

Physician Assistant Students' Attitudes Toward International Experiences

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Purpose: This study assesses physician assistant (PA) students' interest in international experiences. A white paper from the Physician Assistant Education Association (PAEA), formerly the Association of Physician Assistant Programs (APAP), "A Report on the Findings of the Ad Hoc Committee on International Physician Assistant Education," recommends that the profession "explore the motivation for students' international experiences." In partial fulfillment of that objective, we examined the association between first-year PA students' attitudes toward international experiences and student demographic characteristics, type of PA school attended, and prior student experiences.

Methods: A convenience sample of 12 PA programs (one public and one private school in each of six US geographical regions) received surveys to distribute to their first-year students. Eleven programs returned 482 completed surveys. **Results:** A sizable majority of the students, 59.8%, indicated interest in international rotations. PA students with prior health care experience or prior international experience as a volunteer in missions work (faith-based or secular), or studying abroad were more likely to show interest in international rotations. Student interest in other languages and cultures, single marital status, and lack of dependents also correlates positively with increased interest in international experiences. Student self-perception of spirituality, valuing the humanitarian mission of the PA profession, and prior international military experience do not correlate with interest in international rotations. **Conclusions:** PA students' interest in and participation in international rotations may affect the rapidly evolving globalization of the PA professional model.

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INTRODUCTION

The purpose of this study was to assess first-year PA students' perceptions of international educational experiences. The researchers asked whether there is an association between first-year PA students' attitudes toward international experiences, demographic characteristics, type of PA school attended, and prior domestic and international student experiences.

Over the past 40 years, PAs and other nonphysician clinicians have become part of the solution addressing domestic shortages in the health care workforce. However, markedly greater shortages remain internationally, especially in developing and third world countries. The PA profession is clearly continuing to evolve and is now expanding outside the United States into the international

arena and has the potential to affect international health care and become a significant force for change in improving world health.

Two organizations playing significant roles in facilitating the international expansion of the profession are the Physician Assistant Education Association (PAEA, formerly the Association of Physician Assistant Programs, APAP), and the American Academy of Physician Assistants (AAPA).

In 1999, APAP formed an international special interest group, which eventually became the Ad Hoc Committee on International PA Education. In 2002, the committee sent surveys to 130 PA program directors to assess the extent of current international educational activities.^{1,2} Over half of the 72 responding programs indicated involvement in

international activities and faculty respondents perceived that international rotations equipped students with a broader cultural competence, exposure to global medicine, use of different languages, and an understanding of short- and long-term medical missions work. The data revealed that foreign countries benefitted from these exchanges as well, gaining increased medical knowledge, contact with western medicine, health education, and English skills.¹

The committee has also suggested several benefits of international rotation participation, among them: exposing students to disease management experiences unavailable in the United States, enhancing students' cultural insights, and giving students the opportunity to practice medicine in underresourced environments. Since 2005, surveys by the PAEA International Affairs Committee (IAC) have shown that the proportions of programs and faculty members taking part in international rotations are steadily increasing.³ PAEA's developing relationships with Global Health Education Consortium (GHEC) and the Association for Medical Education in Europe (AMEE) are further indicators that globalization of the PA profession is an increasingly important aspect of PA training.

Over the past decade, the AAPA has also been working to expand the profession internationally. The AAPA Committee on International Affairs collects and assesses data on PA activities in foreign countries and also posts international opportunities for work, volunteer, and student rotations.^{4,5} In 2001, the AAPA adopted guidelines for PAs working in foreign countries. These guidelines state that "PAs should establish and maintain the appropriate physician-PA team; accurately represent their skills, training, and professional creden-

tials; provide only those services for which they are qualified; respect the culture, values, beliefs, and expectations of the patients, local health care providers, and local health care systems; take responsibility for being familiar with the customs, laws, and regulations of the country; and identify and train local personnel who can continue the education process."⁴

The PA Profession Abroad

Over the past decade, the globalization of the PA profession has been extending to the development of home-grown PA-like professions in many countries. The Netherlands now has two PA programs. The United Kingdom is completing a pilot program utilizing US-trained PAs and is developing training programs for the Medical Care Practitioner (MCP), the United Kingdom's professional designation for a PA-like provider. Though the profession has existed in Canada for much longer, PAs have been formally training in the Canadian military for the past 15 years and are seeking ways to enter the civilian health care workforce. Universities in several other countries, such as Australia, China, Ghana, India, Lesotho, Liberia, Malaysia, Papua New Guinea, South Africa, Taiwan, and Thailand, have either established or are pursuing the establishment of PA programs.¹

