Physician Assistant Student and Faculty Perceptions of Physician Assistant Residency Training Programs

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Introduction: Despite their existence since the 1970s, little is known about perceptions of and attitudes toward physician assistant (PA) postgraduate residency training programs. The purpose of this study was to evaluate PA student and faculty awareness of and opinions concerning these programs. ***Methods:*** Surveys containing demographic and opinion questions were sent to 9 PA programs (3 each from the eastern, central, and western United States). Within each region, an associate's- or certificate-, bachelor's-, and master's-level program participated, and 476 junior and senior PA students and 40 faculty members responded. ***Results:*** Although most students (89.3%) were aware of residency training programs, results indicated that few (7%) had definite plans to attend. Two-thirds of students stated that they received no information on residency training programs at school (journal ads were the most popular information source). Student perceptions of residency training programs were mixed. Their opinions varied according to their program level ($p<0.03$) and intended region of future practice ($p<0.007$). Additional significant variables related to student perceptions included student graduation date, age, and gender. However, these factors were not as significant as geographic region of intended practice and degree level. ***Discussion:*** Although only one-third of students reported receiving material or information related to residency training programs from their faculty, two-thirds of faculty respondents stated that they provide students with residency information. Of those providing information, only 32.5% of faculty stated that they actually encourage their students to attend postgraduate training. Like their students, faculty members had mixed positive and negative perceptions of residency training programs. ***Conclusions:*** This pilot study revealed that although most students were aware of PA residency training opportunities, few actually planned to participate (nor were they encouraged by faculty to do so). This may be partially explained by the mixed feelings that respondents (both faculty and students) had concerning the value of residency training programs. This result is consistent with the finding that neither students nor faculty believed that residency training should be a requirement for the PA profession.

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Introduction

Since their inception more than 20 years ago, physician assistant (PA) residency training programs have steadily grown in number and scope.[1-2] There are currently 20 PA postgraduate residency training programs encompassing 12 specialty areas, according to the Web site of the Association of Postgraduate PA Programs (APPAP). With recent trends towards PA specialization, combined with the decreased number of residency positions available for physicians,[2-3,6-7] PA residency training has become a topic of increased interest.

Little has been published concerning PA student awareness and perceptions of PA residency training programs, and no studies have utilized the same questionnaire to allow for comparison of student and faculty opinions. Studies evaluating factors influencing the practice choices of medical students, whose medical education shares features with PA training, may provide insight as to what variables affect PA student practice choices,

including the decision to attend residency programs.[4] Some significant factors found to influence medical student career choices include: practice characteristics, specialty interest prior to medical school and its compatibility with personality and abilities, intellectual and academic challenge, and required clerkship training.[8,9] This is consistent with the previous finding that PAs intending to pursue advanced degrees do so mainly for career advancement and personal fulfillment.[5] Financial factors were not significant issues in these studies.

Another field with optional residency training is pharmacology. A study of pharmacology students participating in elective residency training programs indicated that they did so to gain specialty education and to learn about new roles within a specialty.[10] Verhoeven's 1998 study of first-year PA students indicated that they believe that residency training can be a pathway to gain specialty experience as well.[7] Perceived negative aspects of residency training among the PA students in that study included adverse financial impact during residency, undergoing an additional training year, and the belief that the knowledge and training gained at PA school are sufficient for practice.

Faculty views of PA residency training may influence their students' perceptions of those programs. Many PAs believe that residency training provides excellent training opportunities and increased personal marketability.[2,5,7,11,12] However, others are concerned that the profession is losing its primary care focus.[4-5] The authors suspect that faculty members see similar advantages to participating in residency programs and share some concern that specialized residency training may contribute to decreased interest in primary care among PA students. The intent of this research study was to evaluate (1) PA student awareness and opinions of residency training programs, (2) PA faculty perceptions of residency training programs, and (3) factors which influence those perceptions.

Methods

Initial demographic and opinion topics for the survey were reviewed by program faculty. After approval, they were put into questionnaire form and again evaluated by PA program faculty as well as residency program faculty and other experts. Recommendations from all of these groups were used in the final version of the survey to ensure relevancy.

The selection of subjects for this survey was designed to gather information from students and faculty who would be a representative sample of all students and faculty in the United States. The list of all PA programs was divided into three geographic regions: eastern, central, and western. Within each region, programs were again divided into three groups: those granting a master's degree, those granting a bachelor's degree, and those granting an associate's degree or certificate. One program was selected from each of the 9 final groups. (Programs affiliated with residency training sites were excluded.) The program director was contacted and asked to participate in the study. Surveys were then sent to each of these 9 programs for both students and faculty to complete.

The number of surveys returned totaled 476 from students (226 junior and 250 senior) and 40 from faculty. Comparing this to the number of students and faculty reported by each program's Web site, the response rate was approximately 90%. Similar demographic and opinion questions were asked on both the faculty and student surveys to allow for comparison of the results. Descriptive, univariate, and multivariate methods were utilized in the data analysis (see Tables 1–3).

