

A Content Analysis of Interviewee Reports of Medical School Admissions Interviews

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Abstract: Introduction. Prospective medical school applicants use Internet websites to gain information about medical school interviews as well as to offer their experience in such interviews. This study examined applicants' reported experiences of interviews and compared them to the purposes of the interview as purported by medical schools.

Method. Content analysis of student feedback regarding medical school interviews at 161 medical schools was conducted for entries of over 4600 students applying to medical school who anonymously and voluntarily completed an online questionnaire.

Results. Across all medical schools, nearly one half of all cited interview questions addressed non-cognitive characteristics of the applicants. Top ranked medical schools were reported to ask significantly more interpersonal and illegal questions and fewer academic/general knowledge questions than other medical schools. Lower ranked schools did not differ significantly in the types of questions reportedly asked applicants compared to other medical schools.

Discussion. Medical school interviews are generally gathering types of information about applicants that admissions personnel identify as important in the admission decision. In addition to measuring interpersonal characteristics, medical school admissions interviews are assessing cognitive abilities and ethical decision-making. Sources on the Internet provide actual medical school interview questions to prospective students. This practice can help them gain an undue advantage in interviewing. Admissions committees and faculty who interview students may want to consider how best to obtain accurate and valid responses from applicants.

The medical school admissions interview has been retained as an essential feature of the admissions process in most medical schools.¹⁻³ In fact, a survey reported that 99% of U.S. medical schools use an interview in their admissions process.⁴ The medical school interview appears to serve four major purposes: information gathering, decision making, verification of information in the application, and recruitment.³ Admissions personnel from 127 medical schools reported the most common characteristics assessed during the interview were motivation and interest in medical school (68%), interpersonal skills and character (61%), maturity (58%), evidence of extracurricular activities (56%), communication skills (46%), and empathy and concern for others (38%).⁵ Admissions personnel in medical schools thus appear to agree that the interview is most appropriately used to assess important non-cognitive characteristics, while cognitive abilities may be better evaluated

through traditional predictors such as grade point average and scores on standardized, objective examinations of knowledge in the scientific areas relevant to medicine (i.e., Medical College Admissions Test [MCAT]).⁵

It is unclear, however, whether interviews actually accomplish these desired goals. What is known is that a personal interview typically fails to predict later performance. Personnel psychology has established average validity coefficients ranging from 0.06 to 0.19.⁶ Researchers hypothesize that interviewers fall prey to a number of biases that affect their perceptions and judgment. These biases include those formed based on the review of written information resulting in a confirmatory questioning strategy, where information is sought that reinforces an initial impression, and other rater biases such as halo and contrast.⁷

It is difficult to determine what information is actually being obtained during interviewing for admission to medical schools. However, an interview website developed in 1995 by a medical student at Johns Hopkins University provides a database containing information regarding interviewee reports of medical school interviews from 161 U.S., Canadian, and Puerto Rican medical and osteopathic schools. The database has been compiled by applicants who voluntarily complete an online questionnaire about their interview experiences. From 1995 to March 3, 2000, 4608 questionnaires had been submitted regarding interviews at 161 medical schools and schools of osteopathy. The site has been visited over 150,000 times and the database continues to grow exponentially.

Using this specific website as the data source and content analysis as the methodology, the authors examined applicants' reported experiences of the interview and considered them within the context of the purposes of the interview as purported by medical schools. We also discuss how this and similar websites can affect the validity of the interview, and we outline issues for admissions committees to consider due to the advent of Internet websites that disseminate sensitive information.

Methods

The website sample - All data originated from the website (www.interviewfeedback.com/cgi-bin/questionnaire.pl/browse). When adding interview information to the database, users are asked to give information on "Interesting/Difficult" questions posed by admissions interviewers. Users are also asked to contribute "Additional Advice" for applicants. In this study, only the content of the category "Interesting/Difficult Questions" was analyzed after our examination of the postings revealed that the advice category rarely provided interview questions, but instead information on how to get to the interview, or what questions to ask while on campus. Although it might appear that examining only the most interesting or difficult questions in admissions interviews would limit the validity of the study, respondents to this prompt tended to list typical questions and offer narratives of the interview in addition to listing what they felt were the most difficult or interesting questions, thus providing a rich database from which to draw upon for the study.

Content Analyses -A list of purposes of the interview and the types of information collected was compiled based on the literature.^{1,3,5,8} Categories of ethical questions, illegal questions, and conversa-

tional questions were added in order to fully explicate the purposes of the interview. The final categories were as follows: **Verification and clarification** of application-related information, **Assessment of personal, interpersonal, and other non-cognitive characteristics**, **Assessment of academic and general knowledge and cognitive ability**, **Ethical viewpoints** and decision-making, **Illegal/inappropriate** questions, **Conversational** and non-medical questions/comments, and **Recruitment**.

