

# Remote Interviews for Medical Residency Selection During the Initial COVID-19 Crisis: a National Survey

**Mohamad-Hani Temsah**

King Saud University

**Fadiyah Alkhattabi**

King Faisal Specialist Hospital and Research Center

**Khalid Alhasan**

King Saud University

**Adi Alherbish**

King Saud University

**Mona Philby**

King Saud University

**Fahad Alsohime**

King Saud University

**Mohamad Alobaylan**

King Saud University

**Hayfa Alabdulkarim**

King Saud University

**Badr Almosned**

King Saud University

**Deema Gashgarey**

King Faisal Specialist Hospital and Research Center

**Ghadah Felimban**

King Faisal Specialist Hospital and Research Center

**Ziyad Alkathiri**

King Faisal Specialist Hospital and Research Center

**Randa Almaghrabi**

King Faisal Specialist Hospital and Research Center

**Amr Jamal** (✉ [amrjamal@ksu.edu.sa](mailto:amrjamal@ksu.edu.sa))

King Saud University Medical City

**Mazin Barry**

King Saud University and King Saud University Medical City

**Basim Alsaywid**

Saudi Commission for Healthcare Specialties

**Fahad A. Bashiri**

## Research Article

**Keywords:** COVID-19, medical residency selection virtual interviews, national medical residency remote matching

**Posted Date:** April 28th, 2021

**DOI:** <https://doi.org/10.21203/rs.3.rs-438151/v1>

**License:**   This work is licensed under a Creative Commons Attribution 4.0 International License.

[Read Full License](#)

---

# Abstract

**Background:** During the coronavirus disease 2019 (COVID-19) pandemic, structured medical training is challenging because the necessary travel for on-site interviews could increase the spread of the disease.

**Aim:** This study was conducted to describe an urgently implemented, web-based interview process for selecting medical residents for the National Residency Matching in Saudi Arabia.

**Method:** A cross-sectional, nationwide survey (appendix 1) was sent to 4,153 residency-nominated applicants in Saudi Arabia to the matching interview for 2020.

**Results:** Among the 510 candidates who responded, 62.2% applied for medical specialties, 20.2% applied for surgical specialties, and 17.6% applied for critical care and emergency specialties. Most respondents (61.2%) never had video conferences. Besides, most respondents (80.2%) had used Zoom to conduct E-interviews, whereas only 15.9% used FaceTime. Among the respondents, 75.7% agreed that their questions regarding the residency programs were adequately answered during the virtual interviews. The top perceived factors that enhanced the experience were the free application, the clarification emails they received from the organizers, and the organizers' effective communication. Conversely, what negatively impacted the interviews were the slow and interrupted Internet, the absence of clear instructions, and the lack of previous experience with teleconferencing.

**Conclusion:** Videoconferencing was successfully implemented on an urgent basis during the COVID-19 pandemic in the medical residency application process in Saudi Arabia. The residency applicants preferred video interviews, along with the cost savings and easier logistics to conduct the interviews from various locations. Future studies to enhance this experience are warranted.

## Background:

Interviews for residency programs are crucial in the acceptance process, with on-site, face-to-face interview being integrated into the residency application process. In fact, interviews yield several pieces of information regarding the applicants that would not be found in their resumes or personal statement and were a chance for the interviewee to see the institution to which they are applying. Alternatively, on-site in-person interviews have many downsides due to cost, travel plans, and time management for both parties. Applicants usually need to fit up to ten interviews in their tight schedules in a short period together with their own educational and work duties. The other obstacle is the cost of attending all interviews, especially if it requires traveling to another city [1].

The start of the coronavirus disease 2019 (COVID-19) pandemic coincided with the application process of the medical residency programs that requires an individualized on-site in-person interview for each applicant in each center. As a result, the Saudi Commission for Healthcare Specialties (SCFHS) substituted face-to-face interviews with videoconference interviews to meet recommended precautionary

measures, such as social distancing and crowd avoidance, and reduce the risk of exposing staff to applicants who work in other institutions.

Several studies have been conducted regarding using videoconference interviews in medical and surgical training programs, but most were individualized for one program and conducted in a single center. Besides, videoconference interviews were offered as an option or as an adjunct interview to an on-site face-to-face interview [2, 3]. Moreover, most studies have concluded that videoconference interviews can be a cost-effective and efficient alternative for on-site in-person interviews [2–5]. However, in a study, applicants for urology residency programs felt that videoconference interviews are less effective than traditional in-person interviews. The applicants and faculty in this study preferred to have videoconference interviews as an adjunct to traditional interviews [6].

As technology is one of the main drivers of healthcare systems, adopting new trends in technology is crucial to align them and optimize their utilization in healthcare services [7]. Thus, there should be updated and efficient studies to facilitate the adoption of similar decisions.

When the COVID-19 pandemic was declared by the World Health Organization (WHO) in March 2020, this mandated exploring new dimensions in medical training [8]. Thus, this study was conducted to assess the national urgently prepared, web-based interview process for resident training selection during the COVID-19 pandemic, which could effectively replace traditional on-site interviews from the applicants' perspectives.

## **Methods:**

For the 2020 SCFHS matching cycle, applicants to residency programs were provided with several videoconferencing options, based on the preference and agreement of both faculty and candidates, including a web-based interview process using Zoom or a personal interview process using FaceTime. Both methods included interviews with the faculty, a description of the facilities, and the opportunity for the faculty to ask the candidates any questions. We assessed the effectiveness, estimated cost savings, convenience, and satisfaction of videoconferencing using an anonymous survey scored on a 5-point Likert scale.

