

Increasing Confidence among Fourth Year Medical School Students Preparing For Residency Interviews

Background: The rise of COVID-19 has made changes in medical education and residency preparedness as residency interviews have shifted from an in person to virtual platform. This study looks at the differences between confidence scores based on the number of preparation events attended by the students in order to assess fourth year student confidence.

Method: Survey research was conducted for this study using a non-experimental research design with an invited sample size of 125 medical students in their fourth year. The independent variable was the number of training sessions attended. The dependent variable was the confidence score of the student. Our team gathered data on the confidence of fourth year medical students as they prepared for virtual interviews and determined the differences, if any, in confidence in their ability to interview based on the amount of preparation.

Results: The overall response rate was 28 percent out of a total of 124 possible participants. A total of 30 participants were used in analysis. Using linear regression, results demonstrate a statistically significant ($p < .05$) result and a strong moderate correlation ($r = .549$) of how many interview assignments and activities the students completed correlated positively with the overall confidence the student had in their interview performance.

Conclusion: The findings of this study show a strong correlation between the level of participation in virtual interview preparedness events and the level of confidence in students preparing for interviews, demonstrating the importance of residency interview preparedness for virtual platforms.

Keywords: Graduate medical education, Residency, Interviews, COVID19, Virtual interviews

زیاده الثقة بين طلاب السنة الرابعة في كلية الطب في التحضير لمقابلات الإقامة

الخلفية: أدى ظهور COVID-19 إلى تغييرات في التعليم الطبي والاستعداد للإقامة حيث تحولت مقابلات الإقامة من منصة شخصية إلى منصة افتراضية. تبحث هذه الدراسة في الفروق بين درجات الثقة بناءً على عدد أحداث الإعداد التي حضرها الطلاب من أجل تقييم ثقة طلاب السنة الرابعة.

الطريقة: تم إجراء بحث مسحي لهذه الدراسة باستخدام تصميم بحث غير تجريبي مع حجم عينة مدعوة من 125 طالب طب في عامهم الرابع. كان المتغير المستقل هو عدد الدورات التدريبية التي حضرها. كان المتغير التابع هو درجة ثقة الطالب. قام فريقنا بجمع بيانات عن ثقة طلاب السنة الرابعة في الطب أثناء استعدادهم للمقابلات الافتراضية وتحديد الاختلافات. إن وجدت، في الثقة في قدرتهم على إجراء المقابلة بناءً على مقدار التحضير.

النتائج: بلغ معدل الاستجابة الإجمالي 28 بالمائة من إجمالي 124 مشاركاً محتملاً. تم استخدام ما مجموعه 30 مشاركاً في التحليل. باستخدام الانحدار الخطي، تظهر النتائج نتيجة ذات دلالة إحصائية ($p < .05$) وعلاقة قوية معتدلة ($r = .549$) لعدد مهام وأنشطة المقابلة التي أكملها الطلاب والتي ارتبطت بشكل إيجابي بالثقة العامة للطلاب في أداء المقابلة.

الخلاصة: تظهر نتائج هذه الدراسة ارتباطاً وثيقاً بين مستوى المشاركة في أحداث الاستعداد للمقابلة الافتراضية ومستوى الثقة لدى الطلاب الذين يستعدون للمقابلات، مما يدل على أهمية الاستعداد لمقابلة الإقامة للمنصات الافتراضية.

الكلمات المفتاحية: التعليم الطبي للخريجين، الإقامة، المقابلات، COVID19، المقابلات الافتراضية



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افزایش اعتماد به نفس بین دانشجویان سال چهارم دانشکده پزشکی که برای مصاحبه های دستیاری آماده می شوند

زمینه و هدف: ظهور بیماری کووید ۱۹ تغییراتی را در آموزش پزشکی و آمادگی برای آزمون دستیاری ایجاد کرده است چراکه مصاحبه های دستیاری از بستر حضوری به مجازی تغییر کرده است. این مطالعه به بررسی تفاوت بین نمرات اعتماد به نفس دانشجویان سال چهارم پزشکی بر اساس تعداد جلسات آموزشی آماده سازی که در آن شرکت کردند، می پردازد.