Two raters (A.E.R. and M.W.) were trained to use the category system by a process of reviewing the definitions, discussing the types of responses for each category, preliminary rating of data and discussion of differences in rating, and category clarification. Twenty percent of the responses were rated by both raters with a kappa of .88 (a coefficient of agreement that corrects for chance). This level of reliability was deemed satisfactory and the remaining responses were rated by one of the two raters.

All 161 medical and osteopathic schools listed on the website were analyzed for content of the admissions interview. The number of completed entries for each school ranged from 2 to 176. For each school, 10 entries were systematically sampled (using every nth entry to attain 10 entries, beginning at the first entry) to obtain applicants' feedback of the schools' interviews from the inception of the website (February 1995) to March 2000. For schools having fewer than 10 entries, all entries were analyzed. For each entry, discrete responses or comments about the interview were categorized into one of the 7 categories previously listed. Any interview question listed was categorized; responses or comments not related to actual interview questions were excluded from analyses (e.g., "The interview was really laid back, and the interviewer just seemed to want to get to know you as a person.").

Ratings of medical schools - Medical school rankings for the year 2001 by U.S. News and World Reports⁹ were obtained (www.usnews.com/usnews/edu/beyond/gradrank/med/gdmedt1.htm). This website developed and maintained by the magazine, U. S. News and World Reports, provides a ranked list of the "top" 50 medical schools based on an "overall score," which is based on reputation based on academics, reputation as determined by residency directors, student selectivity rank, 1999 average undergraduate GPA, 1999 average MCAT score, and 1999 acceptance rank. Although controversial with regard to validity, this source of information about various medical schools is popular among applicants and is often cited by

administrators. Furthermore, this rank list affords the comparison between groupings of medical schools.

Results

A total of 3571 responses were rated, and the prevalence of category types was calculated. Table 1 presents the prevalence of category types for all medical schools, for the “top 10” medical schools (as ranked by U. S. News and World Report), and for schools ranked 40-50th (as ranked by U. S. News and World Report). For all medical schools, the most prevalent category (47%) was questions that addressed the non-cognitive characteristics of the applicants. The least prevalent categories were illegal/inappropriate questions (2%) and recruitment (<1%). (It should be noted that illegal/inappropriate questions were those in which the information ob-

1 to 10 (n=11, two schools were tied for 10th). A chi-square analysis found these “top 10 ranked” schools to differ significantly in the types of questions they ask applicants when compared to the remaining pool of medical schools [Q(6)= 23.265, p<.01]. Of particular interest are the lower frequency of ethical questions and higher frequency of illegal/ inappropriate questions.

A similar analysis was performed for the schools ranked 40-50 (n=12, four schools were tied for 40th, five schools were tied for 44th, two schools were tied for 50th). A chi-square analysis did not find responses from these lower ranked schools (a total of 279 responses) to differ significantly in the types of questions they ask applicants when compared to the remaining pool of medical schools [Q(6)=10.97, p<.10].

Table 1: Frequencies of category occurrence

Category	Sample Questions	All medical schools	Top 10	Lower ranked
Verification and clarification	Have you had research experience? Why do you want to be a doctor?	11%	9%	15%
Personal, interpersonal	What is the biggest conflict you had at your undergraduate institution? What do you like to read?	47%	55%	46%
Knowledge/cognitive ability	Tell me the details of your research and what you are trying to find. If you were surgeon general, how would you address the obesity problem in the United States?	26%	21%	22%
Ethical viewpoints	What do you think about cloning? Would you support sustaining the life of a baby born without a brain?	10%	3%	11%
Illegal/inappropriate	What other schools are you applying to? What is your marital status?	2%	4%	<1%
Conversational	Have you ever written poems? What trips are you taking this year?	5%	7%	6%
Recruitment	Let me tell you reasons why you should come to [name of school]	<1%	<1%	<1%

tained is not relevant to success in medical school or is deemed a question that could be used to illegally keep applicants out of medical school. An example of the former is “Are you married?” and an example of the latter is “How old are you?”.)

To address the question of whether “top” rated schools tended to emphasize different categories of questioning than “lower” rated schools, analyses were performed to assess frequency differences in the kinds of questions asked. A total of 228 responses were analyzed from the “top” medical school ranked

Discussion

Our data suggest that medical school interviewers are generally gathering the types of information about applicants that admissions personnel identify as important in the admission decision. The interview has traditionally been asserted to measure non-cognitive characteristics, and nearly half the cited questions related to personal, interpersonal, and non-cognitive characteristics. However, although medical admissions obtain many cognitive measures, over

25% of all cited questions assessed knowledge, cognitive ability, and thought processes of the applicants. This percentage seems high in light of the more valid and reliable measures of cognitive ability already in the applicants' files.

Almost one out of every 10 cited questions consisted of resolving an ethical dilemma. With the advent of technology and the increasing pressures by managed care on practice, there are many ethical decisions that physicians will face. It appears that admissions committees and faculty physicians deem it important to query prospective students about ethical issues.