And US-trained PAs continue to work abroad. Despite some difficulties, US PAs have been reported working in the Aleutian Islands; US embassies in Monrovia, Liberia, and Sarajevo; Bosnia, Russia, Asia, South Africa, and many other countries.⁶⁻¹⁰ The increasing role of PAs in providing health care in the Army, Air Force, Coast Guard, and Navy, together with the United States military presence around the world, will also continue to help integrate PAs into the international medical community.

Among PAs who have managed to travel to foreign countries as medical providers, a common theme emerges. First, it is always difficult and frequently impossible to order similar tests to those used in the United States and administer the same medicines. However, perhaps more important than the actual medical aid rendered are the effects on worldview and life changes these trips have on participants. Many PAs who experience short-term medical missions report how lack of clean water or overhead lights provoke cultural and personal self-examination. Medical mission experiences often have life-long impact on clinicians.

As PAs place a higher value on globalization of the profession, it becomes increasingly important for more students to participate in international rotations. A study by Hooker examined factors influencing PA career choice specialties. Not surprisingly, factors contributing to PA career choice decisions were similar to those contributing to the career choices of physicians. The two most important influencing factors in physician choice of practice type and location were specific experiences during clinical training and the availability of practice opportunities in the health care marketplace.¹² Therefore, it may be appropriate to extrapolate these findings to PAs: Increasing international rotation and employment opportunities may also stimulate professional expansion beyond the United States.

METHODOLOGY

This study combines topics presented in the Pedersen survey on program participation in international affairs² with elements in Hooker's report¹² on career choice specialties. The goal of this study was to describe first-year students' attitudes toward and perceptions of international experiences.

This survey assessed major areas that may influence the decisions PA students make regarding participating in foreign rotations or experiences: demographic characteristics, previous foreign experiences, personal values, spirituality, medical practice, financial factors, international interest, and rotation influence.

The first portion of the questionnaire employed a five-point Likert scale: categories were strongly agree, agree, neutral, disagree, and strongly disagree. The second part collected demographic information: age, marital status, number of dependents, and gender. The final question explored the PA student's exposure to international environments before entering PA school, such as studying abroad, mission work, volunteer work, and military experience. Students responding positively to the last question were given an opportunity to describe their international experiences in a free response format.

Students from PA programs in both private and public colleges and universities in six regions of the United States completed surveys during the fall and winter, 2003-2004. Since the researchers selected the programs based on familiarity with the program and program faculty members, rather than randomly, the sample was a convenience sample. The selected schools, along with their US region, are shown in Table 1.

The PA Program's Master's Project Committee and Midwestern University Institutional Review Board approved the project proposal prior to any contact with the selected schools. The Research Review Subcommittee of the PAEA Research Institute also approved the study.

An e-mail sent to the selected program directors solicited program participation in the survey. The e-mail informed each director of the

purpose of the study, included the survey as a Word document, and assured participants that responses would be anonymous and without identifiers. Eleven program directors replied, agreeing to participate in the survey. They then received a self-addressed envelope, a cover letter with survey distribution instructions, and copies of the survey for their first-year students. Students were permitted to leave any item unanswered if they chose to do so. Directors were allowed three months to return the surveys from their students. Finally, SPSS 12.0 was used to analyze the data.

RESULTS

Program directors from 11 of 12 schools invited to participate in the survey sent back a total of 482 completed surveys out of a possible 536, for a response rate of 89.9%.

Demographic data revealed that the mean age of respondents was 27, with a range of 20 to 57. Most of the students (82.5%) were aged 20-30; 12.5% were aged 31-40, and 5.6% were 41 or older. Three-quarters of respondents (74.7%) were female and 25.3% were male. Most of the respondents (68.2%) were single, 29.1% were married, and 2.7% were self-described as "other." Most (77.0%) respondents had more than 1 year of health care experience before entering PA school; 23% were unsure or had less than a year of prior health care experience. The large majority of students surveyed (86.9%) did not have dependents.