روش: پژوهش پیمایشی برای این مطالعه با استفاده از طرح پژوهشی غیرتجربی با حجم نمونه دعوت شده ۱۲۵ دانشجوی پزشکی در سال چهارم انجام شد. متغیر مستقل تعداد جلسات آموزشی شرکت شده بود. متغیر وابسته نمره اعتماد به نفس دانشجوی بود. ما اطلاعات مربوط به اعتماد به نفس دانشجویان سال چهارم را هنگام آماده شدن برای مصاحبه مجازی جمع آوری کردیم و تفاوتها را در صورت وجود، در اعتماد به توانایی آنها برای مصاحبه بر اساس میزان آمادگی تعیین کردیم.

یافته ها: میزان پاسخ کلی ۲۸ درصد از مجموع ۱۲۴ شرکت کننده ی ممکن بود. در مجموع از ۳۰ شرکت کننده در تجزیه و تحلیل استفاده شد. با استفاده از رگرسیون خطی، نتایج، یک نتیجه آماری معنی دار ($P > .05$) و یک همبستگی متوسط قوی ($r = .549$) را نشان می دهد و بیانگر این است که تعداد تکالیف و فعالیت هایی که دانشجویان در قالب مصاحبه انجام داده اند، با اعتماد به نفس کلی که دانشجویان هنگام انجام مصاحبه دارند، همبستگی مثبت دارد.

نتیجه گیری: همبستگی قوی بین میزان مشارکت در رویدادهای آمادگی برای مصاحبه مجازی و سطح اعتماد به نفس در دانشجویانی که برای مصاحبه آماده می شوند، وجود دارد که نشان دهنده اهمیت آمادگی برای مصاحبه دستیاری در بستر فضای مجازی است.

واژه های کلیدی: تحصیلات تکمیلی پزشکی، دستیاری، مصاحبه، کووید ۱۹، مصاحبه مجازی

رژیمسنسی انترویوز کی تیاری کرنے والے فوریز ایئر میڈیکل اسکول کے طلباء میں اعتماد میں اضافہ

پس منظر: COVID-19 کے عروج نے طبی تعلیم اور رہائش کی تیاری میں تبدیلیاں کی ہیں کیونکہ رہائش کے انٹرویوز ذاتی طور پر ورجوئل پلیٹ فارم پر منتقل ہو گئے ہیں۔ یہ مطالعہ چوتھے سال کے طالب علم کے اعتماد کا اندازہ لگانے کے لیے طلباء کی جانب سے تیاری کے پروگراموں کی تعداد کی بنیاد پر اعتماد کے اسکور کے درمیان فرق کو دیکھتا ہے۔

طریقہ: اس مطالعہ کے لیے ایک غیر تجرباتی تحقیقی ڈیزائن کا استعمال کرتے ہوئے سروے کی تحقیق کی گئی جس میں ۱۲۵ میڈیکل طلباء کو ان کے چوتھے سال میں مدعو کیا گیا۔ آزاد متغیر تربیتی سیشنوں کی تعداد تھی۔ منحصر متغیر طالب علم کا اعتماد کا اسکور تھا۔ ہماری نین نے چوتھے سال کے میڈیکل طلباء کے اعتماد پر ڈیٹا اکٹھا کیا جب وہ ورجوئل انٹرویوز کی تیاری کر رہے تھے اور تیاری کی مقدار کی بنیاد پر انٹرویوز کرنے کی ان کی اہلیت پر اعتماد میں، اگر کوئی ہے تو، فرق کا تعین کیا۔

نتائج: مجموعی ردعمل کی شرح کل ۲۸٪ ممکنہ شرکاء میں سے ۲۸ فیصد تھی۔ تجزیہ میں مجموعی طور پر ۳۰ شرکاء کا استعمال کیا گیا۔ لکیری رجعت کا استعمال کرتے ہوئے، نتائج اعدادوشمار کے لحاظ سے اہم ($p < .05$) نتیجہ اور ایک مضبوط اعتدال پسند ارتباط ($r = .549$) کو ظاہر کرتے ہیں کہ طلباء نے انٹرویوز کی کتنی اسائنمنٹس اور سرگرمیاں مکمل کیں جو طالب علم کے انٹرویوز کی کارکردگی میں مجموعی اعتماد کے ساتھ مثبت طور پر منسلک ہیں۔

نتیجہ: اس مطالعے کے نتائج ورجوئل انٹرویوز کی تیاری کے واقعات میں شرکت کی سطح اور انٹرویوز کی تیاری کرنے والے طلباء میں اعتماد کی سطح کے درمیان ایک مضبوط تعلق کو ظاہر کرتے ہیں، ورجوئل پلیٹ فارمز کے لیے رہائشی انٹرویوز کی تیاری کی اہلیت کو ظاہر کرتے ہیں۔