## **Sample size:**

The study participants were candidates who were involved in the residency application process (March 2020).

## **Inclusion criteria:**

Residency candidates applying for the SCFHS residency programs in March 2020 through videoconferencing were included in this study.

## **Exclusion criteria:**

Other interviews, including face-to-face interviews, were excluded from the study, as they were strongly discouraged during the COVID-19 pandemic.

## **Sampling technique:**

A non-probability, consecutive sampling technique was implemented, as an invitation to participate in the survey was sent to all 4,153 residency applicants to the matching interviews for 2020.

## **Survey tool validation:**

The tool was developed based on a literature review by an expert panel, and a pilot study involving ten candidates was conducted to validate the tool for clarity and consistency. The questionnaires were sent electronically to the participants within 4 weeks of the videoconference interviews (April 15–30, 2020), with reminders for non-responders after 2 days.

## **Data analysis:**

The means and standard deviations (SDs) were used to describe continuous variables, and categorical variables were presented as frequencies and percentages. The statistical normality assumption was examined using histograms and the Kolmogorov–Smirnov statistical test, and the statistical equality of the variance assumption was assessed using Levene’s test.

Cronbach’s alpha test of reliability was performed to assess the internal consistency of the Likert-based items characterizing different concepts. Besides, a multiple-response dichotomy analysis was performed to describe the frequencies and percentages of the tick-all-that-applies questions. The overall mean scores of the Perceived Stress Scale and Perceived Satisfaction Scale with videoconferencing were computed by adding the items comprising these concepts and dividing the sum by the number of items for each concept, respectively. The chi-square test of association was performed to assess the correlations between categorically measured variables, and a multivariate logistic regression analysis was performed to explain the perceived stress of the medical residents during the televised assessment interview they had during the COVID-19 pandemic. Statistical Package for the Social Sciences (version 21; IBM Corp., Armonk, NY, USA) was used for all statistical data analyses, and  $p$ -values of less than 0.050 were used to denote statistical significance.

## **Ethical approval:**

This study on the urgent utilization of videoconference interviews in the residency application process was in accordance with the postgraduate center recommendations (memo # 9/3/311082), and data were collected after the participants have anonymously provided informed consent. Participation was voluntary and not linked to the applicants' evaluation. The results of this study will be used as a quality improvement project of the SCFHS, and the approval of the SCFHS's Institutional Review Board (# 0420-03 exp) was obtained before data collection.

## Results:

In total, 4,153 applicants for the Saudi medical residency training programs underwent remote virtual interviews. Among the 510 respondents in this survey, 51.4% were male and 48.6% were female.

Besides, 62.2% of the respondents were applying for medical specialties, 20.2% were applying for surgical specialties, and 17.6% were applying for critical care and emergency specialties (Table 1).

Most respondents (61.2%) indicated that they never had videoconferences, whereas 33.9% of them indicated that they had personally used it before, but this was the first time for them to undergo videoconference interviews, and 4.9% of them indicated that they underwent a similar experience previously. Regarding the devices used, most respondents (56.5%) used a laptop to conduct E-interviews, whereas 43.5% used mobile phones or tablets (Table 2).

Most respondents (80.2%) had used Zoom<sup>R</sup> to conduct E-interviews, whereas 15.9% used FaceTime<sup>R</sup>. Then, 3.9% of the respondents were interviewed using other videoconferencing applications.

In terms of allowance of these E-interview methods for the applicants to represent themselves, the average reply was 3.31 of 5 (SD = 1.18). However, 8.2% of the respondents had strongly disagreed that videoconferencing allowed them to fully represent themselves during E-interviews, 19.4% disagreed, 20.3% had neutral agreement, and 37.3% agreed that videoconferencing allowed them to accurately represent themselves; in addition, another 14.9% strongly agreed that videoconferencing allowed them to represent themselves accurately during interviews (Table 2).

Regarding the statement about whether their questions regarding the residency programs were adequately answered, 4.7% of respondents strongly disagreed that their inquiries were answered adequately, 5.9% disagreed, 13.7% were neutral, 50.6% agreed that their questions were adequately answered, and 25.1% strongly agreed.

In terms of saving costs, most respondents (47.1%) indicated that they could save less than 100 Saudi Riyals (SR) (\$26.7) by using this E-interview method, 17.3% indicated that they could save between 100 and 500 SR (\$26.7–133.3), and 35.7% could save more than 500 SR (\$133.3).

The top reasons/causes for which the respondents preferred videoconference interviews over traditional interviews were as follows: the top reason was the ease of the used application to conduct E-interviews

(42.5%), next was the preference due to previous experience with teleconferences (42%), and the third top reason was the committee preference to use teleconferences (38.8%). Most (63.3%) respondents preferred the videoconference interviews during the pandemic, with most (88.6%) respondents rated the event as good to excellent (Table 3).

Bivariate analysis showed a significant correlation between the respondents' lesser stress during the interviews with their better ability to represent themselves during the interview, having answers to their questions about the residency programs, and being able to rank the hospital based on the interview (Table 4). The multivariate logistic regression analysis of the medical residents' odds of having stress during the teleconference interviews also revealed significance with the candidates' ability to represent themselves during the interviews ( $p = 0.001$ ), cost savings ( $p < 0.001$ ), and the overall rating of the teleconference ( $p = 0.007$ ) (Table 5).

In terms of the factors that enhanced the current teleconference experience, the top perceived factors by the respondents were the free use of the application, followed by the clarification emails they received from the organizers that made it a better experience, and the organizers' effective communication (Fig. 1).