Table 1 summarizes the proportion of students in each of the 11 programs surveyed that reported they either agreed or strongly agreed they were interested in an international rotation. Table 2 summarizes students' attitudes regarding other aspects of international rotations: commitment to PA values, interest in

international rotations, school selection, spirituality, second language skills, international health classes, job influences, cultural interests, and cost of international rotations.

A minority of respondents had participated in international experiences before entering PA education. These experiences broke down as follows: study abroad, 19.1%; overseas missions work, 14.1%; international volunteer work, 12.9%; overseas military experience, 2.1%.

The researchers looked for possible differences between characteristics using a Chi-squares analysis, with $p < 0.01$ regarded as significant. Table 3 gives a summary of descriptive statistics.

CONCLUSIONS

This study clearly demonstrated that demographics and prior experiences may influence the attitudes and perceptions students display concerning international experiences. Location of rotations, choice of school, and school location may be equally important contributors to the mindset of PA students in their decisions about international experiences.

Some of the other findings in this study parallel the factors that influenced PA career specialty choices as described by Hooker.¹² Married students and those with dependents were less likely to be interested in international rotations, in international health classes, and in learning about other languages and cultures. This may be due to added responsibilities and/or financial considerations. Older PA students were also less likely to indicate an interest in international clinical experiences. Women were more likely than men to display an interest in international experiences. This may result from differing social roles between genders or simply from male respondents being older, having more depend-

Table 1. Percentages of Students Interested in International Rotations, by Program

PA Program (region)	Student Surveys (n)	Private School	Public School	Interest in International Rotations
Baylor University (H)	16	X		81.3%
George Washington University (E)	50	X		60.0%
Lock Haven University of Pennsylvania (E)	38		X	50.0%
Midwestern University, Downers Grove (MW)	82	X		67.0%
Midwestern University, Glendale (W)	71	X		73.2%
NOVA Southeastern University (SE)	76	X		40.0%
SUNY Downstate Medical Center (NE)	26		X	30.8%
University of Iowa (MW)	24		X	66.0%
University of Nebraska (H)	39		X	43.6%
University of Utah (W)	30		X	89.7%
Yale University (NE)	30	X		56.7%
Totals	482	6	5	

NE = Northeast, E = East, SE = Southeast, H = Heartland, MW = Midwest, W = West

Table 2. Summary of Students' Attitudes Towards Other Aspects of International Rotations

	Strongly Agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly Disagree (%)
I place a high value on the PA mission statement	53.2	37.0	9.2	0.4	0.2
I am interested in an international rotation	30.2	28.8	24.0	10.6	6.5
My choice of PA school was influenced by where I want to do PA rotations	16.8	30.8	27.9	18.3	6.2
I consider myself a religious/spiritual person	36.7	35.0	17.7	6.7	4.0
I consider myself fluent in another language	11.1	9.6	11.9	33.1	34.3
I am interested in a class geared toward international health issues	18.3	34.9	32.8	10.0	4.0
I feel that my PA rotations will influence where I work	42.2	44.3	10.4	2.5	0.6
I am interested in learning another language/culture	38.7	41.8	15.0	2.9	1.7
I would consider an international rotation only if expenses were covered by someone other than me	16.3	27.3	30.4	18.5	7.5

ents, and therefore having less freedom to travel.

Students with prior health care experience were more likely to display an interest in international rotations and international health classes. Unfortunately, the study failed to examine the reasons that individuals with prior health care experience were more likely to show interest in international experiences. This is an important topic for further investigation.

Prior experiences in study abroad activities, mission work, and volunteer projects were also associated with student's greater interest in international rotations. However, students with prior overseas military experience were less interested in international rotations. The fact that international military experiences are often mandatory and dangerous may negatively influence those with military experience against seeking future international experiences. Since most other types of prior international experience positively influenced PA students' attitudes, it may be instructive in the future to ask why international military experiences negatively influence attitudes.