مطلوبہ الفاظ: گریجویٹ میڈیکل ایجوکیشن، رہائش، انٹرویوز، COVID19، ورجوئل انٹرویوز

INTRODUCTION

Each year, fourth year medical students across the country submit their applications for the residency match and begin to make preparations for “interview season” with the hopes of landing a top spot on their rank list. There are innumerable internet blogs, forums, articles and consulting firms available on the internet dedicated to assisting students with their interview preparation. Despite this, unmet needs still exist to prepare students for this task. Interviews are utilized to garner information from candidates that is not apparent by reading their applications. This includes their communication skills, facial expressions, language proficiency, and even clinical and ethical skills depending on the interview format (1). Overall, there is a lack of literature providing guidance and quantitative data on the success of interview preparation for medical students.

In the 2020-2021 interview season in particular, preparedness was at a premium as the selection process had to fundamentally change to accommodate the health concerns associated with the COVID19 pandemic. More specifically, residency programs moved to a virtual platform for interviews in order to prevent the spread of COVID19. Tassinari et al., noted in their study regarding applicant preparation for interviews that the 2020-2021 interview season was not the first attempt at virtual interviews (2). They pointed out that in 2011, the Ophthalmology Department at the University of Arizona conducted virtual interviews over skype (2). In a survey of their faculty following that process, their faculty stated that they had a positive experience and would be willing to continue virtual interviews in the future (2). This sentiment appears to be echoed following the 2020-2021 interview season. The main advantages of continuing this process is decreased travel expenses for applicants, increased availability to attend interviews and decreased disruption to fourth year rotations. There is a high likelihood that virtual interviews will continue into the future. In addition to these advantages, traditional interviews have also been criticized in the past for being expensive, time consuming and limited due a finite amount of availability for each program (3).

With the introduction of virtual interviews, medical students will have to adjust their interview strategy to conform to the platform. Specifically, this adds additional layers of complexity with respect to environment/ background, audio and virtual etiquette (4). The purpose of this study was to analyze the level of confidence of 4th year medical students as it related to their preparedness for virtual residency interviews. This study was conducted via email in February 2021 after the conclusion of residency interviews.

METHODS

Survey research was conducted for this study using a non-experimental research design as it did not involve manipulation of the situation, circumstances, or participants.

Sampling Procedures

The independent variable was the number of sessions attended. The dependent variable was the confidence score

of the student. The study looked at the differences between confidence scores based on the number of preparation events attended by the student. Students applying to residency in the 2020-2021 cycle and had completed interviews during the cycle were included in the study. Students that did not apply this cycle or did not complete or have any interviews were excluded from the survey. Although the college has over 100 students in years one-three of their medical education, they were not included in this survey as they were not actively engaged in the residency process for this cycle.

The population of this study included osteopathic medical students from one of two campuses of a private medical college in New York and Arkansas. Convenience sampling was used along with email solicitation of potential participants. Using this technique, our team gathered data on the confidence of fourth year medical students as they prepared for virtual interviews and determined the differences, if any, in confidence in their ability to interview based on the amount of preparation.

The private institution with two campus locations enrolls roughly 1600 students between the two campuses for four years of medical education each year. This includes two years of pre-clinical education and two years of medical clerkships. Approximately 125 students on the selected campus were eligible to participate in the survey and interview preparation activities. Participants self-selected to participate in this study and responses were collected via email solicitation.

There were no payments or agreements made to participate and the study was approved by the Institutional Review board at the institution of the study and of the other researchers.

Data Collection

Prior to the collection of the data, written permission to collect data was obtained by the Institutional Review Board of the private osteopathic medical school as well as a committee established to protect data for medical students. The Qualtrics survey software was used to capture responses. An email soliciting student participation was sent through the student listserv to invite students to complete the survey through a URL to the survey. Only fourth year medical students entering the residency application cycle were invited to join.

The email message offered a brief explanation of the study being conducted and participants were informed of the confidentiality and anonymity of their responses. Participants were given consent information of the survey homepage and were informed the survey is voluntary. The surveys will be administered through Qualtrics site through the institution. Upon completion of the survey responses were analyzed with the assistance of the Qualtrics software. Participants were asked to complete the survey within 10 days of receiving the link. The survey link will be valid for 30 days. Reminder emails were sent every 10 days with a total of two reminders being sent over a 30-day period.