Conversely, the top perceived factors that negatively affected the E-interviews were the slow, inconsistent, and interrupted Internet speed and connection, the absence of clear instructions, and the lack of previous experience with these applications used for teleconferencing (Fig. 2).

## **Discussion:**

Each year, thousands of candidates apply for residency training programs in Saudi Arabia under the umbrella of the SCFHS, which nominates some candidates to proceed with the interviews for the final matching [9]. Every candidate will have multiple interviews in different centers of the specialty they were nominated for. The interview phase is considered challenging and crucial in the application process for the residency programs. Several elements other than the portfolio of the applicants should be considered in which every residency review committee will look for in every applicant; these elements include communication skills, attitude, reasons of interest in the specialty and center, honesty, and problem-solving skills.

In normal circumstances, in-person interviews were the only interviewing method used in the residency application process. However, over the years, this method has met some obstacles that were identified and faced in every cycle by either the residency programs or the applicants. These obstacles include that the budget for each center is considered way less than the cost of conducting the interviews each year, and most applicants who were obligated to travel to other cities to attend these interviews admit that they are time- and money-consuming due to flights, accommodation, and transportation [1,10]. In addition, they are time-consuming for the applicants and programs as well because these interviews minimize the efficacy of the whole educational process for some time and increase the number of off days.

Furthermore, in-person interviews require a lot of effort to schedule the interviews for each day, and there are no flexibilities in times and dates of interviews for those who have scheduling conflicts between centers. Upon the start of the 2020 matching cycle and before the initiation of interviews, the COVID-19 pandemic was spreading fast, which led to the cessation of most jobs and social and personal activities. As a result, the WHO recommended implementing physical distancing measures, such as canceling all social events and gatherings and minimizing the number of employees at every workplace [8].

Consequently, the SCFHS released new regulations to ensure the maintenance of the residency training interview process. Videoconference interviews using different platforms were approved as the new method of running interviews, and this study demonstrated the successful implementation of such a national residency interview style. Videoconference interviews are not a new method of interviewing: some studies have compared in-person interviews with videoconference interviews in terms of financial costs, time consumption, effectiveness, and satisfaction. A study conducted in Washington, DC, USA, has shown that web-based interviews were cost-effective and timesaving for both applicants and residency programs [4]. Another study conducted at Kaplan Joint Center, Newton, Massachusetts has found that most study participants were satisfied with videoconference interviews [5].

With the ever-emerging innovations and advancements in telecommunication, technology has become an evident influence in medicine. Internet applications have aided the ability to deliver appropriate, evidence-based care at vast speeds. Telemedicine has emerged as an economical means of providing care to all corners of the world. Besides, telemedicine is now being used to link major tertiary hospitals with peripheral primary care centers to provide adequate care in light of the COVID pandemic and the particular circumstances that applicants had to face and adjust to their application process and interviews [11]. The use of telecommunication tools has brought some ease to the situation.

Videoconferencing has been mandated for conducting meetings and rounds in hospitals, so the use of such videoconferencing tools was implanted concerning the applicant's interview. In this study, before the interviews, 61.2% of the respondents noted that it was their first time to use videoconferencing tools to conduct their interview. Many devices are currently being used by medical staff to telecommunicate, including laptops, desktop computers, tablets, and handheld mobile devices. The data showed that 53.9% of the applicants used laptops for videoconferencing. Many applications are being used nowadays to communicate in business/work settings and for personal use. Zoom, Microsoft Teams, FaceTime, and Skype are among the most popular applications used during the COVID-19 pandemic [12]. Regarding the videoconferencing electronic interface/application used by the applicants, 80.2% of the applicants used Zoom.

Although in-person interviews allow the interviewer to feel the applicant's sense and read into their reactions more clearly, 37.3% of the applicants agreed that in-person interviews allowed them to represent who they really are accurately. Besides, in-person interviews might allow the applicants to ask more freely regarding the program from what they might notice in the environment. The use of applications might limit the questions and the timing for such inquiries. In this study, 50.6% of the applicants agreed that

their questions about the residency program were answered, and 30% agreed that they felt comfortable ranking the training site based on their interview.

The financial investment needed for on-site interviews and the time spent distract from the educational pursuits and clinical responsibilities. Applicants are usually required to fund their travel and accommodation and travel requirements, adding additional financial burden to an already costly medical education. Medical residency programs allocate considerable funds to interview-day meals, tours, staffing, and others. Comparing in-person interviews with videoconference interviews, 35.7% of the applicants noted that each of them saved more than 500 SR (\$133). In addition, travel and preparation time for several interviews in various locations may decrease the clinical productivity of the applicants in the interviews [4]. In other countries, the cost is even higher, with residency applicants traveling for a median of 3 weeks and spending approximately \$4,000 [1,10].

Most participants preferred videoconference interviews compared with in-person interviews; however, one of the negative sides of videoconference interviews is the lack of hostility receptions on-site that are usually conducted the night before that was often found to be important by applicants [13]. A survey involving 400 residents in 2019 has found that 45% were stressed by their in-person interviews, which is much higher than that found in this study [14]. Other benefits are the decreased costs; a previous evaluation of a residency program web-based interview was found to be less costly by a mean of \$193 [6]. The participants' overall rating of the videoconference interviews was above average, and thought its organization was satisfactory, in a 2017 evaluation of videoconference interviews for fellowship programs, 85% of the candidates were satisfied [5].

