

A comparison of interviewed and non-interviewed student cohorts for the PA program of study and national physician assistant certification exam scores.

Submitted by

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A project presented to the Department of  
Physician Assistant of Wichita State University  
in partial fulfillment of the  
requirements for the degree  
of Masters of Physician Assistant

May 2006

Wichita State University  
College of Health Professions  
Department of Physician Assistant

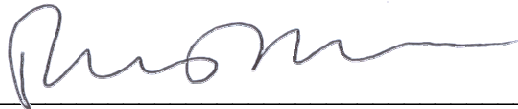
We hereby recommend that the research project prepared under our supervision by Lisa Humphries entitled a comparison of interviewed and non-interviewed student cohorts for the PA Program of study and national physician assistant certification exam scores will be accepted as partial fulfillment for the degree of Master of Physician Assistant.

Approved:



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*Abstract*

Introduction: Certain student attributes (e.g., GPAs, personal interview scores) have been used by professional college programs to help differentiate candidates during the admissions process in an effort to select candidates that are likely to be successful. Though certain attributes have been evaluated over the years (e.g., GPA), information is lacking regarding the importance of interviewing candidates for admission. Physician assistant programs have routinely interviewed prospective candidates without knowing if the interview makes a difference, specifically on the PA national certifying exam score (NCCPA). Methodology: A retrospective study was done comparing NCCPA aggregate exam scores of WSU PA students. Study subjects included graduates from 1991-1996 who served as the interviewed cohort and graduates from 1997-2002 who served as the non-interviewed cohort. Each study group was subject to descriptive and parametric statistics with the alpha level set at 0.5. An independent sample *t*-test was used to see if there was a significant difference in NCCPA aggregate exam scores between the cohort groups. Results: The mean of each cohort group was similar. The mean for the interviewed graduates was 496.67 (SD +/- 28.54) and the mean for the non-interviewed graduates was 474.33 (SD +/- 15.28), which were not statistically different. Discussion: In this small study, which only evaluated interviewed and non-interviewed cohort's aggregate NCCPA exam scores, no difference was found. A large-scale study evaluating the same variables is suggested before generalizations can be made.

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## Acknowledgements

I would first like to thank my research advisor, Richard Muma for his infinite patience, scheduled deadlines and endless encouragement throughout this process. I would also like to thank my family and friends for their constant support and belief in me. I could not have achieved my goals without them. Lastly, I would like to thank M.T. for giving me the extra confidence I needed to pursue a career as a physician assistant.

## *Introduction*

Traditionally, individuals who choose a medical career know that they must meet specific program requirements in order to be considered a competitive prospective student. The criterion used by the majority of professional college programs includes the following elements: grade point average, standardized tests, health care experience, letters of recommendation and in-person interviews. Most programs weight the undergraduate grade point averages and the standardized tests scores more because of their presumed ability to predict success, thus leaving the question of importance of the other elements.

When professional colleges set out to determine whom the best applicants are, they look at each student individually and try to predict how well the student might do, not only in the program but also in the profession. In order to do this, the predictors of success of each specific area are evaluated. In preprofessional college level evaluations, undergraduate grade point averages (GPA) and standardized tests scores such as the Scholastic Aptitude Test (SAT), Medical College Admission Test (MCAT), Allied Health Professions Admissions Test (AHPAT), and Dental Admission Test (DAT) have proven to be adequate predictors of scholastic achievement.<sup>1</sup> Higher undergraduate GPA predicts success, as do the higher scores on standardized tests for graduate students in general.<sup>1</sup> In professional health programs, previous health care experience, either direct patient related or indirect patient related is less understood. Student demographics (e.g., date of birth, age, sex, race) have been analyzed and have shown that older PA students do not perform as well as their younger counterparts on national board exams.<sup>1</sup> In-person interviews are part of the admissions process for many disciplines, which includes

physician assistants (PA), medical, dental, dental hygiene, physical therapy, pharmacy, and nursing students, however, very little information is available on whether interviewing candidates (or not) is a predictor of success.<sup>1-4</sup>