Table 1

Descriptive and Demographic Student Responses

Responses per region:
- Eastern—181
- Central—152
- Western—143

Average clinical experience prior to PA school:
- 50.7 months (range: 0–312)

Percentage of students according to program level:
- Certificate—14.4%
- Associate's—23.10%
- Bachelor's—28.78%
- Master's—34.6%

Gender:
- Female—61.1%
- Male—38.7%

Age of students surveyed:
- <30—47.0%
- >30—53.0%

Percentage aware of postgraduate residency programs:
- 89.3%

Students given information concerning postgraduate residency programs at school:
- 33.8%

Additional residency program information sources used (number of responses):
- Web site—112
- Mailings—128
- Mentor—40
- Colleagues—136
- PA group—64
- PA faculty—96
- Prof meetings—21
- Journal ads—192

Students planning to complete a residency program:
- Decided—7%
- Undecided—49.6%

Preferred timing of residency training:
- Immediately after graduation—60.6%

Results

Demographically, this sample of student participants was reasonably consistent with those in the AAPA's 1997 enrollment survey[1] (questionnaires were completed in 1998) in terms of age, gender, and prior clinical experience, although more students in this study (20%) had no clinical experience

Table 2

Descriptives and Demographics Faculty Responses

Total faculty responses:

40

Clinical experience prior to PA school:

Mean 40.8 months (range: 0–192)

Mean time since faculty graduation from PA school:

14 years (range: 3–25)

Highest degree obtained by faculty (if applicable):

BA/BS—12
MA/MS—16
Doctorate—5
Not answered—7

Number of faculty who participate in clinical practice:

31

Faculty from programs affiliated with post-graduate residency sites:

0

Faculty who completed postgraduate residency:

1

Faculty who provide their students with information concerning postgraduate residency programs:

27

Faculty who encourage students to consider attending residency programs:

13

Suggested timing of residency program completion (only 15 responses):

Immediately after PA program graduation—100%

Table 3

Opinion Questions with Statistically Significant Differences Among Independent Variables

Opinion	Variables
Residency training increases salary levels	Intended Practice Region p<0.01* Degree Level p<0.001*
Future employer will require residency	Graduation Date p<0.01** Degree Level p<0.05*
Residency provides good research opportunities	Degree Level p<0.01*
Residency program will help determine interest in specialty	Graduation Date p<0.01** Intended Practice Region p<0.0002*
Residency helps to obtain advanced degree	Gender p<0.04** Degree Level p<0.0001*
Residency should be required for PAs	Degree Level p<0.04*
Residency training equal to on-the-job training	Student Age p<0.005** Intended Practice Region p<0.008* Degree Level p<0.0008*
My faculty believe residency gives valuable training	Student Age p<0.005** Degree Level p<0.0008*
Residency training gives no salary increase	Degree Level p<0.01*
More likely to attend a residency if it is formally accredited	Degree Level p<0.01*
Total score for all opinion questions	Student Age p<0.05** Intended Practice Region p<.007* Degree Level p<0.03*

* Kruskal-Wallis One-Way ANOVA
** Mann-Whitney U-test

prior to enrolling in PA school than those in the AAPA survey (13%). The number of surveys received from programs in the east (181 students) was slightly higher than from the central (152) or western (143) regions, however there are more PA students in the east than elsewhere, so the sample mirrors the larger population.

Although only one faculty respondent completed a residency training program, most (78%) reported that in addition to their academic duties, they still participate in clinical practice. Most faculty (67%) stated that they provide their students with information on residency training, although only a third (32.5%) reported that they actually encourage students to attend these programs.

Results indicated that 89.3% of students surveyed were aware of the existence of PA residency programs. Among students, journal ads were the most widely used residency program information source, followed by information given at school, then by information from colleagues, and finally from direct mailings. Only 7% of respondents planned to complete a residency program, while 50% were undecided about whether they would participate in one. Only 43% were certain they would not pursue postgraduate training.

Students indicated that emergency medicine far outranked other fields as the top specialty choice for residency training, followed by general surgery and family practice. Chi-square analyses showed that student awareness of residency training programs varied according to their program level ($p<0.0252$) and program geographic location ($p<0.0001$). In addition, results showed that student perception of residency training differed significantly according to factors such as individual school, geographic region of intended practice (overall score $p<0.007$), and degree level (overall score $p<0.03$) of PA

program. Variables that showed significant, but less widespread, influence included graduation date, student age, and gender. Amount of clinical experience was not found to be significant with respect to awareness of, or plans to participate in, residency training.

Discussion

Although most students were aware of the existence of residency training programs, there was a discrepancy in this according to geographic region. Students in western programs were less likely than those from other regions to know about residency training programs ($p<0.0001$). One factor which may account for some of this variation is that fewer students from western schools (15.82%) reported being given information on residency training programs at school than did students from the eastern (30.56%) or central (54.67%) regions. Additional factors which may contribute to this discrepancy include having fewer PA and residency training programs in the western region, differences between the specific schools sampled, and variability in the use of outside information sources by students.