A teleconference interview is different from an in-person interview, where each interview setting has a different level of stress that is measurable for each interviewee. In this study, most medical residents expressed that they did not have any prior experience with videoconference interviews. However, medical residents stated that videoconference interviews provided more time management than in-person interviews. They would recommend videoconference interviews to a colleague; these indications show that teleconference interviews are less stressful than in-person interviews, as more medical residents rated the event higher than an in-person interview. Johnson et al. (2019) has proposed that in-person interviews allow for more conversation; however, they do not differ significantly from other interviewing methods [15]. Furthermore, as some remote interviews might be necessary for some situations, it will reduce the information obtained during the interview. Therefore, during a teleconference interview, the interviewee's stress level might be reduced as there is less demand for more detailed information, as they would be in an in-person interview.

Most published studies on videoconference interviews did not report factors that enhanced applicants' experience, from a technical viewpoint, as they primarily focused on reporting its efficacy, relevance, and applicability as well as applicants' preference and satisfaction. However, when we look to the commonly reported reasons for choosing videoconference interviews, for example, cost reduction [1-3], the use of

free applications to conduct interviews would be a crucial factor in facilitating this experience, and this is by far the top perceived factor by the respondents in this study.

A recent study on videoconference interviews for surgical fellowship recruitment during the COVID-19 pandemic has reported that three of 16 applicants underwent mock interviews to facilitate their experience [16]. Two of the three applicants (66.7%) found it helpful, whereas among the respondents of this study, 22% perceived it as helpful. Providing applicants with adequate information about this type of interview were performed in most studies reviewed and probably eased the interview flow. Furthermore, technology testing and registering software accounts ahead of time were recommended by Aparna Joshi et al. to avoid any obstacles on the event day [17]. They also recommended hiring a technology assistant to intervene whenever needed.

Many factors have hindered the E-interviews experience for applicants; the most encountered factor was a slow or interrupted Internet connection, followed by the absence of clear instructions and the lack of previous experience in teleconferencing, whereas others faced difficulties with not receiving emails from the program directors, having issues with the application process itself.

Studies have also demonstrated the same problems, especially Internet connection issues. Both interviewers and applicants have faced Internet connection problems that resulted in low audiovisual quality. This was attributed to the fact that many applicants may not own the appropriate technology required for these interviews, and their home settings may not be suitable to hold a professional videoconference interview [4].

Shah et al. have suggested preventing such problems by establishing a protocol for troubleshooting in advance of the actual interview. They provided written instructions for establishing a software account a month before the videoconference interview, conducting a test call with the program coordinator to verify a successful connection during the preceding week, and offering faculty members who were unfamiliar with the technology a 5-min tutorial on the day of the interview [6].

## **Conclusion:**

Videoconferencing was successfully implemented on an urgent manner during the COVID-19 pandemic in the medical residency application process in Saudi Arabia. The residency applicants preferred videoconference interviews, along with the cost savings and easier logistics to conduct the interviews from various locations. Future studies to enhance this experience are warranted.

## **Abbreviations:**

COVID-19: coronavirus disease 2019

SCFHS: Saudi Commission for Healthcare Specialties

## Declarations:

**Ethics approval and consent to participate:** The study was approved by the Institutional Review Board of the Saudi Commission for Healthcare Specialties (IRB approval code 0420-03), Riyadh, Saudi Arabia. Informed consent was obtained from all the participants.

**Consent for publication:** Not applicable.

**Availability of data and materials:** All data in this study will be made available upon reasonable request, by directly contacting Dr Mohamad-Hani Temsah at [mtemsah@ksu.edu.sa](mailto:mtemsah@ksu.edu.sa)

**Competing interests:** None declared.

**Funding:** The authors are grateful to the Deanship of Scientific Research, King Saud University, for funding this work through the Vice Deanship of Scientific Research Chairs.

**Authors' contributions:** MHT, FK, KH, MP, MB, RA, and BA conceptualized the study, analyzed the data, and wrote the manuscript. FA, MA, HA, BA, DG, GF, and ZA contributed to the study design; collected, analyzed, and interpreted the data; and edited the manuscript. FAB contributed to the study design, interpreted the data, and edited the manuscript. AJ and AAH interpreted the data and finalized the manuscript. All authors reviewed and approved the final version of the manuscript.

**Acknowledgements:** This study was supported by the Deanship of Scientific Research, Research Chair for Evidence-Based Health Care and Knowledge, King Saud University. The research team is grateful to the Saudi Commission for Healthcare Specialties (SCFHS), especially Dr. Sami Alhaidar and Ms Sheroug Alhamoudi, for their valuable support. Also, we are thankful for the statistical data analysis consultation and support offered by [www.hodhodata.com](http://www.hodhodata.com).

## References:

1. Kerfoot BP, Asher KP, McCullough DL: Financial and educational costs of the residency interview process for urology applicants. *Urology* 2008, 71(6):990-994.
2. Daram SR, Wu R, Tang SJ: Interview from anywhere: feasibility and utility of web-based videoconference interviews in the gastroenterology fellowship selection process. *Am J Gastroenterol* 2014, 109(2):155-159.
3. Vadi MG, Malkin MR, Lenart J, Stier GR, Gatling JW, Applegate RL, 2nd: Comparison of web-based and face-to-face interviews for application to an anesthesiology training program: a pilot study. *Int J Med Educ* 2016, 7:102-108.
4. Pourmand A, Lee H, Fair M, Maloney K, Caggiula A: Feasibility and Usability of Tele-interview for Medical Residency Interview. *West J Emerg Med* 2018, 19(1):80-86.