Of particular interest is the physician assistant (PA) profession. Physician assistants are skilled health practitioners qualified by academic and clinical experience to provide patient care services under the supervision and direction of a licensed physician. Anecdotally, it is widely known that the PA profession uses personal interviews (in addition to GPA, health care experience, personal references), but the profession has not fully evaluated whether they make a difference on the National Commission on Certification of PAs (NCCPA) certification exam scores. Therefore, the purpose of this study is to answer the question, does the in-person interview make a difference in regards to passing the NCCPA exam?

### *Literature Review*

A literature review was conducted using Medline and CINAHL databases from 1970 to the present. The keywords utilized in the search include: physician assistants in education, predictors of student success, dental interviews and national board scores, nursing interviews and national board scores, and psychology in entrance interviews.

Professional colleges are not only experiencing greater numbers of applicants, but the applicants are well qualified in terms of GPA, thus, making the admissions process more difficult.<sup>5</sup> The admissions process is also viewed as expensive in terms of time, money and effort for all involved so determining effective processes will likely benefit students as well as educators.<sup>6-8</sup> The admissions process is similar for physician assistants (PA), medical, dental, physical therapy, pharmacy, and nursing students. In



those disciplines that interview, only the applicants who meet the specific program requirements are invited for an in-person interview. Once the admissions process is complete, faculties evaluate each prospective applicant and decide which applicants are most likely to be successful in the respective programs. Grade point average (GPA), standardized testing, interviewing, health care experience, and letters of recommendation are the likely elements used to help in this admissions process.<sup>1-4, 9, 10</sup>

Identifying predictors of success can be beneficial to professional programs if the predictors do indeed provide proof of success. Research done on medical students has proven that the greater the number of variables available, the greater the accuracy of prediction.<sup>2</sup> The most important quantitative criteria include academic or cognitive criteria. The measures of undergraduate GPA and MCAT scores are efficient to process and have been found to be relatively good predictors of basic science achievement, though their predicting values decrease as medical students progress to the clinical years.<sup>11</sup> Using GPA as a predictor of success is one of the most common used though it has limitations. One limitation is the lack of comparability if GPAs are obtained from different educational institutions with different levels of quality and different basis for grading. So, an “A” or “B” average varies greatly from one undergraduate program to another, which makes for an unreliable difference in academic achievement.<sup>4</sup> Lack of variability is another limitation. GPA range from 0-4 and most undergraduate GPAs range from 3.0-4.0. The range is narrow, therefore differentiating applicants is limited.<sup>12</sup> These weaknesses, however, have not discouraged most professional programs from using GPA as a main predictor because many researchers agree that using GPA is a logical predictor of success since past academic achievement is indicative of future

academic success. Undergraduate GPA may be better used to more appropriately eliminate students who will not succeed in the rigors of the curriculum. Numerous studies have been published regarding use of GPAs.<sup>1,12</sup> One study of general graduate students found that higher GPA was more predictive of graduate academic success and low GPA was less predictive of graduate academic success. Another study suggests that undergraduate academic performance is not a good predictor of clinical performance on the graduate level.<sup>1,12</sup>

Graduate programs are increasingly using standardized test scores as predictors of success. Standardized tests have been tried to be highly suitable for national administration for multiple disciplines.<sup>4</sup> These standardized tests measure scholastic competence under secure conditions. Though GPA and standardized test scores are analyzed separately, studies done on physician assistant, medical, dental and general graduate students have shown that using both predictors is more accurate than using either alone.<sup>1,3,4</sup> The GRE scores have the most valid predictions of success for general graduate students.<sup>4</sup> The MCAT test screens out low scores of the individuals who would most likely have academic difficulty in medical school.<sup>13</sup> Medical College Admission Test scores generally have shown lower correlations than GPA with basic science performance and little or no correlations with clinical performance.<sup>13</sup> Standardized test scores suggest intellectual achievement and are of great importance in the selection of PA students.<sup>14</sup> Physical therapy programs typically do not use standardized tests but when they are required, the most common tests used are the SAT, ACT, GRE and the AHPAT.<sup>7</sup> One study involving physical therapy and physician assistants suggest GPA, science GPA

and written essay are predictive of academic performance and in-person interviews seem to correlate with clinical performance.<sup>7</sup>

