A Comparison of Admissions Data Between Virtual and In-person Dental School Interviews

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Abstract

Objectives: The COVID-19 pandemic forced many dental schools to conduct some or all of their interviews virtually. The purpose of the study was to evaluate whether an association existed between interview setting and applicant characteristics, specifically focusing on the difference in the interview score between applicants who chose virtual interviews and those who chose in-person interviews.

Methods: Demographic and admission data were obtained from the 101 interviewed candidates from the XXXX 2021-2022 application cycle. Distribution of demographics and interview preference were assessed. Simple and multiple generalized linear models (GLM) were run to examine the difference in the applicants’ interview score between in-person and virtual interviews.

Results: Of the 29 in-person interviews, 16 (55.17%) were offered acceptances, while 31 (43.06%) of the 72 virtual interviews were accepted, a difference that was not statistically significant (p-value = 0.380). Preference for the interview format was not associated with any of the applicants’ factors including gender, current residence (the four bureau-designated regions), overall grade point average (GPA), science GPA, Dental Admissions Test (DAT) Academic Average score, and perceptual ability test (PAT) score. In addition, there was no statistical difference in the interview score between the two interview formats.

Conclusions: The effect of virtual interviewing on interview scores and applicants’ admission rate was found to be statistically insignificant. If further study with larger sample sizes confirms this finding, virtual interviewing could be considered as a viable alternative to in-person interviewing in the dental school admissions process.

Keywords: dental education, dental school admissions, admissions interview, virtual interview, education technology

1. Introduction

As many have experienced over the past few years, the COVID-19 pandemic drastically altered education at every level. The dental school application process was among those areas affected. Previous application cycles included in-person interviews with applicants, which were opportunities for the admissions committee to assess applicants’ interpersonal and communication skills. These interviews were conducted by faculty, alumni and/or current students at the school and represented an irreplaceable part of an applicant’s wholistic evaluation. The interview adds an additional dimension to the assessment of applicants that would be unsupplied by cognitive factors such as grade point average (GPA) and admissions test scores. (Wen, Aldosari, & Park, 2022; Myers, Covington III, & LaRue, 2021; Price & Park, 2018; Park et al., 2010) It has also been found that interviews can be predictive of success in dental school, both academic performance as well as noncognitive factors such as professionalism and patient management. (Alaki et al., 2016; Foley & Hizaki, 2013; Duff, Katcher, Daniels, & Ramaswamy, 2020; Walker, Killip, & Fuller, 1985) Outside of the actual interview, applicants also had the chance to spend time evaluating the school facilities, faculty, students, and the surrounding area. (Burton & McManus, 2022) The in-person interview was a crucial part of the decision process for both applicant and admissions committee.

The worldwide COVID-19 pandemic forced most dental schools to begin conducting interviews virtually in 2020, a sudden, radical shift from previous cycles. This dramatic change had some advantages, but it was considered to have
many drawbacks. Some of the positive aspects of virtual interviewing include ease of scheduling, reduced cost to applicants and admissions committees, the chance to interview at more schools, and reduced need for travel. (Rekawek, Graves, Panchal, & Schlieve, 2021; Daram, Wu, & Tang, 2014; Shaver, Foy, & Gartrell, 2023; Huppert et al., 2020) Disadvantages include the reduced ability to assess applicants’ interpersonal skills, a lack of personal interaction, technical difficulties, and the lost chance to explore the surrounding area. (Huppert et al., 2020; Jones & Abdelfattah, 2020; Kai, Park, & Bay, 2022) All these factors have combined to create a mixed opinion about virtual interviewing when compared with in-person interviewing. One study recommended that virtual interviews should be used only in special circumstances, rather than as a complete replacement of in-person interviews. (Vallejo et al., 2021) However, another study showed a strong positive opinion of virtual interviewing, particularly among faculty, leading them to prefer virtual over in-person interviews in years to come. (Yee, Moran, & Chapman, 2021)

Virtual interviewing for healthcare training programs has been studied mostly in the graduate medical education community. One study found that there was no difference in admissions rate between those who participated in a virtual interview and those who participated in an in-person interview. (Vadi et al., 2016) However, this study was conducted in an anesthesiology training program in 2016; since that time, the COVID-19 pandemic has led to a rapid advance in video conferencing quality and accessibility. Additionally, the study population likely held unique differences from a predoctoral dental education program. Studies evaluating virtual interviewing in dental education, especially at the pre-doctoral level, are sparse and more research is needed in this area.