5. Healy WL, Bedair H: Videoconference Interviews for an Adult Reconstruction Fellowship: Lessons Learned. *J Bone Joint Surg Am* 2017, 99(21):e114.
6. Shah SK, Arora S, Skipper B, Kalishman S, Timm TC, Smith AY: Randomized evaluation of a web based interview process for urology resident selection. *J Urol* 2012, 187(4):1380-1384.
7. Thimbleby H: Technology and the future of healthcare. *J Public Health Res* 2013, 2(3):e28.
8. WHO Director-General's opening remarks at the media briefing on COVID-19 - 18 March 2020 [<https://www.who.int/dg/speeches/detail/who-director-general-s-opening-remarks-at-the-media-briefing-on-covid-19—18-march-2020>]
9. Saudi Commission for Health Specialties Matching System Principles and Guidelines [<https://www.scfhs.org.sa/MESPS/Documents/SCFHS-Eng-MS-2020.pdf>]
10. Cabrera-Muffly C, Chang CWD, Puscas L: Current interview trail metrics in the otolaryngology match. *Otolaryngol Head Neck Surg* 2017, 156(6):1097-1103.
11. Alexander GC, Tajanlangit M, Heyward J, Mansour O, Qato DM, Stafford RS: Use and content of primary care office-based vs telemedicine care visits during the COVID-19 pandemic in the US. *JAMA Network Open* 2020, 3(10):e2021476-e2021476.
12. Jerome JTJ, Mercier F, Mudgal CS, Arenas-Prat J, Vinagre G, Goorens CK, Rivera-Chavarría IJ, Sechachalam S, Mofikoya B, Thoma A: Perspectives and consensus among International Orthopaedic Surgeons during initial and mid-lockdown phases of coronavirus disease. *J Hand Microsurg* 2020.
13. Schlitzkus LL, Schenarts PJ, Schenarts KD: It was the night before the interview: perceptions of resident applicants about the preinterview reception. *J Surg Educ* 2013, 70(6):750-757.
14. Masciello M, Malekzadeh S: Peri-interview communication in the otolaryngology residency match: The applicant perspective. *Laryngoscope* 2021, 131(1):28-32.
15. Johnson DR, Scheitle CP, Ecklund EH: Beyond the in-person interview? How interview quality varies across in-person, telephone, and Skype interviews. *Soc Sci Comput Rev* 2019:0894439319893612.
16. Vining CC, Eng OS, Hogg ME, Schuitevoerder D, Silverman RS, Yao KA, Winchester DJ, Roggin KK, Talamonti MS, Posner MC *et al*: Virtual surgical fellowship recruitment during COVID-19 and its implications for resident/fellow recruitment in the future. *Ann Surg Oncol*. 2020, 27:911-915.
17. Joshi A, Bloom DA, Spencer A, Gaetke-Udager K, Cohan RH: Video interviewing: A review and recommendations for implementation in the era of COVID-19 and beyond. *Acad Radiol* 2020, 27(9):1316-1322.

## Tables:

Table 1  
Descriptive analysis of the medical residents' demographic and professional characteristics.

	Frequency	Percentage
Sex		
Female	248	48.6
Male	262	51.4
Specialty		
Other (please specify)	8	1.6
Pediatrics	148	29
Family medicine	32	6.3
Internal medicine	33	6.5
Surgery	27	5.3
Emergency medicine	39	7.6
Psychiatry	17	3.3
Pharmacological	15	2.9
Genitourinary	3	0.6
Radiology	29	5.7
Pathology	15	2.9
Dentistry	17	3.3
Obstetrics and gynecology	35	6.9
Neurology/surgery	10	2
Critical care	51	10
Dermatology	20	3.9
Ophthalmology	11	2.2

Table 2

Descriptive analysis of the medical residents' experience and perceptions about online medical students; evaluation of the videoconference interviews.

	Frequency	Percentage
<b>Prior to this videoconference interview, did you have prior experience of this tool?</b>		
No, my first time to use video conferencing	312	61.2
Yes I used video conferencing before, but first time to use it for residency interview	173	33.9
Yes I used video conferencing before, including for residency interview	25	4.9
<b>The videoconferencing electronic device used</b>		
PC (laptop)	275	53.9
PC (desktop)	13	2.5
Mobile	222	43.5
<b>The videoconferencing electronic interface/application used</b>		
Other (please specify)	20	3.9
Face time	81	15.9
Zoom	409	80.2
<b>The interview allowed me to accurately represent who I am</b>		
Strongly disagree	42	8.2
Disagree	99	19.4
Neither agree or disagree	103	20.2
Agree	190	37.3
Strongly agree	76	14.9
<b>My questions about this residency program were answered</b>		
Strongly disagree	24	4.7
Disagree	30	5.9
Neither agree or disagree	70	13.7
Agree	258	50.6
Strongly agree	128	25.1

	Frequency	Percentage
<b>I feel comfortable ranking King Saud University Medical City based on my interview</b>		
Strongly disagree	53	10.4
Disagree	55	10.8
Neither agree or disagree	147	28.8
Agree	153	30
Strongly agree	102	20
<b>Compared to the Face-to-Face interview, how much money did the Video Interview save you (in SR)</b>		
Less than 100 SR	240	47.1
100–500 SR	88	17.3
More than 500 SR	182	35.7

Table 3

Descriptive analysis of the medical residents' indicators of satisfaction with the online applicants' evaluation.

