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Effect of Asynchronous Virtual Interviews on Ethnic Minority Matriculation into a Doctor of Physical Therapy Program

Conner Clark
University of Nevada, Las Vegas

Nanea Lagasca
University of Nevada, Las Vegas

Gladys Miller
University of Nevada, Las Vegas

Jasmine Puspos
University of Nevada, Las Vegas

EFFECT OF ASYNCHRONOUS VIRTUAL INTERVIEWS ON ETHNIC MINORITY MATRICULATION INTO A DOCTOR OF PHYSICAL THERAPY PROGRAM

By

Conner Clark
Nanea Lagasca
Gladys Miller
Jasmine Puspos

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This doctoral project prepared by

Conner Clark

Nanea Lagasca

Gladys Miller

Jasmine Puspos

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Daniel Young, Ph.D.
Examination Committee Chair

Daniel Young, Ph.D.
Research Project Advisor

Merrill Landers, Ph.D.
Chair, Department of Physical Therapy

Alyssa Crittenden, Ph.D.
Vice Provost for Graduate Education & Dean of the Graduate College

ABSTRACT

Purpose/Methods: This study examines the impact of the use of asynchronous virtual interviews (AVIs) in the admissions process of the Doctor of Physical Therapy (DPT) program at the University of Nevada, Las Vegas (UNLV). This research aims to examine racial and ethnic subgroup differences in AVI scores, evaluate the influence of AVIs on applicant scores in the admissions process, and assess the AVI inter-rater reliability among faculty evaluators using data from the 2019-2022 admissions cycles.

Results: Significant differences were found in AVI scores among racial and ethnic groups, with Black applicants scoring highest and Asian applicants scoring lowest. Additionally, inclusion of AVIs had a significant impact on pre-interview and final applicant scores. Black applicants were the only group that saw an increase in overall score with inclusion of AVIs. Inter-rater reliability among faculty evaluators was poor, highlighting the need for further exploration of the process used by evaluators when grading AVIs. The study underscores the potential of AVIs to enhance diversity by providing underrepresented minorities with an opportunity to showcase additional skills and emphasizes the importance of addressing reliability issues to ensure fair evaluation of all applicants.

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1. INTRODUCTION

The U.S. population is increasingly more diverse and multiracial according to the 2020 census.[1] Between 2010-2020, the number of individuals who identified as more than one race increased by 276% while those who identified as White alone declined by 8.6%.[1] Minorities are underrepresented among US healthcare professionals and students in healthcare professions despite the growing diversity of the population.[2] A 2019 study showed widespread underrepresentation of minorities across ten health professions in the US.[2] Of these professions, physical therapy ranked lowest in representation of both Black (3.3%) and Hispanic (3.3%) clinicians.[2] This is concerning considering that patients who receive care from providers of their own race/ethnicity have been shown to benefit from improved communication with their provider, adherence to care, and overall health outcomes.[3,4] Furthermore, non-White physicians are significantly more likely to provide care for disadvantaged patients including minorities, Medicaid recipients, and non-English speakers.[5] Improving the diversity of the healthcare workforce may reduce health disparities by contributing to a more equitable allocation of health services to disadvantaged groups. Given the established benefits of diversity in healthcare, the increasing racial heterogeneity of the populace, and the underrepresentation of minorities in health professions, the cultivation of racial diversity among health professionals is paramount to the provision of patient-centered healthcare.

Graduate admissions committees have significant influence on the selection of future healthcare providers.[6] Minorities are underrepresented among applicants admitted to Doctor of Physical Therapy (DPT) programs. In 2019, Hispanic/Latinos accounted for 18.5% of the U.S.

population,[7] 11.5% of total DPT applicants,[8] and only 9.5% of admitted applicants.[8] Similarly, Black Americans comprised 12.4% of the US population,[7] 6.7% of DPT applicants,[8] and 4.0% of admitted applicants.[8] In recognition of these disparities, the American Council of Academic Physical Therapy called for an expansion of the holistic review of applicants with the core aim of increasing the diversity of admitted applicants.[9] Holistic review is a broadly-defined term used to describe admissions strategies aimed at comprehensive evaluation of applicants beyond traditional measures of academic performance.[9] This approach considers applicant experiences, attributes, academics, and potential value to the school and profession.[10] In a 2014 survey by the National Institutes of Health, 67% of professional health schools reported the implementation of holistic review into their admissions processes.[11] Minority enrollment increased in 81% of these programs relative to previous years, with no significant reduction in the academic quality of admitted applicants.[11] Furthermore, most schools reported improvement or no change in the academic performance of students admitted under holistic review.[11] This evidence suggests that holistic review may improve diversity of admitted applicants without compromising academic standards.

As a part of the broader shift toward holistic admissions, many graduate programs have implemented asynchronous virtual interviews (AVIs) into their application process. These web-based interviews enable admissions committees to score applicants based on recorded video responses to a structured set of interview questions.[12] Asynchronous interviews are designed to promote consistency and fair decision-making in graduate admissions by enabling multi-evaluator scoring of applicants based on predefined criteria.[12] Applicant interviews are conventionally assessed in a vertical manner, where each evaluator scores a small subset of

applicants on all criteria of interest.[13] Vertical review is susceptible to rater biases such as the 'halo effect', where an evaluator's overall impression of an applicant is disproportionally influenced by a single attribute. To mitigate this bias, asynchronous interview platforms enable horizontal review, where each evaluator scores a larger subset of applicants on some, but not all, criteria of interest.[14] This increases the number of evaluators assigned to each candidate and distributes the influence of individual rater biases on the overall interview score. Ultimately, virtual interviews aim to facilitate improved inter-rater reliability, or the degree of consensus among independent evaluators when assessing the same construct.[15] Strong inter-rater-reliability is important to the fair evaluation of applicants. The use of one-way virtual interviews in the selection of health professionals has been well-documented in the field of emergency medicine.[16] In 2017, the Association of American Medical Colleges (AAMC) partnered with the emergency medicine community to implement Standardized Virtual Interviews (SVIs) into the residency application.[17] The SVI is a six-question asynchronous interview designed to provide selection committees with additional insights into applicant professionalism and interpersonal communication skills. Initial data from the 2017 pilot revealed a weak correlation between SVI score and letter of recommendation score, and no correlation between SVI score and performance on the United States Medical License Examination (USMLE) Step 1,[17] a standardized assessment required of second-year medical students. The AAMC cited this lack of correlation as evidence for the validity of SVI scores as a measure of behavioral competencies outside the scope of traditional metrics.[18] However, a commentary published in early 2018 expressed skepticism toward this claim, calling into question the correlation between SVI scores and the competencies they intended to measure.[19]

Subsequent research affirmed these doubts, showing weak to nonexistent correlations between SVI scores and applicant ranking (r=0.12),[20] faculty-ratings of communication and professionalism (r=0.09),[16,21] standardized letters of recommendation (r=0.20),[22] and traditional interview performance (r=0.13).[23] A 2019 study found SVI score to impact the likelihood of being offered a follow-up interview in only 7% of applicants.[24] Within this subset, the negative impact of low SVI scores was greater than the positive impact of high SVI scores.[24] In other words, the inclusion of SVI scores hindered low-scoring applicants more significantly than it benefitted high-scoring applicants. Additionally, SVIs were not well-received by applicants, with surveys revealing an overall negative perception of the process.[25] Only 20% of applicants agreed they were able to demonstrate the competencies of interest using the SVI.[26] A 2019 open letter from emergency medicine stakeholders urged the AAMC to withdraw SVIs from the residency application due to concerns over lack of evidence, costs, and applicant perceptions.[27] While the AAMC continued to assert that SVIs were a reliable and valid assessment tool, they conceded to the request and discontinued the pilot in 2020.[28]

The implementation of asynchronous interviews in health professional selection, particularly in emergency medicine, has led to concerns about their reliability in measuring applicant qualities. The disproportionate impact of low SVI scores on follow-up likelihood is a notable finding. In principle, asynchronous interviews would allow traditionally less-competitive applicants to improve their standing by demonstrating strength in other skills, but the limited available evidence suggests this may not be the case. Further research is needed to evaluate the influence of asynchronous interview scores on outcomes for various applicant subgroups.