As the world gradually recovered from the COVID-19 pandemic, safe practices and personal protection equipment became more accessible and commonplace. This led XXXX to conduct a hybrid model of both virtual and in-person interviews during the 2021-2022 application cycle, based on applicants’ preference. This presented a unique opportunity to evaluate the differences between virtual and in-person interviewing in the context of dental school admissions. The purpose of the study was to evaluate whether there was an association between interview setting preference and any applicant characteristics, which included gender, area of current residence, underrepresented minority status, overall grade point average (GPA), science GPA, Dental Admissions Test (DAT) score, and Perceptual Ability Test (PAT) score. Finally, this investigation specifically focused on the difference in interview score when comparing applicants who chose virtual interviews and those who chose in-person interviews.

2. Methods

2.1 Study Participants

The study was conducted using pre-existing data from admissions applications submitted to XXXX during the 2021-2022 application cycle. The dental school application process includes a primary, centralized application, consisting of a personal statement, letters of recommendation, demographics, academic performance, area of study, course prerequisites, shadowing and leadership experiences, and community service. After a preliminary screening of the total 993 applications, the XXXX admission committee invited 101 candidates to an interview. Applicants who were offered an interview were given the option to select whether they would prefer an in-person or virtual interview, based on personal preference and date availability.

A virtual interview day consisted of the following: orientation, two interviews, financial aid presentation, and current student panel, all conducted via Zoom (Zoom.com, San Jose, CA). An in-person interview day was composed of an orientation, two interviews, and a tour with current students. Applicants interviewing in-person also joined other applicants for the virtual financial aid presentation and student panel.

Each applicant was interviewed by two interviewers, with at least one faculty interviewer, and the interviewers evaluated the applicant in the following areas: demonstrated passion for dentistry; interpersonal and communication skills; professional maturity; personal development; leadership potential and initiative; research experience, interest, and/or potential; potential for being a compassionate and empathetic clinician and team player; and overall impression. Within each of the previous areas, the applicant was rated on a scale from poor, fair, average, above average, to exceptional. Each interviewer would then incorporate the ratings from the previous areas and any other information gleaned from the interview to assign an overall score to the applicant. The rating scale ranged from 1-5 with the following recommendations: 1-accept without hesitation; 2-accept; 3-accept with reservation; 4-waitlist; and 5-reject. Each interviewed applicant’s case was then presented to the admissions committee (composed of faculty, alumni members, fourth-year dental students, and the director of admissions), discussed, and rated again collectively using the same 1-5 scale before a final decision was made.

Applicants’ self-reported factors that were included in this statistical analysis and that could potentially influence their interview choice or score were: gender, current residence (the four bureau-designated regions), overall grade point average (GPA), science GPA, Dental Admissions Test (DAT) Academic Average score, and perceptual ability test (PAT) score. Applicants were also categorized based on whether or not they identified with any under-represented minority
applicants, which included African American or Black, Filipino, Hmong, Vietnamese, Hispanic/Latinx, Native American, Alaskan Native, and Native Hawaiian/other Pacific Islander, groups frequently underrepresented in the dental field and health professions in general. (Mertz et al., 2016)

2.2 Data Collection and Analysis

The pertinent data was obtained from the XXXX Office of Dental Education and statistical analysis was performed on the admissions data. To be included in the analysis, an applicant needed to participate in an interview at XXXX in the 2021-2022 cycle. Univariate and bivariate analysis were first conducted to describe the overall applicants' characteristics and admission scores, then stratified by the interview method. Frequency and percentages for demographics were assessed and tested using Fisher’s exact test, and the means with standard deviations for test scores were calculated and tested using Mann-Whitney U test.