	Frequency	Percentage
<b>How likely is it that you would recommend the video conferencing interviews to a colleague mean (SD) Likert (1–11) rating</b>		7.95 (1.65)
<b>With the COVID-19 pandemic, how do you find videoconference interviews compared with in-person interviews?</b>		
Video Interviews are preferable	323	63.3
Equally preferable	96	18.8
Face-to-face interview are preferable	91	17.8
<b>How stressed were you during the videoconference interview?</b>		
<b>Mean (SD) 1–5 Likert rating</b>		
Not stressful at all	144	28.2
Slightly stressful	210	41.2
Moderately stressful	87	17.1
Highly stressful	42	8.2
Very stressful	27	5.3
<b>Videoconference interviews decreased the costs for the candidates: mean (SD) 1–5 Likert rating</b>		
Strongly disagree	20	3.9
Disagree	13	2.5
Neither agree nor disagree	48	9.4
Agree	202	39.6
Strongly agree	227	44.5
<b>Overall, how would you rate the event? Mean (SD) 1–5 Likert rating</b>		3.77 (1.1)
Very poor	18	3.5
Fair	40	7.8
Good	143	28
Very good	154	30.2
Excellent	155	30.4

	Frequency	Percentage
<b>How organized was the event? Mean (SD) 1–5 Likert rating</b>		3.79 (0.88)
Very disorganized	4	0.8
Not organized	25	4.9
Somewhat organized	160	31.4
Just organized	205	40.2
Very organized	116	22.7
<b>Before the event, how much of the information that you needed did you get? Mean (SD) 1–5 Likert rating</b>		3.87 (0.86)
Very Little information	4	0.8
Little information	28	5.5
Some of the information	116	22.7
Most of the information	242	47.5
A lot of information	120	23.5
<b>Was the event length too long, too short, or about right? Mean (SD) 1–5 Likert rating</b>		2.79 (0.61)
Very short	19	3.7
Short	94	18.4
Just the right length	378	74.1
Long	12	2.4
Very prolonged	7	1.4
<b>Rate your satisfaction with the interview aspects below (1–5 Likert satisfaction scale)</b>		
Picture quality		3.76 (0.85)
Voice quality		3.66 (1.03)
Battery/power supply issues		4.14 (0.72)
Your time management flexibility		3.90 (0.98)
Your place (office/hospital/home) flexibility		4.19 (0.82)

Table 4

Bivariate analysis of the medical residents' stress during their teleconference interviews.

	Stress during the videoconference interviews		Test statistic	P-value
	Low	High		
Sex				
Female	216 (49)	46.4%)	$\chi^2 (1) = 0.162$	0.688
Male				
Specialty				
Other (please specify)	8 (1.8)	0	$\chi^2 (16) = 24.10$	0.088
Pediatrics	131 (29.7)	17 (24.6)		
Family medicine	28(6.3)	4 (5.8)		
Internal medicine	27 (6.1)	6 (8.7)		
Surgery	19 (4.3)	8 (8.6)		
Emergency medicine	34 (7.7)	5 (7.2)		
Psychiatry	17 (3.9)	0		
Pharmacological	13 (2.9)	2 (2.9)		
Genitourinary	1 (0.2)	2 (2.9)		
Radiology	21 (4.8)	8 (11.6)		
Pathology	14 (3.2)	1 (1.4)		
Dentistry	15 (3.4)	2 (2.9)		
Obstetrics & Gynecology	32 (7.3)	3 (4.3)		
Neurology/surgery	8 (1.8)	2 (2.9)		
Critical care	45 (10.2)	6 (8.7)		
Dermatology	18 (4.1)	2 (2.9)		
Ophthalmology	10 (2.3)	1 (1.4)		
<b>Prior to this videoconference interview, did you have prior experience in this tool?</b>				

	<b>Stress during the videoconference interviews</b>			
No	277 (62.8)	35 (50.7)	$\chi^2 (1) = 3.70$	0.055
Yes	164 (37.2)	34 (49.3)		
<b>The videoconferencing electronic device used</b>				
PC (laptop)	237 (53.7)	38 (55.1)	$\chi^2 (2) = 0.46$	0.795
PC (Desktop)	12 (2.7)	1 (1.4)		
Mobile	192 (43.5)	30 (43.5)		
<b>The videoconferencing electronic interface/application used</b>				
Other (please specify)	19 (4.3)	1 (1.4)	$\chi^2 (2) = 4.10$	0.129
Face Time	74 (16.8)	7 (10.1)		
Zoom	348 (78.9)	61 (88.4)		
<b>The interview allowed me to accurately represent who I am. Mean (SD) Likert agreement (1–5) scale</b>	3.46 (1.1)	2.33 (1.31)	$t(508) = 7.81$	< 0.001
<b>My questions about this residency program were answered. Mean (SD) Likert agreement (1–5) scale</b>	3.97 (0.90)	3.12 (1.37)	$t(508) = 6.72$	< 0.001
<b>I feel comfortable ranking the hospital based on my interview</b>	3.48 (1.17)	2.77 (1.31)	$t(508) = 4.62$	< 0.001
<b>Compared with in-person interviews, how much money did videoconference interviews save you (in SR)</b>				
Less than 100 SR	204 (46.3)	36 (52.2)	$\chi^2 (2) = 2.36$	0.308
100–500 SR	74 (16.8)	14 (20.3)		
More than 500 SR	163 (37)	19 (27.5)		
<b>How likely is it that you would recommend videoconference interviews to a colleague? Mean (SD) Likert (1–11) rating</b>	8.10 (1.61)	7.33 (1.74)	$t(508) = 3.9$	0.001
<b>With the COVID19 pandemic, how do you find videoconference interviews compared with in-person interviews?</b>				