The University of Nevada, Las Vegas (UNLV) aims to cultivate a more diverse student body in an effort to improve student lives and transform communities.[29] To accomplish this, the UNLV Graduate College changed their admissions process to be more holistic across 150 graduate programs in 2014.[30] The UNLV Doctor of Physical Therapy program (UNLVPT) also made changes to advance the program's mission of "enhancing human health through education, scholarly, activity, and community service".[31] This aligns with the Quadruple Aim, an initiative to optimize healthcare by enhancing patient and provider experiences while improving outcomes and lowering costs.[32] In 2018, UNLVPT began using asynchronous video interviews to assess grit, professionalism, and cultural sensitivity in prospective students.[30] This was done to enhance diversity by recognizing applicants who exhibited these attributes, which are aligned with the program's core values, including respect for the dignity and diversity of all individuals. Culturally competent clinicians work successfully with individuals from various backgrounds to optimally care for diverse populations.[33] Diversity in graduate cohorts facilitates improved cultural competence by providing opportunities for collaboration between students of different experiences, upbringings, and racial and ethnic origin.[34] Therefore, enhancing the diversity of admitted Doctor of Physical Therapy (DPT) students may facilitate improvements in culturally sensitive care.

Asynchronous interviews are highly customizable, variable across programs, and lack a universal standardized format.[35] The primary focus of this research is the program-specific design and scoring of asynchronous virtual interviews at UNLVPT. Evaluation of the consistency among UNLVPT evaluators in scoring asynchronous virtual interviews is necessary to weigh the potential benefits of modifying the current design of the admissions process. In the push

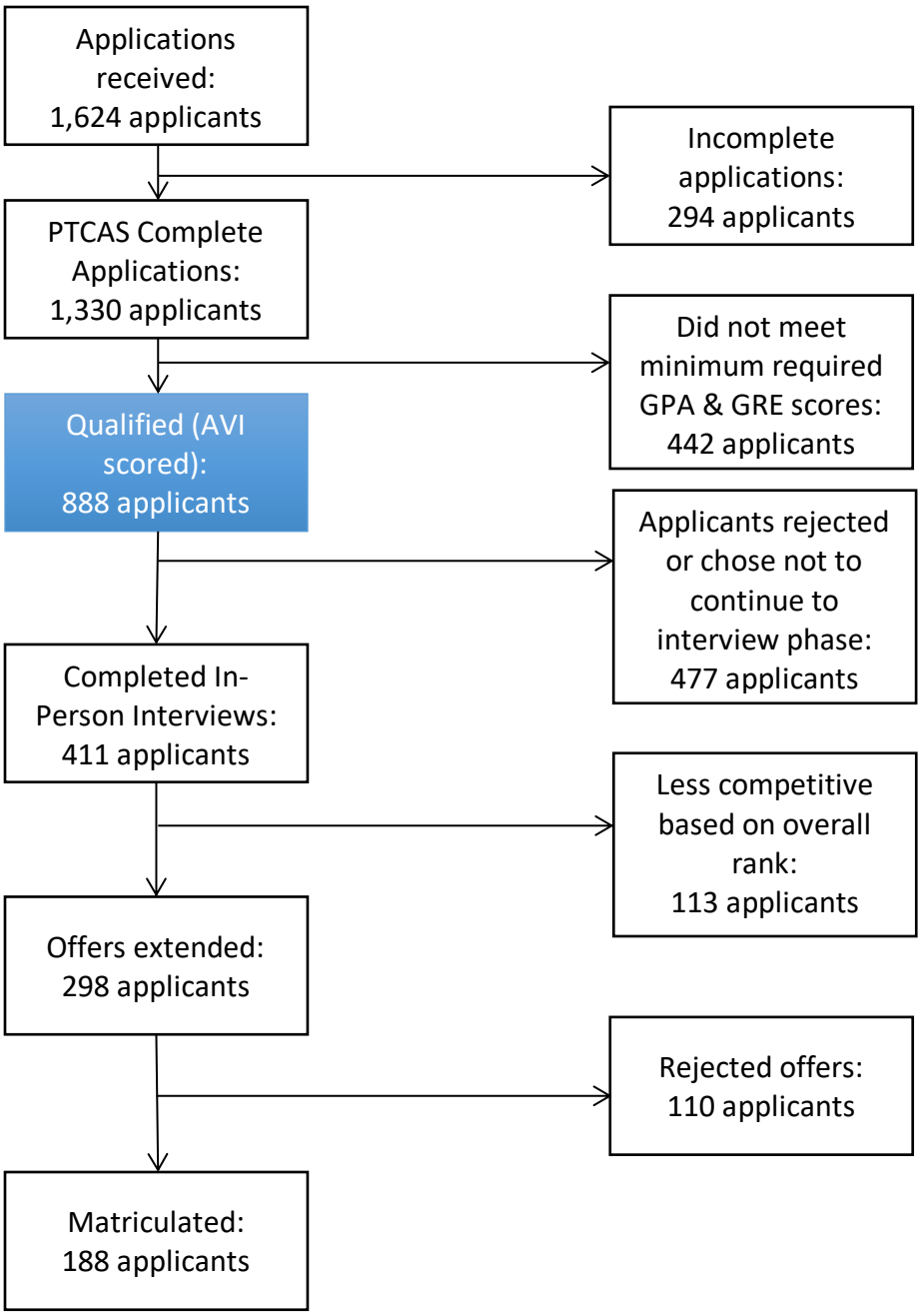
toward the use of novel assessment tools to advance holistic review, awareness of the current merits and limitations of asynchronous interviews is imperative to balanced decision-making. The critical evaluation of the validity and inter-rater reliability of faculty-scored asynchronous virtual interviews is warranted to determine the appropriate weight and use of this metric within the holistic review of UNLV DPT applicants.

The purpose of the study was to evaluate the influence and reliability of asynchronous interviews on the diversity of students matriculating into UNLVPT. Racial and ethnic subgroup differences in virtual interview score distributions were assessed. Additionally, applicant overall scores were compared with and without consideration of virtual interview score, to estimate the impact of virtual interview inclusion on applicant standing within various groups. The inter-rater reliability of virtual interview evaluators was examined to assess the consistency and agreement of the multi-rater scoring system.

2. METHODS

Based on the University's admissions process outlined in Figure 1, applicants who submitted a complete application to the UNLVPT program through the Physical Therapist Centralized Application Services (PTCAS) and met the minimum requirements for UNLVPT program are considered for matriculation. The minimum requirements include a bachelor's degree, pre-requisite coursework, overall undergraduate GPA of at least 3.0, GRE (no minimum), three letters of recommendation, and 100 observation hours. Applicants who met these requirements completed a virtual interview, which was then scored by UNLVPT faculty per the program's standard admissions procedures. This study examined UNLVPT applicant data from the 2019-2022 admissions cycle, with focus on qualified applicants who completed a virtual interview, in-person interview, or both.

Figure 1: Flow of applications in the UNLV DPT Admissions process for admissions cycles 2019 - 2022. The blue box indicates the applicant pool analyzed as part of this study. AVI = asynchronous virtual interview; GPA = grade point average; GRE = graduate record examinations.



