.1%
If it is refill appointment with Telephone if it a real appointment will be video and sound with keeping privacy	39	7.5%
The doctor should be in contact with the patient 3 to 7days before appointment and tell patient no need to come, especially if patient is from outside Riyadh	1	0.2%
Face to face better unless refill medications	9	1.7%
Telephone if it is a refill medication, but either video with privacy or face to face	16	3.1%
Nothing	30	5.8%

As explained in Table 2, 357 participants agreed for another consultation. Out of those 5.8% agreed for a refill appointment via TC, but 1.7% individuals agreed for a refill appointment face to face. 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. 2.3% of participants reported that it depends on the issue. And only 0.6% demonstrated that it depends on the doctor. (Table 4)

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

Cases	Frequency	Percent
Acute complaints	3	0.6%
All cases in family medicine should be seen	4	0.8%
Any case needs physical examination	3	0.6%
Any new complaints	3	0.6%
It depends on the policy of the hospital	3	0.6%
It depends on the department	6	1.2%
It depends on the cases	12	2.3%
It depends on the doctor	3	0.6%
Ob-gyn cases in PCC	3	0.6%
Orthopedic, ophthalmology, and ENT cases should be seen	3	0.6%
Refill medications	3	0.6%
I don't know	113	21.8%
Total	171	100%

#### **Attitude toward Telephone Consulting 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 during COVID-19 Pandemic**

A statistically significant association exists between attitude toward Telephone consulting during the COVID-19 pandemic and participants' age (P value= 0.003). 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 but without a significant difference (P value= 0.080). (Table 5)

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

Variable	Category	Attitude toward Telephone Consulting		P value
		Mean	SD	
Gender	Male	6.51	.860	0.030
	Female	6.55	.834	
Age (years)	65	7.7	.45	0.003
	More than 65	7.5	.87	
Nationality	Saudi	6.53	.850	0.32
	Non-Saudi	7	.000	
Having previous Telephone consulting	Yes	6.53	.845	0.080
	No	6.53	.855	

## Discussion

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 and infirmities.” Furthermore, WHO has included telemedicine as one of its recommendations for essential services (20, 21).

The study on 518 geriatric patients regarding telephone consultation included 52.9% females and 44.4% males. 86.7% of participants were eager to leave work for in-person consultation without teleconsultation. Around 31.4% of the participants were willing to drive over 30 minutes for a face-to-face consultation. If a consultation was required face to face, 89.2% were ready to stay in a hotel if needed. Many participants preferred teleconsultation if it required the refilling of medicines. Around 2.3% of the patients considered it highly necessary to be decided by the doctor. They were of the view that the visit to the doctor depended upon the type of case.

From our study, we can conclude that the participants agreed to use telemedicine consultations. This is supported by another study in Saudi Arabia which revealed that participants' acceptable satisfaction and attitude toward telemedicine programs in Saudi Arabia. It described that for 84.9% of the participants, telemedicine facilitated access to healthcare during the COVID-19 epidemic. 52% of respondents said they were extremely satisfied with how simple it was to register, and 43.4% said they felt free to speak their minds when using telemedicine. The findings showed a strong positive link between attitude and satisfaction scores. (18). An earlier study conducted

in Poland among rheumatology patients demonstrated a positive attitude to telemedicine (22). We found that most respondents stated that telephone services made healthcare easier (91.9%). Another result from a previous study in Saudi Arabia confirmed the same, i.e., 84.9% of participants agreed that during the pandemic, telemedicine consultation made it easier (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 showed that only 25% stated telemedicine is more convenient than a face-to-face visit (24).

In this study, most respondents preferred TC (68.9%), and 25.9% chose Face-to-face Consultation in the future. It is inconsistent with another study conducted in the USA, which revealed that 65% of patients reported that they prefer in-person visits (25). Similar to the results, a previous study in Saudi Arabia showed that (74.4%) would have telemedicine consultations after the pandemic (20).

A study in Saudi Arabia showed that a higher age group was one of the significant variables associated with poor and average satisfaction (OR = 1.59; 95% CI = 1.04–2.44, p = 0.031). This study had similar results to our research (20). Contrarily, a Saudi Arabian study found that individuals who were women had considerably higher mean attitude scores than those who were men (18).

Our study faces 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 not significant 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.