No significant relationships between interest in international experiences and professionalism, spirituality, language fluency, or finances were found. An important tenet of the PA profession's humanitarianism (referred to in the survey as the "PA mission statement") is caring for those in need; however, no significant differences were found between placing high value on the PA mission statement and showing interest in international rotations or international health classes. These findings were unexpected, considering the influencing factors cited in Hooker and Pedersen's studies.^{2,12} Unfortunately, the survey item regarding the importance of the PA

Table 3. Summary of Descriptive Statistics, Using Chi-Squares Analyses

Compared Values	Relationship
Age and Healthcare Experience	No relationship
Gender and Marriage	Male gender more likely to be married *
Gender and Dependents	Male gender more likely to have dependents *
Gender and Age	Male gender more likely to be older *
Mission Statement and International Rotations	No relationship
Healthcare Experience and International Rotations	Those with prior healthcare experience were more likely to show interest in international rotations. *
School Selection and Rotation Options	Students were more likely to choose a school where they wanted to complete rotations. *
Expenses and International Rotations	Students were more likely to show interest in international rotations if money was not an issue. *
Expenses and Type of School	Expenses of international rotations were less an issue for students attending public institutions. *
International Rotations and Other Cultures	Students interested in other languages/cultures were more likely to show an interest in international rotations. *
Classes and International Rotations	Students interested in international health classes were more likely to show an interest in international rotations. *
Spirituality and International Rotations	No Relationship
Type of School and International Rotations	Students attending private schools were more likely to show an interest in international rotations. *
School and International Rotations	Students attending the University of Utah were more likely to show an interest in international rotations. *
Region and International Rotations	Schools in the Western region were more likely to show an interest in international rotations. *
Prior International Experiences and International Rotations	Students who had prior experiences in study-abroad, missions work, and volunteer projects were more likely to show an interest in international rotations. Students with prior military duty were not. *
Marriage and International Rotations	Single students were more likely to show an interest in international rotations. *
Dependents and International Rotations	Those without dependents were more likely to show an interest in international rotations. *

*Statistically significant correlations, $p < 0.01$

mission statement was vague. Therefore, drawing conclusions is difficult and future surveys would benefit from clarifying this item.

Likewise, no statistically significant relationship was found between spirituality and interest in interna-

tional experiences. Most respondents (71.7%) described themselves as spiritual, but religious values did not appear to influence students' interests. Since many medical missions and rotations are faith-based, there is an important question: How are stu-

dents' interests in international rotations affected by the faith-based nature of an international rotation? A weakness in this study was the failure to ask this question.

Financial factors were associated with levels of interest in international

rotations. Students reported that they were more likely to show an interest in international rotations if a third party paid expenses.

Students with higher self-perceived levels of fluency in second languages were more likely to show interest in international rotations, most likely because of prior experience with other languages and cultures. Students interested in other languages and cultures were likewise more apt to show an interest in international rotations and international health classes. Since 80.9% of students expressed interest in learning about other languages and cultures, it is surprising that only 60.0% expressed a high interest in international rotations. Although a large majority reported interest in learning about other peoples, only 43.2% wished to participate in classes with an international health emphasis.

It is tempting to give weight to regional and private vs. public school comparisons in this study. Students in schools in the Western region, especially the University of Utah, were more likely to show interest in international rotations. Students attending private schools were more likely to show interest in international rotations. However, there was a convenience sample selection bias in the 11 schools selected. The researchers selected programs with directors they were acquainted with, which may have been schools that placed more emphasis on participation on international rotations. At first glance, 482 completed surveys appear to be an adequate number of subjects for drawing statistical conclusions. However, in addition to selection bias, only six private schools and five public schools participated. Therefore, the results may not be applicable to all PA programs and students. Future studies would bene-

fit from selection that is random and increases the number of programs and students participating.

Survey results revealed that where a PA student wanted to perform clinical rotations had an influence on the student's decision on which school to attend. This implies that students who want to perform rotations abroad are more likely to choose a school that offers international rotations. With 86.5% agreeing or strongly agreeing that PA rotations would influence job selection, international rotations can be an important way for students to discover if they are interested in an international career.

Since a large majority of students agreed that rotations would influence where they work after graduation, if the PA profession is interested in further globalization it may benefit from encouraging more students to participate in international rotations. Although single students without dependents are more likely to go abroad for rotations, all students should receive the same opportunities.

Many questions remain: Why is there such low correlation between prior overseas military experience and interest in international rotations? Are faith-based international rotations an appropriate and beneficial learning experience for nonreligious students? What additional insight would emerge from assessing the attitudes and beliefs of second-year PA students after an international rotation?

As the number and role of PAs continue to expand in the United States, the global participation and influence of the profession may also continue to grow. Shedding light on some of the factors associated with PA students' interest in international experiences may assist the PA profes-

sion as it continues its journey. With characteristic hard work and passion, the PA profession may continue to expand internationally in scope and influence, and thus fill a unique and integral role in improving world health.

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