Data Extraction

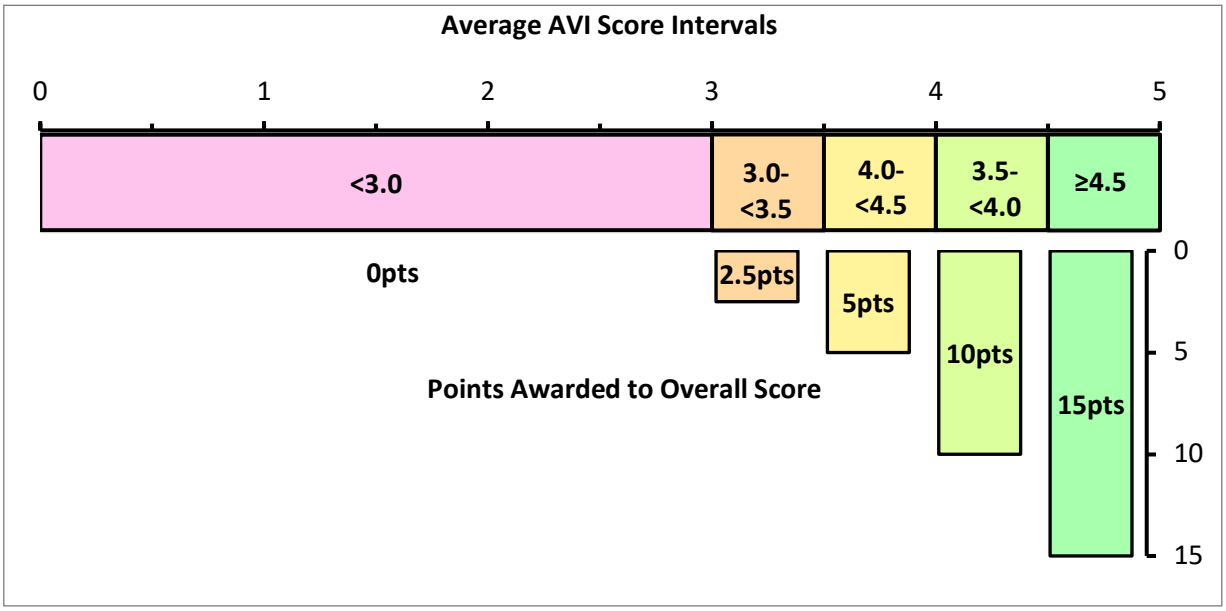
Applicant data were accessed and retrieved from PTCAS and the UNLVPT admissions records for the 2019-2022 admissions cycles. The applicant data was originally collected by UNLVPT for the purpose of their admissions process and used as part of this study as a

secondary purpose. The de-identified data was provided to the research team to be analyzed retrospectively for the purpose of this study.

Design and Analysis

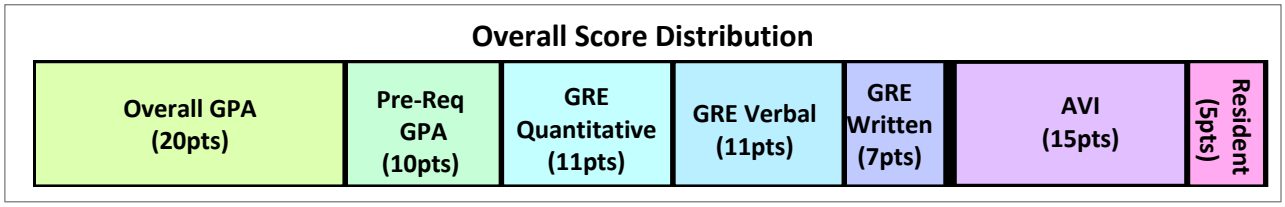
The UNLV admissions process involves evaluation of AVIs to assess the following applicant traits: grit, professionalism, and cultural sensitivity. Grit is passion and perseverance toward long-term goals, with persistent effort despite failure, adversity, and plateaus in progress.[36] Professionalism is conduct aligned with the values of a physical therapist, including accountability, compassion, integrity, excellence, and social responsibility.[37] Cultural sensitivity is the ability to respond appropriately to the attitudes, feelings, and circumstances of individuals from diverse cultural backgrounds.[38] Two independent evaluators reviewed each applicants' AVI and assigned individual scores to the three traits of interest on a 1-5 ordinal scale (1= poor, 2= fair, 3= good, 4= great, 5= exceptional). The mean of these scores was calculated to determine the average AVI score for each applicant. These averaged AVI scores were categorized into distinct score intervals based on predetermined score cut-offs. Points were then awarded to each applicant's overall score based on their respective intervals using a 15-point scale (Figure 2). To emphasize, average AVI score is the mean of both scores, 1-5, assigned to each applicants' AVI by their respective faculty evaluators. Conversely, 'points-awarded' is a set point-value, 0-15, added to each applicants' overall score, based on the interval their average AVI score falls into. Therefore, average AVI score represents raw scores showing differences in grading on a 5-point ordinal scale, while the points awarded is more related to the protocol used to allocate points to overall score and reflects the tangible weight of AVIs within the admissions formula.

Figure 2: Points allocated to overall score based on average AVI score intervals.



Applicant overall scores (Figure 3) were comprised of points awarded for AVI score (15 points), Graduate Record Examination (GRE) scores (29 points), grade point average (GPA) (30 points), and in-state residency status (5 points). The maximum overall score was 79 points prior to invitation for in-person interviews. Applicants were ranked using this pre-interview score, and applicants who ranked favorably were invited for an on-campus interview. The in-person interview, worth a maximum of 40 points, was scored by two interviewers from a pool of faculty members and community clinicians.

Figure 3: Composition of overall score prior to invitation for follow-up interview.



Descriptive statistics were used to analyze variability in AVI scores among the racial and ethnic groups. A one-way ANOVA was used to compare the mean AVI score among the different racial and ethnic groups. A repeated measures 2x6 ANOVA was used to compare applicant total scores among the 6 different racial and ethnic minority groups with and without AVI points as the repeated factor. A p-value threshold of .05 was used to determine significance, and post hoc analysis was performed using Bonferroni adjusted significance levels. Applicant overall scores were calculated with exclusion of points awarded for AVI to estimate change in scores resulting from the inclusion of AVIs. These scores, with and without points awarded for AVI, were normalized for comparison by dividing each score by its maximum value. F-statistics were used to determine the main effects of AVI score and race/ethnicity on pre-interview score, as well as the interaction between AVI score and race/ethnicity. Intraclass correlation coefficients and corresponding 95% confidence intervals were calculated based on a mean-rating (k = 2), absolute-agreement, 2-way random effects model. All statistics were performed using SPSS statistical package version 28 (SPSS Inc, Armonk, NY).

3. RESULTS

A total of 888 applicants from the 2019-2022 admissions cycle completed an AVI. Applicants identified as White (n=474, 53.4%), Asian (n=198, 22.3%), Hispanic (n=46, 5.18%), Black (n=17, 1.91%), Multi-racial (n=137, 15.43%), and Did not report (n=15, 1.69%). The variances of AVI scores among racial and ethnic groups were not significantly different ($p = 0.584$), according to Levene's test of homogeneity.

The mean virtual interview score across all applicants was 3.30 out of 5 possible points. Mean scores by racial/ethnic group were as follows: White (3.34), Asian (3.19), Hispanic (3.27), Black (3.75), Multi-racial (3.28), Did not report (3.24). Black applicants scored 0.45 pts above the mean, and significantly higher than all other groups (95% CI [3.26, 3.34], mean = 3.30, $p = 0.004$). White applicants scored significantly higher than Asian ($p=0.017$) and Multi-racial ($p=0.005$) groups. Scores are graphically represented in Figures 4a-b.