## References

1. Donaghy E, Atherton H, Hammersley V, McNeilly H, Bikker A, Robbins L, Campbell J, McKinsty B. Acceptability, benefits, and challenges of video consulting: a qualitative study in primary care. *British Journal of General Practice*. 2019 Sep 1;69(686):e586-94.
2. D'Ambrosio F, de Belvis AG, Morsella A, Castellini G, Graffigna G, Laurenti P. Life after COVID-19: Rethinking the Healthcare System and Valuing the Role of Citizens' Engagement in Health Prevention. *Frontiers in Psychology*. 2020;11.
3. Coulter A, Richards T. Care during covid-19 must be humane and person centered.
4. European Centre for Disease Prevention and Control COVID-19 situation update worldwide, as of 18 June 2020.
5. Perera MS, Halgamuge MN, Samarakody R, Mohammad A. Internet of things in healthcare: A survey of telemedicine systems used for geriatric people. *IoT in Healthcare and Ambient Assisted Living 2021* (pp. 69-88). Springer, Singapore.
6. Şahin E, Yavuz Veizi BG, Naharci MI. Telemedicine interventions for older adults: A systematic review. *Journal of telemedicine and telecare*. 2021 Nov 26;1357633X211058340.
7. van Galen LS, Car J. Telephone consultations. *bmj*. 2018 Mar 29;360.
8. Derkx HP, Rethans JJ, Maiburg BH, Winkens RA, Muijtjens AM, van Rooij HG, Knottnerus JA. Quality of communication during telephone triage at Dutch out-of-hours centers. Patient education and counseling. 2009 Feb 1;74(2):174-8.
9. McKinsty B, Hammersley V, Burton C, Pinnock H, Elton R, Dowell J, Sawdon N, Heaney D, Elwyn G, Sheikh A. The quality, safety, and content of Telephone and face-to-face consultations: a comparative study. *BMJ Quality & Safety*. 2010 Aug 1;19(4):298-303.
10. Hjelm NM. Benefits and drawbacks of telemedicine. *Journal of telemedicine and telecare*. 2005 Mar 1;11(2):60-70.
11. Leite H, Hodgkinson IR, Gruber T. New development: 'Healing at a distance'—telemedicine and COVID-19. *Public Money & Management*. 2020 Aug 17;40(6):483-5.
12. NHS App. Online consultations - NHS App help and support. Published 2020. Accessed July 11, 2020, NHS. UK. <https://www.nhs.uk/using-the-nhs/nhs-services/the-nhs-app/help/online-consultations/>
13. Telemedicine regulations in the Kingdom of Saudi Arabia. [Feb;2021 ];<https://nhic.gov.sa/en/Initiatives/Documents/Saudi%20Arabia%20Telemedicine%20Policy.pdf> 2018
14. Álvarez SM, Ylla AB, Carreño JS, Castellón P, Cardona CG, Crespo FA. Telephone consultation service in orthopedics during the COVID-19 pandemic. *Revista Española de Cirugía Ortopédica y Traumatología* (English Edition). 2021 May 1;65(3):167-71.
15. Richardson E, Aissat D, Williams GA, Fahy N. Keeping what works: Remote consultations during the COVID-19 pandemic. *Euro health*. 2020;26(2):73-6.
16. Melian C, Frampton C, Wyatt MC, Kieser D. Teleconsultation in the Management of Elective Orthopedic and Spinal Conditions During the COVID-19 Pandemic: Prospective Cohort Study of Patient Experiences. *JMIR Formative Research*. 2021 Jun 15;5(6):e28140.
17. Alhumud A, Al Adel F, Alwazae M, Althaqib G, Almutairi A. Patient satisfaction toward a tele-retinal screening program in endocrinology clinics at a tertiary hospital in Riyadh, Saudi Arabia. *Cureus*. 2020 May;12(5).
18. Nasser AA, Alzahrani RM, Fella CA, Jreash DM, Almuwallad NT, Bakulka DS, Abed RA. Measuring the Patients' Satisfaction About Telemedicine Used in Saudi Arabia During COVID-19 Pandemic. *Cureus*. 2021 Feb;13(2).
19. Alhamam NM, Buhaim RA, Almakhayitah IH, AlBahr AW, AlYaeesh IA. Telemedicine for musculoskeletal care during the COVID-19 pandemic: Evaluating readiness of Saudi citizens. *Cureus*. 2021 Feb 16;13(2).
20. Thirunavukkarasu A, Alotaibi NH, Al-Hazmi AH, Alenzi MJ, Alshaalan ZM, Alruwaili MG, Alruwaili TA, Alanazi H, Alosaimi TH. Patients' Perceptions and Satisfaction with the Outpatient Telemedicine Clinics during COVID-19 Era in Saudi Arabia: A Cross-Sectional Study. *Healthcare* 2021, 9, 1739.
21. WHO. Strengthening the Health System Response to COVID-19 Recommendations for the WHO European Region Policy brief. Geneva: World Health Organization; 2020 Available from: [http://www.euro.who.int/\\_\\_data/assets/pdf\\_file/0003/436350/strengthening-health-systems-response-COVID-19.pdf](http://www.euro.who.int/__data/assets/pdf_file/0003/436350/strengthening-health-systems-response-COVID-19.pdf) [Last accessed on 28 Apr 2020].
22. Opinc A, Łukasik Z, Makowska J. The Attitude of Polish rheumatology patients towards telemedicine in the age of the COVID-19 pandemic. *Reumatologia*. 2020;58(3):134.
23. Isautier JM, Copp T, Ayre J, Cvejic E, Meyerowitz-Katz G, Bacup C, Bonner C, Dodd R, Nickel B, Pickles K, Cornell S. People's experiences and satisfaction with telehealth during the COVID-19 pandemic in Australia: a cross-sectional survey study. *Journal of medical Internet research*. 2020 Dec 10;22(12):e24531.
24. Kulcsar Z, Albert D, Ercolano E, Mucchella JN. Telerheumatology: a technology appropriate for virtually all. *Semin Arthritis Rheum* 2016; 46: 380-385, DOI: 10.1016/j.semarthrit.2016.05.013.
25. Sathiyaraj A, Lopez H, Surapaneni R. Patient satisfaction with telemedicine for prechemotherapy evaluation during the COVID-19 pandemic. *Future Oncology*. 2021 May;17(13):1593-600.