Instrumentation

The survey created by Donaldson, et al. was used to assess

student confidence. Donaldson et al (2020) used the survey to assess student confidence after a program preparing students for interviews prior to the COVID-19 pandemic (5). The previous research assessed student responses using Chi Square analysis using pre-test and post-test scores of the training program. This study used linear regression to assess confidence of interviewers and the completion of the interview season and was correlated based on the number of interview preparation activities they completed. As a different type of analysis was used and not identical to the previous research, reliability and validity scales were not available for comparison.

A score of 1 on each item indicated that the respondent had *no confidence at all* in the behavior suggested and a score of 5 indicated that the respondent had *complete confidence* in the behavior or concept suggested. The score from this measure then relates to the overall belief in that person's ability to achieve their goals as it relates to interviewing. Responses were obtained using a confidence continuum, with 1 being the students' *not confident* in all in their abilities and 10 having *complete confidence*. The score of the scales was then totaled and the participant received an overall score that determined their overall interviewing confidence.

The items measuring confidence were analyzed with the number of events attended to prepare for interviews. Listed below are the choices for each independent variable captured in the questionnaire based on participation and confidence:

1. Event Participation
 1. Mini- Match Meetings
 2. Specialty Specific Interview Prep with Faculty/ Residents
 3. Interview Forums (Question and Answer with Career Advisor)
 4. Individual Interview Preparation
 5. Interview Stream assignments
 - a. Assignment 1
 - b. Assignment 2
 - c. Assignment 3
 - d. Assignment 4
 - e. Assignment 5
 - f. Assignment 6
 - g. Assignment 7
 - h. Assignment 8
 - i. Assignment 9
 - j. Assignment 10
 6. Exploration of Big Interview platform
2. Confidence Intervals (5)
 1. I have increased my knowledge of the interview process through these activities.
 2. I have learned new skills from these activities.
 3. I increased confidence in my ability to interview because of these activities.
 4. I was better prepared for my interviews because of these activities.
 5. I will apply this new knowledge and skills to my

residency interviews.

6. I improved my interview performance because of these activities.
7. I believe I have increased my likelihood of matching the intended specialty because of my interview preparation.

Participants selected their confidence level that they are able to accomplish after each task by selecting their answer according to a five-point continuum: No Confidence at All, Very Little Confidence, Moderate Confidence, Much Confidence and Complete Confidence. Scores will be calculated based on the total score.

This study is a non-experimental design using a previously used instrument with the current matriculated students within the osteopathic medical school on one campus. Convenience sampling was used and prospective participants were solicited via email. The fixed independent variables were interview preparation participation and the dependent variables were the confidence scores.

Survey results were collected and reviewed, and incomplete surveys were not analyzed. Once data was reviewed and checked for inconsistencies, the data was analyzed via SPSS to determine if a relationship exists, preparation participation and level of confidence. A Linear Regression was performed to analyze the extent of the relationship between preparation activities and overall confidence scores. The outcome of the survey was analyzed to determine if a correlation existed between preparation and confidence and degree of correlation between the scores and participants.

The outcomes of this survey assist in determining the type of activities that students use to prepare for interviews with which and how many increase their confidence. This information could then be used as a recommendation to educators in medical education to allow for more inclusive and comprehensive career development interventions to assist medical students in their career decision-making.

Data Analysis

The purpose of this study was to analyze the level of confidence of 4th year medical students as it related to their preparedness for virtual residency interviews. Participants of this study completed a survey of their confidence and preparedness for virtual residency interviews and reported the number and types of events they attended that were provided by their institution for this preparation. Data was analyzed with a Linear Regression to determine correlation between confidence scores and number of events attended. Responses were recorded through a Qualtrics survey. After the surveys were closed, data reports were downloaded from Qualtrics and transferred into IBM Statistical Package for the Social Sciences (SPSS v. 26) software to complete the data analysis.

No demographic variables were used in this survey as age, gender, race, ethnicity were not considered in previous research and not believed to have an effect on interview confidence. The overall response rate was 28 percent out of a total of 124 possible participants. A total of 42 students responded to the survey. Twelve incomplete surveys were

removed for a total of 30 completed surveys used for analysis. Using linear regression, the participation scores were correlated with the confidence scores with independent variable of participation score and dependent variable of confidence score. This analysis describes whether there is a positive or negative relationship between the number of preparation activities and the overall confidence level of the participants.