Figure 4a: Distribution of applicant AVI scores within each racial/ethnic subgroup.

Figure 4b: Average change in applicant overall score when AVI score was considered.

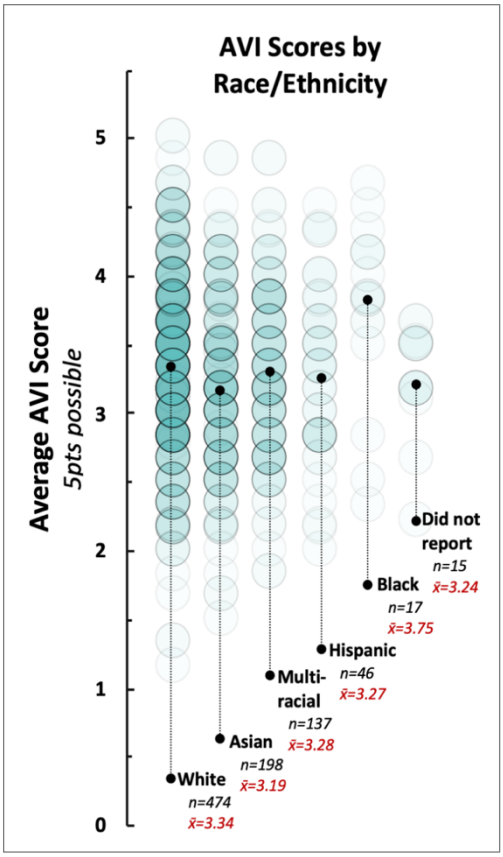


Figure 5a: Point distribution for overall score with and without AVI included.

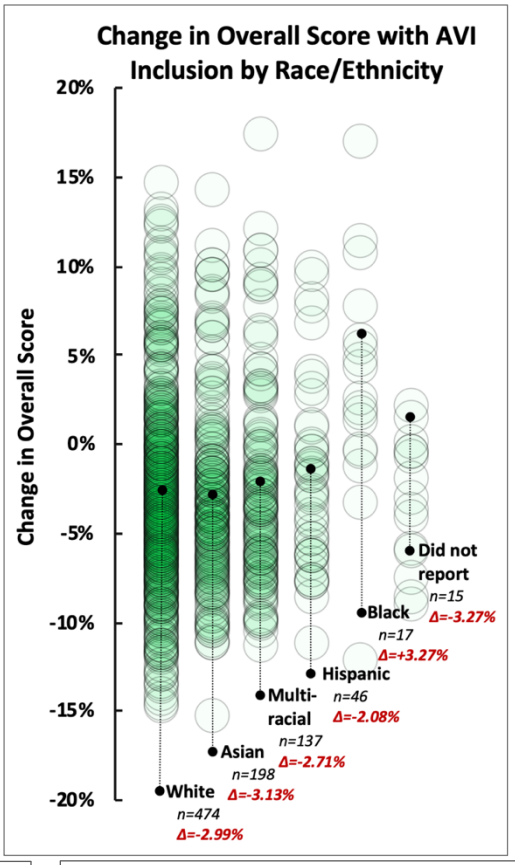
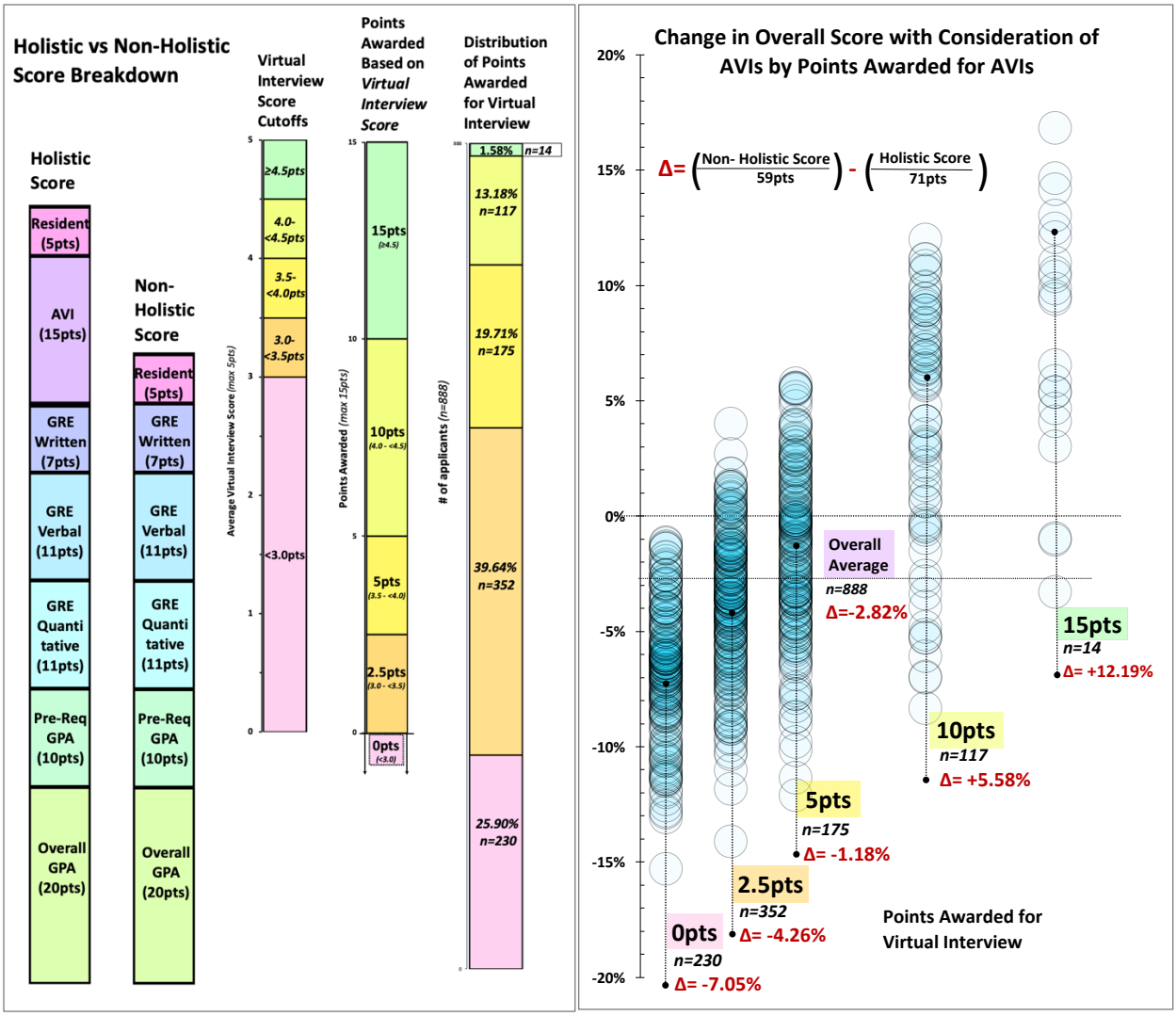


Figure 5d: Distribution of applicant change in overall score with AVI consideration, organized by points awarded.

Figure 5b:2 Applicant groupings based on interview score and corresponding points

Figure 5c: Proportion of applicants within each tier of points awarded.