Though few researchers have examined the in-person interview with success in the medical profession, many graduate programs continue to use in-person interviewing. There are two types of interviews. There is an individual interview involving one prospective applicant and a group interview involving two or more prospective applicants. In regards to interviewing, qualitative variables for selecting candidates ensure greater professionalism among future health care workers. Personal interviews get at positive personal traits of maturity, motivation, rapport, compassion, respect, and integrity and may be related to clinical performance.<sup>7</sup> In 2002, a study completed by Sandow et al, examined dental school applicants. The study demonstrates that applicants are evaluated by several faculty members for the interview and assigned a number, which depicts the success of the interview. The scale ranges from 0-30 (0 = unacceptable; 30= outstanding). These scores are then averaged to get a final value. Applicants are further measured on their professional demeanor, maturity, health related experience, clarity of expression and motivation. The lack of correlation between the interview and academic performance in pre-clinical curriculum improves as the dental students progressed through the clinical training. The study by Puryear and Lewis found the admissions interview ranked second in importance to GPA in the selection of medical students.<sup>8</sup> In another study by Hoschl et al, medical school applicants are interviewed on a 5-point scale. (5= insufficient; 1= excellent). The applicants' personality structure is noted with motivation as well as social maturity. These qualities were significant predictors of success during the first 3 years of medical school.<sup>15</sup> In the Levine et al study, physical

therapy programs interviewed applicants individually for over ten years. The interviews were time consuming and did not give a satisfactory indication of the applicants' interpersonal skills so the interviews were changed to group interviews. This gave the faculty the chance to evaluate the applicants' interactions in a group of their peers. Neither type of interview produced scores that could correlate with academic and clinical performance in the physical therapy program. However, there were limitations for using the interviewing process when comparing applicants. Interviews rarely included standardized questions and the differences in the interviewing process attributed to the difference in prediction of success. As with standardized testing, the in-person interview was much more accurate at predicting success when using it in conjunction with GPA.<sup>3</sup>

Health care experience is the least understood predictor studied for success. The Corvitz et al study examined physician assistant candidates and surprisingly found that the amount of students' previous health care experience did not relate to success in the program.<sup>14</sup> Applicants for dental school showed an increase in their interview scores when they had previous dental related experience.<sup>3</sup> Nursing students also performed better overall on their board exam when the amount of health related experience increased.<sup>7</sup>

The last predictor of success studied is the letters of recommendation required by many professional colleges. Questions have been raised regarding the reliability and limitations of both in person interviews and recommendation letters. In 2002, a study by Downey et al, reviewed dental hygiene students regarding the usefulness of recommendation letters since most candidates provide only the positive recommendations from known sources.<sup>8</sup> Approximately one third of all dental hygiene programs have

dropped the requirement of letters of recommendation and personal interviews in their admissions criteria because of their lack of predictability.

### *Methodology*

#### *Design and Subjects*

A retrospective study design was conducted on Wichita State University PA student's NCCPA examination scores. Applicants included for study were those interviewed for admission in the classes of 1991-1996 and those not interviewed from 1997 - 2002. Therefore, a comparison in student outcomes on the NCCPA exam and graduation rate was sought between 1991-1996 and 1997- 2002. The WSU PA program suspended interviews in 1996 and reinstated them in 2004. The study subjects included PA graduates from 1991 – 1996 who served as the interviewed cohort of graduates and the graduates from 1997-2002 served on the non-interviewed cohort.