RESULTS

Eligible participants for the survey were fourth year medical students applying to residency for the 2020-2021 through the Electronic Residency Application Service. (ERAS). For this cycle, there 124 eligible participants that were all offered the interview preparation activities through the campus' Residency and Career Services office. A total number of 42 students participated in the survey, 30 completed surveys were used for the analysis. The students attend a private osteopathic medical school in the southeast region of the United States with the majority of students hailing from Florida, Illinois, Texas and Arkansas. Table 1 shows descriptive statistics of the variables of confidence and participation.

The linear regression shows a statistically significant ($P < 0.05$) result and a strong moderate correlation ($r = 0.549$) as seen from the data in Table 2. This data shows a correlation of how many interview assignments and activities the students completed correlated positively with the overall confidence the student had in their interview performance.

DISCUSSION

There is a strong positive correlation with the number of interview preparation events attended and the students' overall confidence level. This is an important finding to

Measure	Mean (SD)	N
Confidence	1.96 (0.82)	30
Participation	1.34 (0.32)	30

Pearson Correlation	Confidence	Participation
OV Conf.	1.000	0.549
OV Part Score.	0.549	1.000
Sig. (1-tailed)		
OV Conf.	0.001	
OV Part Score.		0.001
N		
OV Conf.	30	30
OV Part Score.	30	30

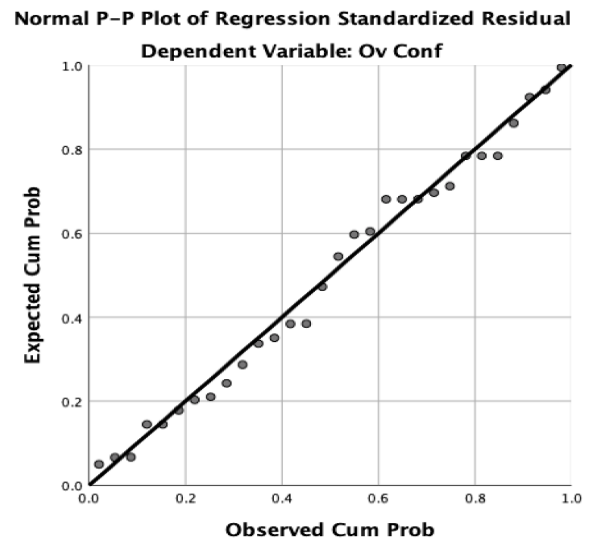


Figure 1. Plot of Regression Standardized Residual

demonstrate the need for interview preparation to raise the confidence level of residency applicants as they complete their interviews. With the growing competitiveness for students entering the residency application process, the need for interview preparation will continue to rise. This preparation is also complicated by the recommendation of the Coalition for Physician Accountability to continue the use of virtual interview practices (6).

The limitations of our study included our relatively small sample size of 42 medical students. This ultimately limits the power of our study and possible intervention. Additionally, we did not complete a pre-test survey and thus was unable to make an assessment of the confidence of the participants before the intervention. We did not enforce timing for the completion of the post-survey. This increases the potential for recall bias. Finally no standardized training was provided to those teaching interview readiness and preparedness sessions.

Future directions for this study include inviting multiple medical schools to participate. This will both increase the power of the study and generate outcomes applicable to a larger number of medical students. We could create a 'pre' assessment to better capture readiness needs that the students have identified prior to the training. This would allow us to tailor future training to better fit their needs. We will also need to assess participation in the program with placement success rates for residency. Our boot camp also heavily focused on communication skills but did not touch on other aspects of the virtual interview environment. Future boot camp sessions could include instruction on preparing the interview environment such as internet connectivity, audio, interview software platform, closing unnecessary computer applications, appropriate camera positioning as well as the interview setting itself (2).

This boot camp program can be replicated across institutions to prepare students for residency interviews. Both virtual

and in-person interview sessions may benefit from our boot camp interview preparation.

During the COVID-19 pandemic, residency interviews often transitioned from an in-person format to a virtual scale. Now, it is possible that these virtual platforms will be present as a means to assess future residency interviews. That being said, our study considers the level of confidence in fourth year medical students for virtual interviews as they complete pre-interview preparation sessions with their respective medical school. The findings of this study show a moderate correlation between the level of participation and the level of confidence in students preparing for interviews. A statistically significant positive correlation was also found between the number of participation activities and a higher level of confidence. While our study is small, it demonstrates the importance of virtual interview preparedness as a means to confidence and also lends to further publication and study

on this topic as well as incorporation into interview preparedness in the curriculum across medical schools.

Ethical considerations

Ethical issues including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc. have been completely observed by the authors.

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