The distribution of change in overall scores by 'points awarded' is shown in Figure 5a-d. Most applicants were awarded 5 points or less and experienced a reduction in relative overall score with AVI included. Change in applicant proportional scores were between +17.28% and -15.32%, and only applicants who received 10 and 15 points on the virtual interview experienced an increase in overall score. This suggests that while a small group of applicants may substantially benefit from AVI consideration, most applicants will experience a decline or minimal change in overall score.

The small American Indian subgroup with only one applicant could not be included as a distinct group. The change in applicant score with inclusion of virtual interviews was calculated as the difference between 'holistic score' (GPA+GRE+AVI /79pts) and 'non-holistic score' (GPA+GRE/64pts). A significant change in applicant overall scores was observed when AVI scores were taken into account ($F = 23.613$, $p = <0.001$). The average change in overall score by racial/ethnic subgroup was as follows: White (-2.99%), Asian (-3.13%), Hispanic (-2.08%), Black (+3.27%), Multi-racial (-2.71%), and Did not report (-3.27%). The observed variation between subgroups was statistically significant ($F = 5.245$, $p = <0.001$). Figures 6a-c provide graphical representations of the change in mean proportional score for each of the six groups of interest and their respective effect sizes.

Figure 6a: Average pre-interview proportional score for each of the 6 racial/ethnic groupings in the pre-interview phase. These scores are used to determine who will move forward to the on-campus interview. There was a significant increase in average proportional score noted for the Black applicant group with the addition of AVI scores ($p = <0.001$).

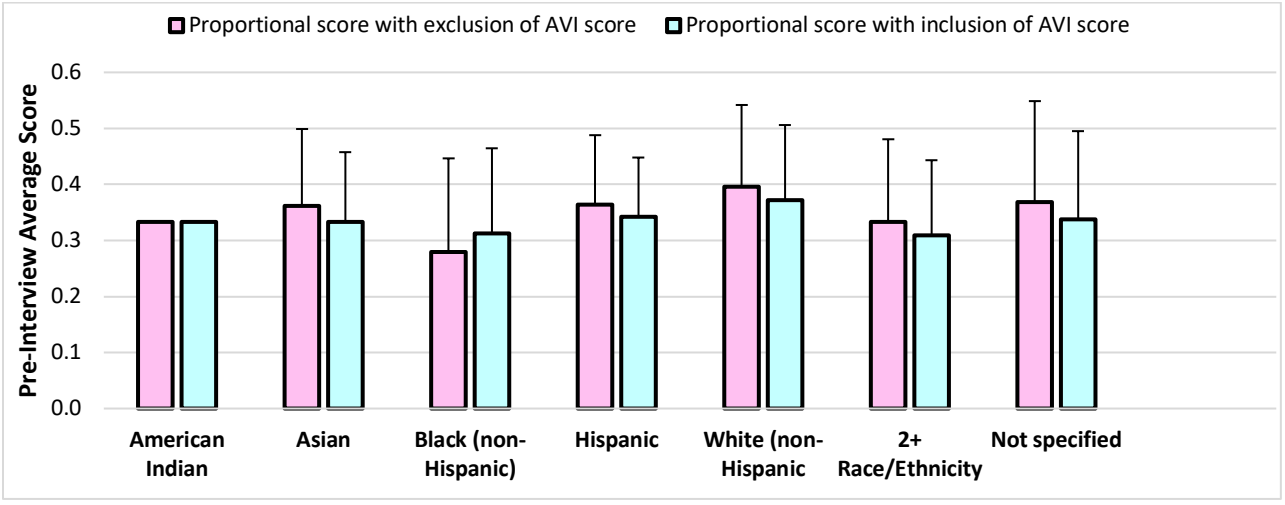


Figure 6b: Percent change in overall score with AVI inclusion by applicant race/ethnicity. A simplified representation of the same data shown in figure 6a.