#### *Data Analysis*

Each study group was subject to descriptive and parametric statistics. The alpha level was set at 0.5. To assist in managing the data, results of the descriptive statistics were used as an essential first step in understanding the results and moving to the inferential methods used to test the implied hypothesis of the study. An independent sample t-test was used to evaluate if there was a significant difference in the interview group and non-interviewed group's NCCPA scores.

#### *Measures*

For the graduates in the classes who were interviewed for admission in 1991-1996, the NCCPA exam score means were calculated by averaging the multiple choice questions (MCQ), clinical skills problems (CSP), and the primary care extended core



The mean of each cohort group was similar. The mean for the interviewed cohort was 496.67 (SD +/- 28.54) and the mean for the non-interviewed cohort was 474.33 (SD +/- 15.28). There was no statistical difference between the two groups (Table 3).

Table 3

## Independent Samples T-Test

Group	N	Mean	Std. Deviation	Std. Error Mean	Std. Error Difference	95% Confidence Interval	Sig.*	Equal Variances Assumed Sig.+	Equal Variances Not Assumed Sig.#
Interviewed	6	496.67	+/-28.54	11.65	12.722	-10.37 to 55.04	0.1395	0.1220	0.1313
Non-Interviewed	6	474.33	+/-15.28	6.24					

\* Not significant

+ Not significant

# Not significant

*Discussion*

It has been well documented that many professional college programs use specific predictors of success as criterion in the admissions process. Grade point average, standardized tests, health care experience and letters for recommendation have been previously used due to their proven importance and reliability as good predictors. The in-person interview has been widely used in many professional college programs but there is little information analyzing whether they make a difference. Specifically, the WSU PA program reinstated the interview process in 2004 as they transitioned their program to the graduate level. In doing so, this allowed for an opportunity to evaluate retrospective student data in terms of whether interviews (in the past) made a difference on NCCPA examination scores. The findings of this study demonstrate that the interview made no difference in aggregate NCCPA examinations scores.

### *Limitations*

This study was limited by the number of cohort groups. The study was also confined to a local population and the cohort groups were selected in a nonrandom fashion. Another limitation was how the NCCPA mean scores were calculated. In the interview cohort, the NCCPA exam scores were calculated by averaging the MCQ, CSP, and the PCECE scores. For the non-interviewed cohort, the NCCPA exam score means were reported as they were listed on the score report. Therefore, these limitations are major threats to statistical conclusion validity.

Many other variables used as admissions criterion were not measured. Grade point average, standardized tests scores, age, health care experience, and recommendation letters were not measured. Grade point average was one of the leading predictors of success in the majority of articles reviewed. Standardized test scores were another important variable when predicting success. Age, health care experience and recommendation letters were good predictors when used in conjunction with GPA or with standardized tests scores. It is difficult to assess the actual success of the in-person interview without including the variables of GPA, standardized test scores, age, health care experience and recommendation letters.

The findings of this study, compared to the literature review, were very similar depending on how the interview was used in the admissions criterion. However, this study demonstrated that there was no difference in graduates NCCPA board scores in the interviewed and non-interviewed cohort groups. Predictability was not measured. The literature review demonstrated that the interview was not a reliable predictor of success when used alone. However, the literature reviewed did show the success of using the



interview in the admissions criterion in conjunction with undergraduate GPA or with standardized test scores.

### *Conclusion*

Individuals, especially physician assistants, planning a medical career must meet specific program requirements if they want to be a competitive applicant for their prospective programs. Grade point average (GPA), standardized test scores, health care experience, and in-person interview are the main criteria used in the admissions process. Successful completion of the NCCPA exam and completion of the PA program of study are requirements for every PA if they desire to work as a licensed PA. This study did not demonstrate that the interview made a difference on NCCPA mean scores, but further research is warranted on a wider scale, where other variables are included and possibly tested for predictability.

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