Simple and multiple generalized linear models (GLM) were then run, with family Poisson and link identity, to assess the factors associated with the overall interview score. For sensitivity analyses, we further explored the association of the applicants’ factors on the faculty and students interviewees separately. Alpha was set at 0.05, and all statistical analysis was conducted using Stata 17.1 (STATACorp, College Station, TX, USA).

3. Results

Of all the applicants to XXXX during the 2021-2022 application cycle, 101 were interviewed (Table 1). A majority of the applicants identified as female (59.4%), and the majority were from the Northeast (35.6%) or the South (31.7%). Of these applicants, 29 chose an in-person interview (28.7%), while 72 (71.29%) opted for a virtual interview. Out of the 29 in-person interviews, 16 (55.17%) applicants were offered acceptances, while 31 (43.06%) of the 72 virtual interviewing applicants were accepted. Of the interviewing applicants who self-identified with groups under-represented minorities in dentistry (25.0%), a higher proportion (40.0%) opted for an in-person interview than the proportion (24.67%) of those who were not considered from an under-represented minority group.

When comparing the mean GPA, science GPA, average DAT scores and PAT scores, none of these characteristics were statistically different between those who chose to have the in-person interview and those who chose virtual. (Table 1).
Table 1. Characteristics of 2021-2022 applicants to HSDM by method of interview (Place, date.)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Overall Frequency(n)/Average</th>
<th>Percent/SDa</th>
<th>In-Person Frequency(n)/Average</th>
<th>Percent/SDa</th>
<th>Virtual Frequency(n)/Average</th>
<th>Percent/SDa</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>101</td>
<td>100.0%</td>
<td>29</td>
<td>28.7%</td>
<td>72</td>
<td>71.29%</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>41</td>
<td>40.6%</td>
<td>11</td>
<td>26.8%</td>
<td>30</td>
<td>73.2%</td>
<td>0.824*</td>
</tr>
<tr>
<td>Female</td>
<td>60</td>
<td>59.4%</td>
<td>18</td>
<td>30.0%</td>
<td>42</td>
<td>70.0%</td>
<td></td>
</tr>
<tr>
<td>URMb</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.199*</td>
</tr>
<tr>
<td>No</td>
<td>73</td>
<td>74.5%</td>
<td>18</td>
<td>24.67%</td>
<td>55</td>
<td>75.3%</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>25</td>
<td>25.5%</td>
<td>10</td>
<td>40.0%</td>
<td>15</td>
<td>60.0%</td>
<td></td>
</tr>
<tr>
<td>Current residence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northeast</td>
<td>36</td>
<td>35.6%</td>
<td>12</td>
<td>33.3%</td>
<td>24</td>
<td>66.7%</td>
<td></td>
</tr>
<tr>
<td>Midwest</td>
<td>17</td>
<td>16.8%</td>
<td>5</td>
<td>29.4%</td>
<td>12</td>
<td>70.6%</td>
<td>0.482*</td>
</tr>
<tr>
<td>South</td>
<td>32</td>
<td>31.7%</td>
<td>10</td>
<td>31.3%</td>
<td>22</td>
<td>68.8%</td>
<td></td>
</tr>
<tr>
<td>West</td>
<td>16</td>
<td>15.8%</td>
<td>2</td>
<td>12.5%</td>
<td>14</td>
<td>87.5%</td>
<td></td>
</tr>
<tr>
<td>Application status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accepted</td>
<td>47</td>
<td>47.5%</td>
<td>16</td>
<td>34.0%</td>
<td>31</td>
<td>66.0%</td>
<td>0.380†</td>
</tr>
<tr>
<td>Rejected</td>
<td>52</td>
<td>52.5%</td>
<td>13</td>
<td>25.0%</td>
<td>39</td>
<td>75.0%</td>
<td></td>
</tr>
<tr>
<td>GPAc</td>
<td>3.93</td>
<td>0.093</td>
<td>3.95</td>
<td>0.054</td>
<td>3.92</td>
<td>0.103</td>
<td>0.350†</td>
</tr>
<tr>
<td>Science GPA</td>
<td>3.92</td>
<td>0.110</td>
<td>3.94</td>
<td>0.071</td>
<td>3.91</td>
<td>0.123</td>
<td>0.765†</td>
</tr>
<tr>
<td>DATd score</td>
<td>24.87</td>
<td>1.890</td>
<td>24.83</td>
<td>1.754</td>
<td>24.89</td>
<td>1.954</td>
<td>0.633†</td>
</tr>
<tr>
<td>PATe score</td>
<td>23.13</td>
<td>2.708</td>
<td>23.66</td>
<td>3.015</td>
<td>22.92</td>
<td>2.566</td>
<td>0.240†</td>
</tr>
</tbody>
</table>