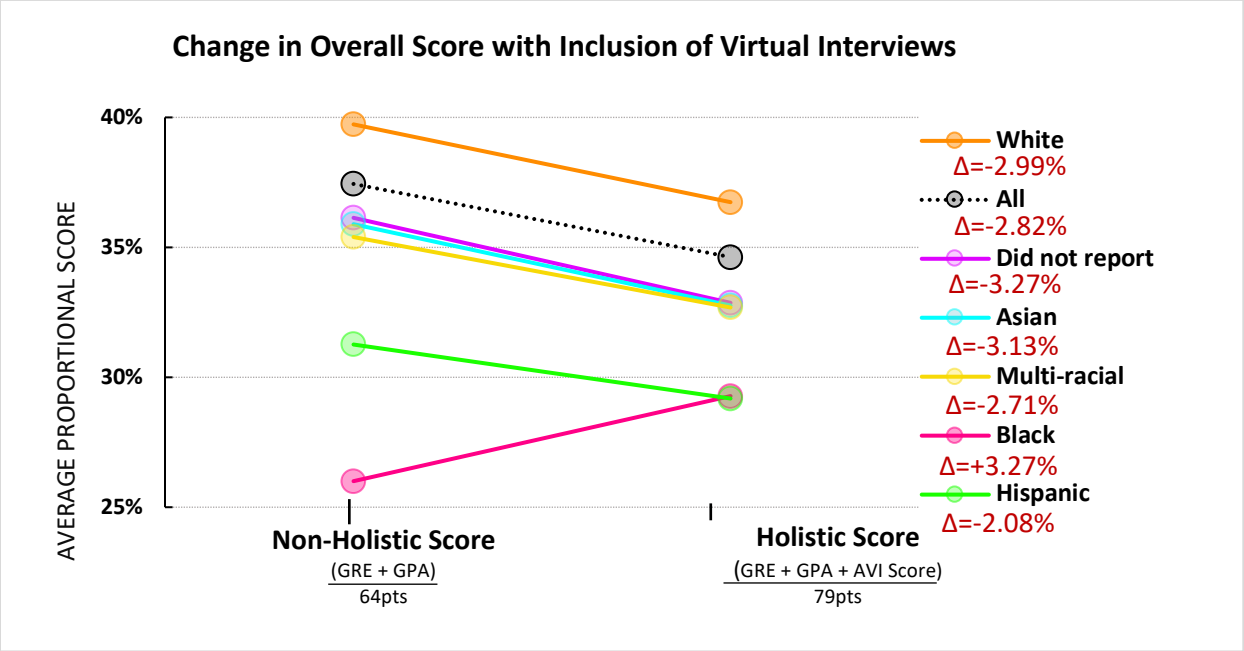
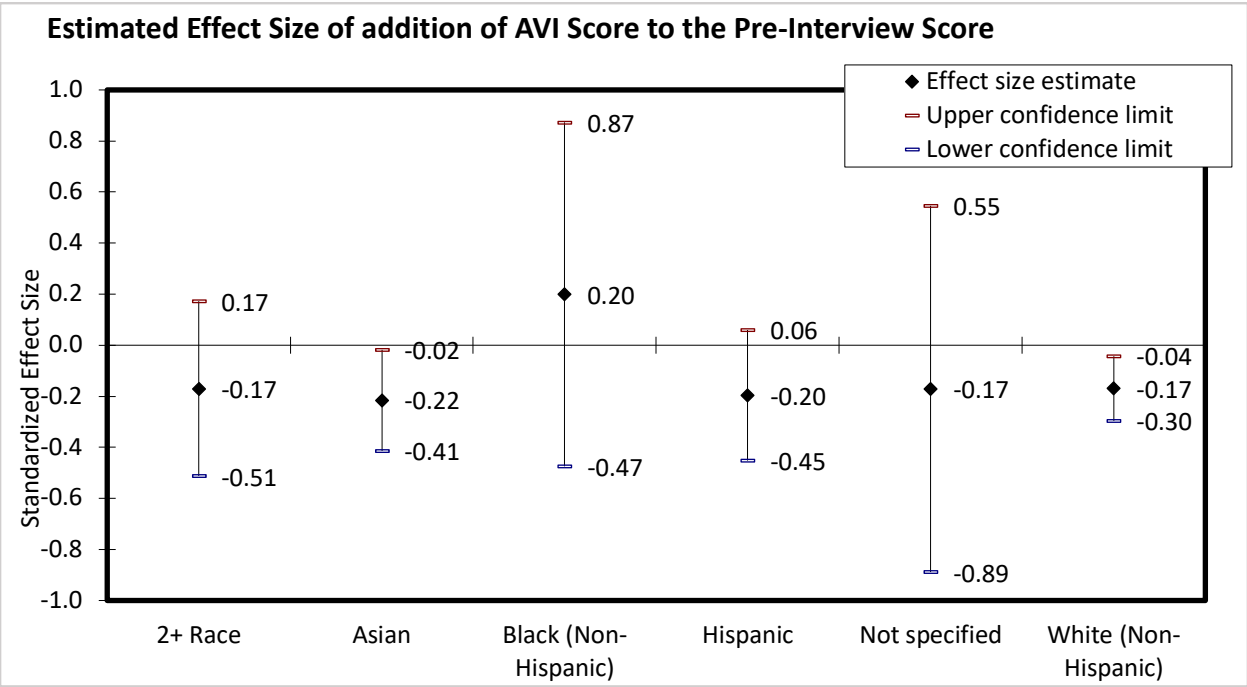
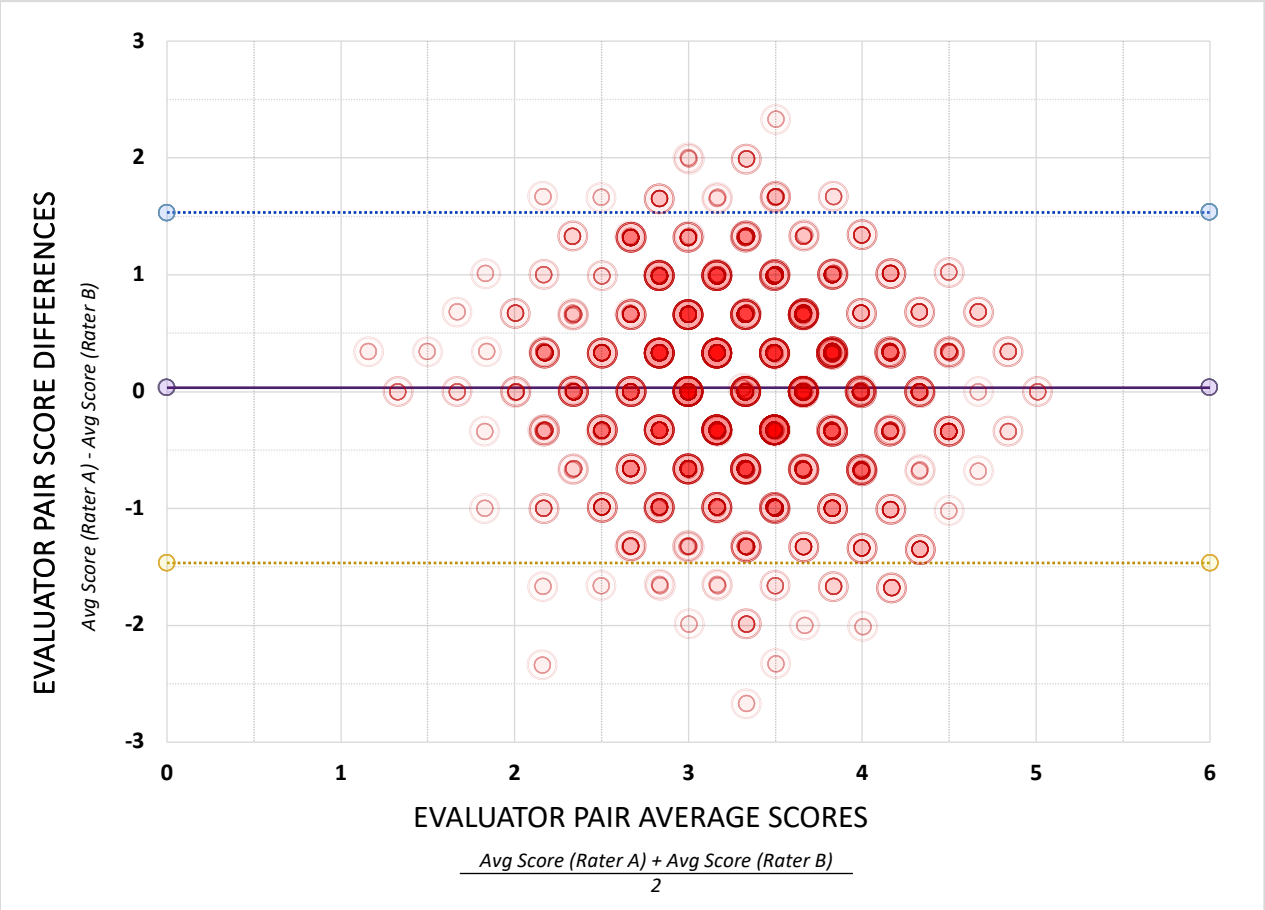


Figure 6c: Effect size of inclusion of AVI scores to the applicant Pre-Interview Score. Hedges bias corrected standardized mean difference (SMD) for the six racial/ethnic groups was used. Although effect sizes are small, some groups present with large confidence intervals, specifically the Black (Non-Hispanic) and the Not specified group.



The Bland-Altman plot (Figure 7) shows the relationship between average scores assigned by evaluator pairs and their corresponding score differences. The x-axis, or zero-difference line, indicates perfect agreement, and dispersion of points above and below this line reflect the magnitude and direction of agreement. Although small average score differences were observed between evaluators, the overall inter-rater reliability was found to be poor ($ICC_{2,2}$ = 0.425 (0.370, 0.478)).

Figure 7: Bland-Altman plot of differences between raters in interview scores vs. averages of the two interview scores. The plot shows ambiguity, with wide limits of agreement. However, mean difference in scores is close to zero at 0.034 (-1.47, 1.53).



The average score given by individual evaluators for each competency is shown in Figure 8. Notable differences exist in the score patterns of different raters for each cycle. The average score by each evaluator also varies across application cycles. The average scores of some raters appear to increase over time (Rater 6), while those of others seem to gradually decline (Rater 10). The observed year-to-year variability scoring of virtual interviews may be partially related to the introduction of a standardized rubric in 2021 to provide structured criteria for AVI scoring.

Figure 8: Heat map of average interview score given by each rater to their assigned applicants for the 2019 – 2022 application cycles.