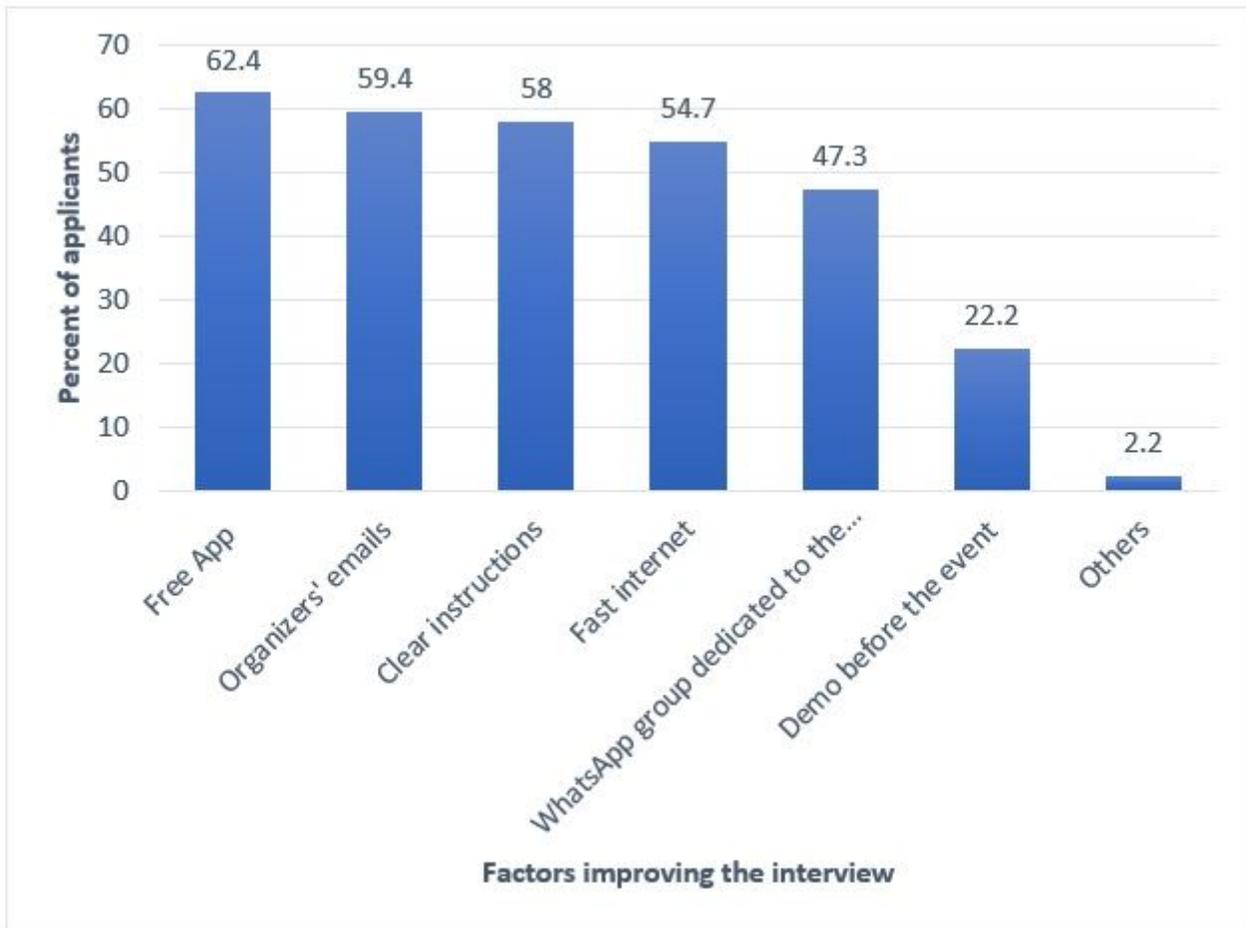
	<b>Stress during the videoconference interviews</b>			
Videoconference interviews are preferable	294 (66.7)	29 (42)	$\chi^2(2) = 39.9$	< 0.001
Equally preferable	87 (19.7)	9 (13)		
Face-to-face interviews are preferable	60 (13.6)	31 (44.9)		
<b>Videoconference interviews decreased the costs for the candidates. Mean (SD) 1–5 Likert rating</b>	4.32 (0.78)	3.30 (1.52)	$t(73.8) = 5.41$	< 0.001
<b>Overall, how would you rate the event? Mean (SD) 1–5 Likert rating</b>	3.87 (0.98)	3.10 (1.4)	$t(79.2) = 4.63$	< 0.001
<b>How organized was the event? Mean (SD) 1–5 Likert rating</b>	3.83 (0.84)	3.56 (1.04)	$t(82.64) = 2.13$	0.036
<b>Prior to the event, how much of the information that you needed did you get? Mean (SD) 1–5 Likert rating</b>	3.89 (0.85)	3.75 (0.95)	$t(85.8) = 1.20$	0.25
<b>Was the event length too long, too short, or about right? Mean (SD) 1–5 Likert rating</b>	2.82 (0.55)	2.59 (0.86)	$t(76.95) = 2.14$	0.036
<b>Rate your satisfaction with the interview aspects below (1–5 Likert satisfaction scale)</b>				
Picture quality	3.81 (0.81)	3.47 (1.1)	$t(80.4) = 2.41$	0.018
Voice quality	3.71 (0.98)	3.38 (1.19)	$t(83.33) = 2.18$	0.032
Battery/power supply issues	4.14 (0.71)	4.12 (0.81)	$t(508) = 0.30$	0.774
Your time management flexibility	3.94 (.92)	3.65 (1.28)	$t(79.5) = 1.80$	0.076
Your place (office/hospital/home) flexibility	4.21 (0.78)	4.02 (1.04)	$t(80.44) = 1.41$	0.163

Table 5

Multivariate logistic regression analysis of the medical residents' odds of having stress during teleconference interviews.