a Standard Deviation
b Under-represented minority
c Grade Point Average
d Dental Admission Test Academic Average
e Perceptual Ability Test
f Fisher’s exact test
† Mann-Whitney U test

The mean in-person interview score was 1.733±0.623 with a median score of 1.592, while the mean score for virtual interview was 2.071±0.732 with a median of 2.040 (Figure 1 and Figure 2).
Figure 1. Distribution of 2021-2022 HSDM Interview Scores by method of Interview (Place, date.)

Figure 2. Average of Combined 2021-2022 HSDM Interview Scores (Place, date.)
On average, after adjusting for applicants’ factors, the virtual interviews were scored 0.246 points poorer than the in-person interviews (Table 2).

Table 2. Comparison of 2021-2022 HSDM Interview Scores between Faculty and Student Interviewers (Place, date.)

<table>
<thead>
<tr>
<th>Format</th>
<th>Overall Average</th>
<th>Faculty Average</th>
<th>Student average</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Crude difference (95%CI)</td>
<td>Adjusted difference (95%CI)</td>
<td>Crude difference (95%CI)</td>
</tr>
<tr>
<td>In-person</td>
<td>Ref.</td>
<td>0.338 (-0.306,0.982)</td>
<td>Ref.</td>
</tr>
<tr>
<td>Virtual</td>
<td>Ref.</td>
<td>-0.091 (-0.721,0.539)</td>
<td>Ref.</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>Ref.</td>
<td>-0.197 (-0.885,0.492)</td>
<td>Ref.</td>
</tr>
<tr>
<td>Female</td>
<td>Ref.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>URM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>Ref.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>-0.197 (-0.885,0.492)</td>
<td>-0.234 (-1.018,0.551)</td>
<td>-0.116 (-0.806,0.573)</td>
</tr>
<tr>
<td>Current residence</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Northeast</td>
<td>Ref.</td>
<td>0.077 (-0.842,0.996)</td>
<td>Ref.</td>
</tr>
<tr>
<td>Midwest</td>
<td>0.122 (-0.619,0.863)</td>
<td>0.249 (-0.552,1.051)</td>
<td>0.121 (-0.617,0.859)</td>
</tr>
<tr>
<td>South</td>
<td>0.110 (-0.791,1.011)</td>
<td>0.166 (-0.780,1.112)</td>
<td>0.069 (-0.823,0.971)</td>
</tr>
<tr>
<td>West</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall GPA</td>
<td>-1.721 (-5.624,2.182)</td>
<td>-1.347 (-5.707,3.013)</td>
<td>-1.851 (-5.740,2.039)</td>
</tr>
<tr>
<td>DAT score</td>
<td>-0.034 (-0.194,0.125)</td>
<td>-0.066 (-0.270,0.138)</td>
<td>-0.051 (-0.208,0.107)</td>
</tr>
<tr>
<td>PAT score</td>
<td>0.018 (-0.093,0.123)</td>
<td>0.033 (-0.103,0.169)</td>
<td>0.012 (-0.097,0.122)</td>
</tr>
</tbody>
</table>