	Average Asynchronous Interview Scores by Rater															
	Rater	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
2019	***n***	*46*	*34*	*35*	*33*	*0*	*66*	*36*	*0*	*32*	*0*	*0*	*42*	*36*	*47*	*0*
	Grit	3.04	3.12	4.11	3.12	-	3.33	3.72	-	3.63	-	-	2.74	3.28	3.36	-
	Cultural Sensitivity	3.24	3.24	4.14	3.39	-	3.32	3.81	-	3.38	-	-	2.83	3.36	3.30	-
	Professionalism	3.30	3.50	4.37	3.06	-	3.39	3.83	-	3.59	-	-	2.76	3.42	3.17	-
	Overall	3.19	3.28	4.21	3.19	-	3.35	3.78	-	3.53	-	-	2.78	3.35	3.28	-
2020	***n***	*31*	*22*	*23*	*21*	*0*	*234*	*23*	*3*	*24*	*31*	*0*	*20*	*24*	*22*	*0*
	Grit	2.65	3.27	2.91	3.00	-	3.31	3.22	3.00	3.17	3.58	-	2.75	2.92	2.77	-
	Cultural Sensitivity	2.65	3.09	2.96	3.05	-	3.33	3.26	3.00	3.13	3.48	-	2.60	3.17	3.14	-
	Professionalism	2.81	3.18	3.00	3.33	-	3.46	3.35	3.00	3.29	3.45	-	2.75	3.13	2.86	-
	Overall	2.70	3.18	2.96	3.13	-	3.36	3.28	3.00	3.19	3.50	-	2.70	3.07	2.93	-
2021	***n***	*32*	*24*	*26*	*27*	*0*	*49*	*1*	*27*	*28*	*32*	*0*	*18*	*26*	*61*	*99*
	Grit	3.00	2.88	3.46	3.07	-	3.29	4.00	3.63	3.43	3.56	-	3.28	3.00	3.16	3.08
	Cultural Sensitivity	3.00	3.17	3.58	3.52	-	3.47	3.00	3.26	3.57	3.63	-	3.39	3.69	3.33	3.13
	Professionalism	3.13	3.08	3.65	3.41	-	3.43	3.00	3.30	3.75	3.47	-	3.17	3.35	3.20	3.06
	Overall	3.04	3.05	3.56	3.33	-	3.39	3.33	3.39	3.58	3.55	-	3.28	3.34	3.23	3.09
2022	***n***	*36*	*27*	*25*	*23*	*33*	*34*	*25*	*25*	*32*	*25*	*25*	*0*	*26*	*25*	*85*
	Grit	2.94	3.22	3.52	3.48	4.33	3.44	3.40	2.92	3.38	3.20	2.68	-	2.88	3.00	3.35
	Cultural Sensitivity	3.25	3.22	3.60	3.57	4.18	3.53	3.48	3.24	3.22	3.52	2.88	-	3.23	3.08	3.33
	Professionalism	3.19	3.22	3.48	3.48	4.12	3.38	4.08	3.12	3.31	3.40	2.92	-	3.54	2.84	3.41
	Overall	3.13	3.22	3.53	3.50	4.21	3.45	3.65	3.09	3.30	3.37	2.83	-	3.22	2.97	3.36
Overall	***n***	*145*	*107*	*109*	*104*	*33*	*383*	*85*	*55*	*116*	*88*	*25*	*80*	*112*	*155*	*184*
	Grit	2.92	3.12	3.57	3.16	4.33	3.32	3.49	3.27	3.41	3.47	2.68	2.86	3.04	3.14	3.21
	Cultural Sensitivity	3.06	3.19	3.63	3.39	4.18	3.36	3.55	3.24	3.33	3.55	2.88	2.90	3.37	3.25	3.22
	Professionalism	3.13	3.27	3.71	3.30	4.12	3.44	3.76	3.20	3.49	3.44	2.92	2.85	3.37	3.08	3.22
	Overall	3.04	3.20	3.64	3.28	4.21	3.37	3.60	3.24	3.41	3.48	2.83	2.87	3.26	3.16	3.22

4. DISCUSSION

The significant differences in AVI score by racial/ethnic group suggest these interviews may allow underrepresented applicants the opportunity to demonstrate the presence or absence of non-academic qualities that would not have previously been evaluated. This may allow programs to consider a wider range of applicants by providing those with lower GPA/GRE scores a chance to stand out and improve their odds of receiving a follow-up interview. While Black applicants scored significantly higher than all other groups, the small sample size (n=14) limits the generalizability of these findings. Only one Black applicant received the maximum 15pts available for the AVI.

The change in overall score with inclusion AVIs reflects the tangible impact of these interviews on applicant standing. Only applicants with an average AVI score ≥4/5 experienced a relative improvement in overall score. These applicants accounted for only 14.75% of the applicant pool. Therefore, the scoring scale used to award points for AVIs sets a high standard for applicant performance. This may serve to elevate only the most outstanding applicants, while filtering-out those with moderate to poor performance. This may prioritize invitations for applicants who are likely to perform well on the in-person interview, allowing consideration of applicants across a broader range of academic metrics.

The protocol used to award points for each component of the initial application (GRE, GPA, AVI) followed similar procedures. Scores above a minimum threshold (≥3.0 GPA, ≥ 50th percentile GRE, >3/5 AVI) were grouped into discrete intervals, and points were awarded to applicants' overall scores based on these groupings. However, the protocol for AVI scores used

broader, less-numerous intervals to categorize applicants and award points than those for GPA and GRE. GPA ranging from 3.0 - 4.0 was divided into ten, 0.1pt intervals. GRE scores ranging from the 50^{th} to 100^{th} percentile were divided into ten, 5-percentile intervals. AVI scores ranging from 3.0 - 5.0 were divided into four, 0.5pt intervals. Therefore, these scales were sensitive to 2.5% differences in GPA, 5% differences in GRE percentile, and 10% differences in AVI score. The broader and fewer intervals used in the AVI score scale corresponds to a more limited set of point-values available to be awarded to the overall score (0pts, 2.5pts, 5pts, 10pts, 15pts). The substantially different point-values awarded to each interval amplify distinctions between applicants based on AVI performance. In essence, the AVI protocol initially standardizes applicants into broad score intervals, which may mask subtle differences in AVI performance. It then assigns substantially varied point values to applicants in each interval, which may amplify differences between groups. However, the precision with which these differences reflect true variation in AVI performance is questionable. For example, AVI scores of 3.83 and 4.0 were awarded 5 and 10 pts respectively, thus as small as a 4.25% change in AVI score can correspond a 100% increase in points awarded. Therefore, the potential masking of subtle differences in AVI performance using broad intervals, and amplification of between-group differences using a limited and dispersed set of point-awarded, are both of concern. Further research is necessary to evaluate the accuracy and fairness of this scoring protocol to improve the degree to which points awarded for AVIs reflect true differences in applicant qualities.

Poor inter-rater reliability was observed between faculty ratings of AVIs despite a small mean difference in average score. The small mean difference is likely due to evaluator tendency

to assign points within a narrow range. Scores of 3/5 and 4/5 accounted for 73% of all scores assigned to individual applicant traits. Poor inter-rater reliability suggests that the level of agreement diminishes as evaluator scores get further from the mean. One anticipated advantage of AVIs was to improve inter-rater agreement through horizontal review of applicants. Inter-rater reliability of AVIs has previously been examined in Canadian physiotherapy admissions.[39] Horizontal review, with more evaluators scoring fewer criteria of interest, showed significantly greater (p=0.16) inter-rater reliability (ICC=0.74, 95% CI: 0.70-0.77) than vertical review (ICC=0.62, 95% CI: 0.56-0.67) with fewer evaluators assigning scores for all criteria.[39] However the standard error of measurement was considerable under both horizontal (2.12) and vertical (2.86) review.[39] On a 40pt scale, these values are equivalent to the score difference between the 1st and 26th ranked applicant (horizontal), and 1st and 45th ranked applicant (vertical).[39] This highlights the potential impact of poor reliability on applicant outcomes and suggests that programs may improve agreement between evaluators by modifying certain features of implementation. In this study, inclusion of AVIs was found to significantly impact applicant overall scores. The few high-scoring applicants benefited substantially, which may serve the aim to more effectively identify outstanding applicants who may be academically less-competitive. However, this may not justify the overall negative shift in scores observed in most applicants, with AVI inclusion. Changing the scoring formula may minimize distinctions between individual applicants, reducing its value.