Only 7% of students surveyed planned to attend residency programs. Current figures show approximately 9,000 students (4,500 seniors) are enrolled in PA education nationwide, and 7% of this total represents a little more than 300 applicants per year. Another 50% of students indicated they were undecided. If this undecided half were to decide to pursue residency training, the number of applicants would be in the thousands. This far outweighs the number of residency training positions available each year (approximately 75).

Students' uncertainty about residency training is likely due to their mixed beliefs about its efficacy. Student responses indicated that residency programs would provide good opportunities to determine whether they enjoy a particular specialty and to network, while not limiting their future job choices. Students also responded that the PA profession would benefit from additional residency programs, and indicated that they would be more likely to attend if the program was accredited. However, students did not believe that residency training should be mandatory in order to practice in a particular specialty as a PA. This is consistent with their overall response that on-the-job experience provides equally as valuable training as that attained from residency programs.

Students from master's-level programs were less likely to plan to attend residency programs than those from associate's programs ($p<0.0004$). Several findings of differences in perceptions of residency programs according to program level may explain some of this variation. For example, associate's-level students generally had a more positive perception of residency programs and were more likely to plan to attend one than were students from other program levels. Associate's degree program students were also more likely to receive information on residency training programs than their peers enrolled in programs of other levels. In addition, students from master's-level programs generally held a more negative opinion of residency training. Although there may be many explanations for these trends, one issue may be the ongoing controversy over whether graduate degrees should be required for PAs. It is possible that students from associate's degree programs are more likely to view residency training as a positive educational tool in comparison to students in master's programs, who may believe that their advanced degree will provide job marketability and security that is equal to or better than residency completion.

The authors had initially theorized that students with more exposure to residency programs would be more likely to plan to attend one. Since there are more residency training programs in the eastern region than other areas, it was felt that students planning to practice there might have more positive attitudes towards them. However, results indicated that students intending to practice in the eastern region were more negative in their perceptions of residency programs than students planning to practice in the central or western regions ($p<0.0268$, $p<0.0022$, respectively). Specifically, students planning to practice in the eastern region were more likely to believe that on-the-job training provides as good an educational experience as residency training, that residency training does not increase future salary levels, and that residency training is not a good way to determine individual compatibility with a specialty. It is difficult to evaluate any relationship this may have to amount of exposure to residency training programs, since information sources outside of school were so popular. Students in the eastern region were intermediate in whether they reported receiving information at school, and it is unknown whether they receive more information via mailings and other sources due to the larger numbers of residency programs in their area.

One of the major differences between the faculty and student survey responses was whether information on residency training was provided to students at school. While only about one-third of students stated that they were given information, two-thirds of faculty surveyed stated that they provided information on residencies to their students. Difference in responses could be due to students not remembering receiving information, especially if it was provided in a nonverbal format (i.e., fliers, etc.). Faculty may have also responded affirmatively to the question if they believed another program colleague routinely provides information.

Only one faculty respondent indicated a belief that residency training should be required for PAs, and only a third stated that they encourage their students to participate in these programs. This result may be explained partially by the impression of residency

training held by faculty members. Faculty members did not agree that residency training increases starting salaries or job marketability. Faculty believed that students could practice in any specialty area without completing a residency program, and that this type of training would not be required by future employers. In addition, they were neutral concerning the value of the residency training educational experience, and did not indicate a belief that the profession would benefit from additional PA residency programs. Another factor contributing to the lack of encouragement to participate in residency training by faculty may be the belief among some PAs that the profession should be focused on primary care, while most residencies are in specialty fields.[4,5]

The concepts explored in this pilot study provide a number of ideas for future research on PA residency training programs. First, a large-scale study using a validated survey instrument (preferably administered to all PA students at similar points in their training) would allow for ongoing evaluation of student perceptions so that program faculty and residency training directors could assess the influence of advising and advertising. This could also be used to evaluate student interest in specialty fields versus primary care. Results of the present study may provide some insight as to the multifaceted reasons for mixed perceptions of PA residency training by the PA community. However, the use of a nonrandomly selected sample and a survey instrument that has not been validated limits the ability to draw generalized conclusions.

There are several potential influences on PA residency training programs that would be worthwhile to evaluate in future studies. One is the impact of the student's clinical curriculum. Several previous studies of medical students indicate that the third-year clerkship training of medical students influences their residency specialty choice.[8,13-15] This may hold true for PA students as well, given the similarities in clerkship training years for both groups, and is worthy of study so that individual programs could assess how their clinical year affects graduate practice choices.

Another issue revealed in this study is that PA students obtain information regarding residency training from a number of sources besides their schools. Thus, a comprehensive study should evaluate the influence of the PA community on how students perceive residency training programs. The impact of the level of acceptance and practice privileges of PAs in a given region, as well as publicized opinions of AAPA leaders and other well-known local PAs should be studied to determine the effects of these factors on student perceptions of residency training programs.

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