*aAdjusted for all the other variables in the table

*b 95% confidence interval

However, this finding was not statistically significant (95%CI=-0.459,0.950). After stratifying by the type of interview, no statistical difference was found between virtual and in-person interview scores among faculty interviewer scores (mean difference= 0.233; 95%CI= -0.466, 0.931) and student interviewer scores (mean difference= 0.250; 95%CI= -0.463,0.963).

4. Discussion

The aim of this study was to assess whether there was a difference in acceptance rate between applicants who interviewed in-person and those who interviewed virtually. No statistical difference was found between applicants who interviewed virtually and those who interviewed in person. Based on the data analyzed in this study, there appears to be no significant difference in acceptance rate or interview score, which represents the beginning of evidence that virtual interviewing can stand as a viable alternative to in-person interviewing.

Positive aspects of virtual interviewing include ease of scheduling, reduced cost to applicants and admissions...
committees, the chance to interview at more schools, and reduced need for travel. If there is no difference in outcome, then one would expect that many applicants would prefer a virtual interview, given the mentioned advantages. Such may be the case here, where almost three-quarters of those applicants interviewing selected for a virtual interview. However, due to the concern for public and personal safety, the COVID-19 pandemic may have skewed the numbers of applicants selecting for a virtual interview during the specific application period. Nevertheless, virtual interviewing may still stand as a viable alternative to in-person interviewing in the post-pandemic era.

Analysis of the data indicates that the format of interviewing for dental school admissions may carry little effect on the outcome of the application to dental school. This is encouraging, since virtual interviews provide a much more accessible route to applicants who may live at great distance from the school, be economically restricted from traveling, or be restrained from traveling due to health or family status. By implementing virtual interviewing more widely, dental schools may be able to recruit a more diverse population of applicants. (Globe News Wire, 2021; Chen, Karamlou, & Bribriesco, 2022) With a lower barrier to application and interviewing, the door would be open to individuals who would have otherwise found dental school inaccessible. This in turn may be of benefit to dental schools; by offering the option to interview virtually, the applicant pool may be enlarged to include those who may not otherwise apply. The subsequent student body of dental schools can then be enriched by a wider and more diverse array of experiences and backgrounds. With a wider range of applicants to select from, greater efforts can be made to create a class culture of diversity and inclusion.

Notable drawbacks to virtual interviewing remain, such as technical malfunctions, poor internet connection, and environmental distractions, all are common to the virtual interface. (Vallejo et al., 2021) Access to a quiet, private space with a computer and adequate internet connectivity is not always immediately available for all applicants. (Nwora, Allred, & Verduzco-Gutierrez, 2021) If such is the case, the question arises of whether the applicant or school is responsible to ensure access. Since many applicants would be interviewing from their home, personal privacy is another concern that needs to be considered. (Fuchs & Youmans, 2020) With virtual interviewing, unanswered questions and persistent challenges will need to be explored and addressed.

Rekawek, et al discussed the potential for virtual interviewing to bring about a phenomenon which could be termed “interview hoarding,” in which the most highly qualified applicants are enabled to apply to and accept interview invitations from more schools than they would otherwise have been able to interview with. (Rekawek, Graves, Panchal, & Schliefve, 2021) By so doing, more interview slots would be taken by the more qualified applicants, limiting access to interviews for applicants who may not have as desirable academic records or test scores. In addition, this may lead to the more able applicants receiving a greater proportion of acceptance offers, ultimately resulting in schools observing a higher number of declined positions in their prospective class. Dental schools considering virtual interviewing should be aware of such a possibility and take measures to prevent its negative effects, potentially by offering a greater number of interview invitations.