The subjectivity of evaluators when grading virtual interviews should be considered. Assigning multiple raters to each applicant may serve to mitigate potential biases. As shown in Figure 8, the leniency or stringency of scoring varies across evaluators. While the use of scores

from multiple evaluators to determine the average AVI score of each applicant may allow for a more equitable process, it is still subject to limitations of poor inter-rater reliability. The limited agreement between evaluators may impact the consistency and fairness in applicant assessment. This agreement could potentially be improved by providing evaluator training, specific definitions of the traits of interest, and examples of how applicants might demonstrate these traits to varying degrees. This would allow further standardization in the assessment of AVIs to improve consistency in scoring.

The findings of this study are constrained by several limitations. First, the small samples for minority groups will impact the generalizability of the findings. While data was analyzed across four admissions cycles, the sample of applicants may not be representative of all DPT applicants and the broader population. Additionally, the small sample size of Black (n=14) and Native American (n=1) subgroups limits the ability to draw conclusions about the scoring of these applicants. Additional research with larger and more diverse samples is needed to expand upon the findings of this study.

There was variability in the circumstances under which applicants were scored across different years due to changes in the UNLVPT admissions process. A scoring rubric was introduced in 2021 to promote consistency. The composition of interviewers and the number of applicants assigned to each interviewer varied across different years. These changes may have influenced both the assessment of applicants and the findings of this study.

It should be emphasized that the questions asked during the AVI interviews have not been validated. The prompts intend to assess grit, professionalism, and cultural sensitivity;

however, it is unclear whether the questions and scores appropriately measure these qualities. Future revisions to the current admissions process at UNLVPT should include investigating the validity of the AVI interview questions and scoring options. An additional recommendation is to provide the same level of scrutiny and skepticism in evaluating established methods for assessing and comparing applicants. Several studies have emphasized the potential problems that arise from the overutilization of the GRE and other similar standardized tests. Specifically, an achievement gap in GRE test scores has been identified in the literature that negatively impacts members of historically disadvantaged groups.[40] However, the GRE's validity and predictive value and utility cannot be disregarded.

Lastly, the scope of this study did not consider the outcomes for admitted applicants, such as completion of the program, final program GPA, performance in physical therapy board exams, and other professional endeavors. Further research into these outcomes may help demonstrate whether AVI implementation improves selection of applicants who go on to achieve favorable outcomes as students and future clinicians.

5. CONCLUSION

To summarize, this study highlights the potential benefits and limitations observed in the implementation of AVIs in the UNLVDPT program's admissions process. Our findings suggest that AVIs may offer an opportunity for underrepresented applicants, specifically Black applicants, to showcase additional skills outside of traditional academic metrics. However, the distribution of the impact of AVIs on overall applicant scores among racial/ethnic groups and the poor inter-rater reliability among faculty evaluators observed raise concerns about the effectiveness of this admissions tool in truly increasing diversity for all racial and ethnic groups. Although AVIs may assist in identifying exceptional candidates who may not be as academically competitive, the negative shift in scores for most applicants and the challenges in scoring consistency necessitate careful consideration.

Admissions processes in DPT programs should be continuously reviewed and analyzed for the benefit of admitted applicants and the broader community. Research focused on the evaluation of the applicant beyond academic achievement and standardized testing performance in the admissions process is essential for DPT programs to produce culturally competent clinicians who best serve diverse populations.

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CURRICULUM VITAE

Conner Clark, SPT
Las Vegas, NV
Email: connerclarkdpt@gmail.com

Education

DPT	University of Nevada, Las Vegas	2021-2024	Physical Therapy
BS	University of Nevada, Reno	2016-2019	Community Health Sciences

Clinical Experience

Jan. 2024 – March 2024	Total Sports Medicine & Orthopedic - Las Vegas, NV
Sept. 2023 – Dec. 2023	Summerlin Hospital & Medical Center - Las Vegas, NV
July 2023 – Sept. 2023	PAM Rehabilitation Hospital of Centennial Hills - Las Vegas, NV
June 2022 – July 2022	Fit Physical Therapy - Mesquite, NV

Employment History

Dec. 2019 – May 2021	Great Basin Orthopaedics - Reno, NV

Contact Information
Nanea.Lagasca@gmail.com

Education

Doctor of Physical Therapy
University of Nevada, Las Vegas
May 2024

Bachelor of Science, Cum Laude – Comprehensive Medical Imaging
University of Nevada, Las Vegas
May 2016

Clinical Experience

Jan 2024 – Mar 2024	Dignity Health Physical Therapy – Raider's Way| Las Vegas, NV *Specialty (Pelvic Floor)*
Sept 2023 – Dec 2023	Desert View Hospital | Pahrump, NV *Acute Care (Rural)*
Jul 2023 – Sept 2023	Valley Health Specialty Hospital | Las Vegas, NV *Inpatient Rehab*
Jun 2022 – July 2022	Optimal Therapy | Las Vegas, NV *Outpatient Orthopedics*

Employment

Aug 2022 – Jul 2023	Graduate Teaching Assistant – Department of Physical Therapy at University of Nevada Las Vegas 4505 S Maryland Pkwy, Las Vegas, NV 89154
Jan 2018 – Jan 2022	Registered Radiologic Technologist University Medical Center Quick Cares (multiple locations)
Oct 2016 – Jan 2018	University Medical Center Main Hospital 1800 W Charleston Road, Las Vegas, NV 89102
Dec 2016 – Jun 2019	St. Rose Dominican Hospitals (Siena and De Lima locations)

Gladys Miller, SPT, CPA (INACTIVE)

Gladysa619@gmail.com

EDUCATION

University of Nevada, Las Vegas – GPA: 3.8 May 2024
Doctor of Physical Therapy

University of Nevada, Las Vegas – GPA: 3.9 December 2019
Preparatory coursework for Doctor of Physical Therapy

University of San Diego – GPA: 3.9 May 2013
B.A. Accountancy, Minor in International Relations Summa Cum Laude

CLINICAL EXPERIENCE

Sunrise Hospital and Medical Center Las Vegas, NV
Student Physical Therapist Clinical Rotation Jan 2024 – March 2024

Valley Health Specialty Hospital Inpatient Rehabilitation Las Vegas, NV
Student Physical Therapist Clinical Rotation Sept 2023 – Dec 2023

Cleveland Clinic Lou Ruvo Center for Brain Health Las Vegas, NV
Student Physical Therapist Clinical Rotation July – Sept 2023

Concentra Medical Center Henderson, NV
Student Physical Therapist Clinical Rotation June – July 2022

EMPLOYMENT EXPERIENCE

Anytime Fitness South Rainbow Las Vegas, NV
Co-owner Feb 2020 - Feb 2023

PriceWaterhouseCoopers Las Vegas, NV
Experienced Assurance Associate Sept 2013-July 2015

PROFESSIONAL CERTIFICATIONS AND ORGANIZATIONS

- Certified Public Accountant (INACTIVE) – License #130871
- Member of APTA and the Federal and Neurologic sections of APTA
- American Heart Association CPR/AED

Jasmine Puspos, SPT
Email: jasminepuspos@gmail.com

Education

DPT	University of Nevada, Las Vegas	2021-2024	Physical Therapy
BS	University of Nevada, Reno	2015-2019	Community Health Sciences

Clinical Experience

January 2024 – March 2024	Sunrise System Southern Hills Hospital
September 2023 – December 2023	Dignity Health Rehabilitation Hospital
July 2023 – September 2023	Synergy Physical Therapy Inspirada
June 2022 – July 2022	Physical Therapy Professionals Reno

Employment History

October 2019 – April 2021	Renown Rehabilitation Hospital Reno