Five percent of cited questions were conversational or non-medical, meaning that the information gathered would most likely be unrelated to whether an applicant would make a good physician. However, these questions may be helpful in making the applicant comfortable or establishing rapport. It is interesting, though, that the applicants posted these questions as most interesting or difficult.

Our data also revealed that approximately 2 percent of cited questions asked were illegal or inappropriate. While this is a small percentage, questions about an applicant's age, marital status, ability to raise a family and go to medical school, and ranking of other medical schools applied to can be demeaning, insulting, and/or irrelevant to the decision to accept or reject that student.

Of interest was significant difference between top tiered schools and the remaining group of medical schools on types of questions asked. Top ranked schools showed a lower frequency of academic/general knowledge questions. This could be explained by the fact that most students applying to highly ranked schools have extremely high test scores and grade point averages; it may be that interviewers believe that top tiered schools attract the academically elite, thus rendering questions that measure cognitive ability unnecessary. Top tiered schools asked a higher frequency of interpersonal questions than the remaining medical schools. Since top ranked schools have little trouble attracting outstanding candidates, they may place extra emphasis on finding students who are not just academically focused but also show personal characteristics that would enhance their ability to practice medicine. The data from top ranked schools also revealed a higher frequency of illegal questions than the other medical schools. It is possible that due to the prestige and reputation of such schools, interviewers feel they

have nothing to lose by asking inappropriate or illegal questions.

Because the data examined are self-report, their validity is unknown. While a large range of questions were obtained from the website, the questions were from the "Most Interesting/Most Difficult" category, so some interview questions may have been excluded due to the title of the category. The questions categorized in this study may not be representative. In addition, there is no way to verify the accuracy of the applicants' reports.

Conclusions

This website's usage demonstrates that many students use the Internet to help them gain an advantage in interviewing by being familiar with interview questions asked. This advantage can in turn affect the validity of the information obtained during interviews as students' answers become rehearsed and practiced, rather than spontaneous and genuine. Admissions committees that use the same questions year to year, or faculty who do so, may wish to consider how to change those practices to best obtain accurate and valid responses from applicants. As examples, various interview formats could be substituted for the sequential, single interviewer format used in many medical schools. Having two interviewers interview two applicants to stimulate the flow of a natural conversation is one such variation.

Alternatively, medical school admissions committees can consider the possibility of structured interviewing, where all applicants are asked the same questions by their interviewers and the answers are graded according to a common template. While this type of interview is difficult to construct and validate, it is the most common type of interview in the business world due to its high validity and reliability.

An implication of these results is that admissions personnel should query faculty interviewers regarding their impressions of applicants' familiarity with questions typically used. If applicants' answers appear rehearsed or flat in tone, then alternate questions can be developed and implemented. Having admissions interviewers meet before and during the admissions process to discuss the responses being received to the interviews is an important aspect of keeping the interview process fresh for both applicants and interviewers.

An equally important conclusion is that, while many faculty doing interviewing approach this task with enthusiasm and genuine interest in the student

applicant, some do not. Some questions noted by students on the website were sufficiently demeaning, insulting, or irrelevant that they would raise concern about the ability or the commitment of the interviewing faculty member. The results of this study suggest that faculty conducting interviewing should receive training so that their questioning meets standards of uniformity and quality. This task should likely occur on a yearly basis, and would provide the admissions committee with the opportunity to update the faculty interviewers on particular interests they have for student abilities and qualifications.

References

1. Meridith KE, Dunlap MR, Baker HH. Subjective and objective admissions factors as predictors of clinical clerkship. *J Med Educ.* 1982;57:743-751.
2. Elam CL, Johnson MMS. Prediction of medical students' academic performance: does the admission interview help? *Acad Med.* 1992;67(10 suppl):S28-S30.
3. Edwards JC, Johnson EK, Moldor JB. The interview in the admission process. *Acad Med.* 1990;65:167-177.
4. Puryear JB, Lewis LA. Description of the interview process in selecting students for admission to US medical school. *J Med Educ.* 1981;56:881-885.
5. Johnson EK, Edwards JC. Current practices in admission interviews at US medical schools. *Acad Med.* 1991;66:408-412.
6. Reilly RR, Chao GT. Validity and fairness of some alternative employee selection procedures. *Pers Psych.* 1982;35:1-62.
7. Lathan GP, Saari LM. Do people do what they say? Further studies on the situational interview. *J App Psych.* 1984;69:569-573.
8. Nowacek GA, Bailey BA, Sturgill BC. Influence of the interview on the evaluation of applicants to medical school. *Acad Med.* 1996;71,1093-1095.
9. U. S. News and World Report 2001 Graduate Rankings. *U. S. News.* Retrieved March 31, 2000 from http://www.news.com/usnews/edu/beyond/grad_rank/med/gdmet1.htm

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