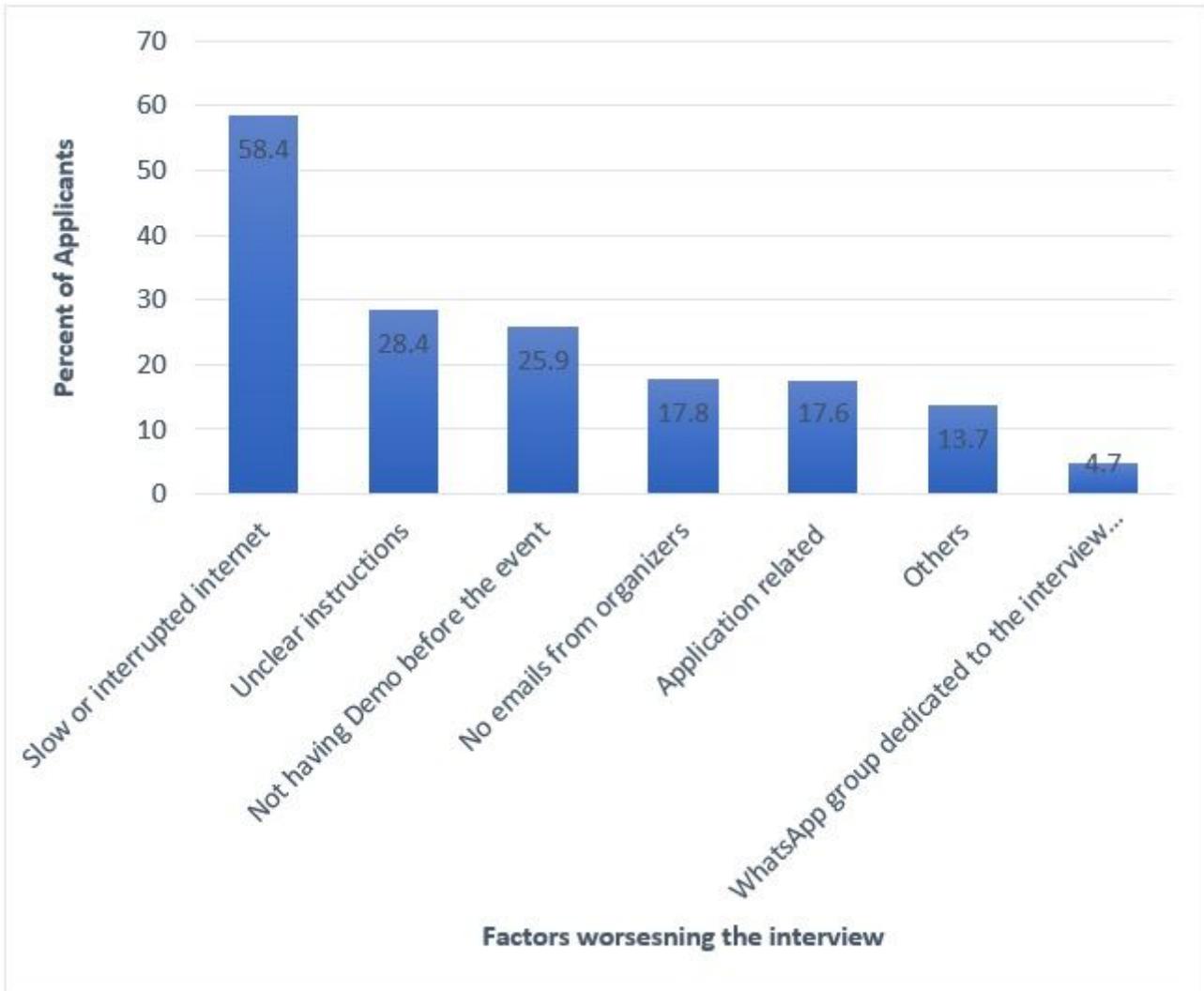
	Adjusted odds ratio	95% CI for OR		P-value
		Lower	Upper	
Previously experienced with teleconference (Yes)	2.351	1.221	4.526	0.011
Used teleconference interface (FaceTime + Zoom)	3.264	1.296	8.221	0.012
Self-representing during the interview (rating)	0.588	0.425	.813	0.001
Preferred videoconference based on colleague's advice	0.050	0.005	.540	0.014
Willingness to recommend teleconference to others (rating)	1.213	0.920	1.600	0.172
Prefers videoconference only (reference group)				0.012
Prefers both video conference and in-person	0.900	0.351	2.307	0.826
Prefers in-person interviews only	3.114	1.390	6.979	0.006
Perceived cost reduction due to teleconference (rating scale)	0.386	0.282	0.529	<0.001
Overall rating of the teleconference quality (Likert rating scale)	0.557	0.365	0.850	0.007
Use of prior WhatsApp communication prior to the conference	1.630	0.845	3.144	0.145
Speedy Internet connection during the interview	2.626	1.327	5.194	0.006
Not having demonstration of the videoconferencing application before the event	1.953	0.974	3.915	0.059
Overall rating of the teleconference organization (Likert rating scale)	1.391	0.917	2.111	0.120
Constant	0.355			0.473

## Figures



**Figure 1**

The medical residency candidates' perceived factors that enhanced the evaluation by videoconferencing.



**Figure 2**

The medical residency candidates' perceived factors that hindered the evaluation by videoconferencing.

## Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- [Appendix1ZoomResidencyInterviues.pdf](#)