In this analysis, there was no significant difference between faculty and student interviewer rating of the applicants as represented in Table 2. One may suspect that student interviewers, who may be more accustomed to the virtual format after over a year of virtual learning, would be more comfortable with such an interface than their respective faculty counterparts. It appears that such was not the case in this setting. However, care must be taken to ensure that faculty and student interviewers are calibrated correctly when it comes to evaluating applicants in the virtual environment. (Itaya et al., 2022) This may come in the form of standardized questions or specific topics of discussion that should be covered during each interview. (Huppert et al., 2020) Additionally, there was no difference in interview rating between students and faculty when comparing any of the other characteristics such as gender, area of residence, overall GPA, DAT score, or PAT score. This suggests that relative to these other characteristics, virtual interviewing was calibrated well between student and faculty interviewers in this particular evaluation.

The sample used for this study represents a small number of applicants to one school from a single application cycle. Our ability to extrapolate and apply findings to other populations is limited due to the small size of this data set. Although the analysis indicates that there is not a statistically significant difference between the two cohorts, there appears to be some tendency toward a higher acceptance rate and stronger interview score from the in-person interview group. Figure 1, for example, represents the distribution of interview scores based on method of interview. It shows a tendency toward a higher rate of positive interview scores among the in-person cohort. Likewise, Figure 2 shows a trend towards more favorable interview scores within the same cohort when viewed in average. Abdlrasul et al found that the virtual (albeit asynchronous) interviews in their sample of pharmacy school applicants scored significantly lower than the in-person, synchronous group. (Abdlrasul et al., 2022) While the findings of our analysis may not show any such statistical difference in interview score, they may indicate a need for further analysis to determine whether there is an appreciable difference between the two interview formats.
As this topic is studied further, the question remains as to whether or not schools should offer virtual interviews to applicants. To minimize unfair advantages to applicants interviewing in person, dental schools may consider standardizing their interview format to either virtual or in person. If a school opts for a hybrid approach in which both interview formats are offered to applicants, care should be taken to prevent interview format from introducing bias into the interview process. This could be mitigated by standardizing the format as much as possible. One potential option would be to designate each interview date as either in-person or virtual. Alternatively, interviewers could be randomly assigned to virtual or in-person format for the duration of the application cycle. These and other measures can be taken to offer the greatest latitude to applicants while minimizing any harmful effects interview format may have on their potential acceptance into dental school. Additionally, it is important to consider the applicants’ preference whether visiting the dental school and observing the community in-person would be an essential part of their decision making process.

In order to better assess the relationship between interview format and acceptance rate, larger samples need to be used. One possibility is pooling of interview and acceptance data across multiple schools. Another method would be to study their relationship from one school across multiple years. The ability to apply these findings to future application cycles and other dental schools is limited at the current time. However, the recent application cycles, which included virtual interviews across the majority of dental schools, represent a reservoir of data that could further illuminate any notable differences between in-person and virtual interviewing.

5. Conclusion

As the world continues to recover from the COVID-19 pandemic, the urgent need for dental schools to depend on virtual interviewing will fade. However, with the widespread use of virtual interviewing in recent memory, this resource should be utilized rather than set aside. It meets the needs of a specific population of applicants who may otherwise have found dental school education inaccessible. Beyond this specific group, it provides benefits generally, such as ease of scheduling, reduced cost, and less travel.

Continued investigation is needed due to the small sample size of this data set, however. If the findings of this study are confirmed with larger sample sizes, virtual interviewing can be utilized without risk to an applicant’s acceptance into dental school and to the benefit of both dental school and applicant.

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Authors contributions

Dr. Fullmer and Dr. Katebi were responsible for study design. Dr. Park provided the data for analysis. Dr. Aldosari performed the analysis. Dr. Fullmer drafted the manuscript and Dr. Park revised it. All authors read and approved the final manuscript.

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Obtained.

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Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Data sharing statement

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References


