

Pre-clinical Medical Students' Attitudes Toward Physical Medicine and Rehabilitation

BRYAN LE, BA; JOHN R. PARZIALE, MD

ABSTRACT

We explored pre-clinical medical students' awareness, attitudes, and understanding of Physical Medicine and Rehabilitation (PM&R). We conducted a survey of Brown University medical students within the first 18 months of training to determine their level of familiarity with the field of PM&R. Of the respondents, 53% understood the acronym "PM&R." Sixty-one percent either disagreed or strongly disagreed that they understood the patient population that PM&R serves. Thirty-four percent strongly disagreed and 44% disagreed that they would know a PM&R physician to contact either at or external to their medical school. Pre-clinical medical students may have limited exposure to PM&R compared to most other specialties, resulting in a lack of understanding and/or potential misconceptions of the field, which may influence future career choice and referral patterns. Our data suggests that medical students may have limited exposure to PM&R in the preclinical years.

KEYWORDS: pre-clinical, medical education; psychiatry, physical medicine and rehabilitation

INTRODUCTION

Exposure to a variety of medical and surgical specialties is an important aspect of medical education and impacts career choice for medical students. While there is representation and required immersion of experiences and training for medical and surgical disciplines such as internal medicine, surgery, obstetrics and gynecology, psychiatry, and pediatrics within all accredited medical schools, medical specialties such as Physical Medicine and Rehabilitation (PM&R) may be underrepresented. According to the Association of Academic Psychiatrists, PM&R is an academic department or division in 86 of the 141 American medical schools. There are 80 PM&R accredited residency programs in the United States.¹ Our study's objectives are to assess medical students' awareness and understanding of the specialty during the preclinical years.

METHODS

Pre-clinical medical students at Brown University were surveyed. Pre-clinical students were defined as students in their first or second academic year, when the majority of their education is in classrooms. Investigator-created survey data was collected and managed using SurveyMonkey, a secure, web-based application designed to support data collection for research studies. The electronic survey included 6 investigator-generated multiple choice questions, one Likert-type scale question, and one qualitative open response question. Each question probed the student's familiarity and attitudes concerning the field of PM&R. (Table 1)

All students in the first and second years of medical school were contacted (144 first-year students and 144 second-year students) via email. Surveys were distributed in January 2018; a follow-up email to non-responders was sent two weeks later. No personal identifying information was collected. The study was IRB-exempt because our primary study aim was educational to gain knowledge to aid the PM&R Department's educational and outreach efforts in exposing medical students to important clinical material.

RESULTS

A total of 77 of 288 (27%) students responded to the survey. Answering all questions was not mandatory; one study subject opted out of question 3; three opted out of question 4; eight opted out of question 5; seven opted out of question 7; thirty opted out of question 8. Of the respondents, 41 of 77 said that they knew what the acronym "PM&R" stands for, while the remaining 36 of 77 did not. Only 1 student surveyed had worked with a psychiatrist as a medical student. Six of 77 students had worked with a psychiatrist outside of the medical curriculum, but not as a medical student. A majority, 46 of 76, of the students either disagreed or strongly disagreed with the statement that they understand the patient population that PM&R serves. Approximately half (39 of 74) of respondents knew that the post-medical school career path for PM&R was a preliminary year plus a 3-year PM&R residency. More than one third (28 of 74) thought the career path was through a fellowship following an internal medicine residency. About one in ten (7 of 74) thought PM&R training required a fellowship after a neurology residency.

Table 1. PM&R Student Interest Survey

1. I know what the acronym PM&R stands for. <input type="checkbox"/> Yes <input type="checkbox"/> No
2. I have worked with a PM&R physician as a medical student <input type="checkbox"/> Yes <input type="checkbox"/> Yes, but not as a medical student <input type="checkbox"/> No <input type="checkbox"/> Not Sure
3. I understand what patient population PM&R serves <input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree
4. Which of the following is the career path of a PM&R physician? <input type="checkbox"/> 3 year Residency + 1 year Fellowship <input type="checkbox"/> 1 Preliminary year + 3 year Neurology Residency + 1 year Fellowship <input type="checkbox"/> 1 Preliminary year + 3 year PM&R Residency <input type="checkbox"/> 5 Year Surgery Residency + 1 year Fellowship
5. PM&R Physicians treat the following conditions (Select all that apply) <input type="checkbox"/> Spinal Cord Injury <input type="checkbox"/> Stroke <input type="checkbox"/> Cancer Recovery <input type="checkbox"/> Cerebral Palsy <input type="checkbox"/> Pain Management <input type="checkbox"/> Sports Medicine <input type="checkbox"/> Traumatic Brain Injury <input type="checkbox"/> Burns <input type="checkbox"/> Cardiac Patients <input type="checkbox"/> Amputations
6. If I wanted to learn more about PM&R at Brown, I know who to contact <input type="checkbox"/> Strongly Agree <input type="checkbox"/> Agree <input type="checkbox"/> Neutral <input type="checkbox"/> Disagree <input type="checkbox"/> Strongly Disagree
7. How interested would you be in learning more about PM&R? <input type="checkbox"/> 1 (Not at all interested) <input type="checkbox"/> 6 <input type="checkbox"/> 2 <input type="checkbox"/> 7 <input type="checkbox"/> 3 <input type="checkbox"/> 8 <input type="checkbox"/> 4 <input type="checkbox"/> 9 <input type="checkbox"/> 5 <input type="checkbox"/> 10 (Very Interested)
8. If you were to ask 1 question to a PM&R physician, what would it be? (Open answer)

Responses regarding students' understanding of patient populations that psychiatrists treat are summarized in **Table 2**. Regarding access to educational resources at this medical school, 60 of 77 disagreed or strongly disagreed that they would know whom to contact for educational purposes such as shadowing or research efforts. Approximately one in ten (9 of 77) of respondents were neutral, while 7 of 77 agreed and only one respondent strongly agreed. On a scale of 0–10 of interest in learning more about PM&R, with 1 representing little to no interest, and 10 representing the highest level

Table 2. Response rates regarding knowledge of common PM&R pathology.

Pathology	Positive Response Rate
Spinal Cord Injury	77%
Stroke	70%
Cancer Recovery	48%
Cerebral Palsy	61%
Pain Management	84%
Sports Medicine	77%
Traumatic Brain Injury	58%
Burns	36%
Cardiac Patients	38%
Amputations	69%

Table 3. Sample student responses to the question, "If you were to ask 1 question to a PM&R physician, what would it be?"

What is the biggest misconception about your field of practice?
How is the specialty distinct from physical therapy?
What types of experiences should I to decide if I am interested?
How do you incorporate research into your job?
What are major pros and cons of entering PM&R?
Are you happy you chose PM&R?
Do you find that it's frustrating that you can't fully cure your patients of their pain?
Is pain management a big problem in the field of PM&R especially with the opioid epidemic?
How to cope effectively (and safely) with drug-seeking behavior.
What does PM&R stand for?
What does a typical day in your office look like?
What distinguishes PM&R from internal medicine?
What patient populations do you serve?
What would you consider your "bread and butter" cases?

of interest, the average was 5.4 (SD 2.1) and the median was 6. Given the opportunity to ask a PM&R physician a question, respondents expressed a few common themes (**Table 3**).

DISCUSSION

Our results indicate that pre-clinical medical students at Brown, which does not have an academic PM&R department, had a limited knowledge of the specialty. The responses support the premise that PM&R lacks visibility to many pre-clinical students. We speculate that students at medical schools without a PM&R department or division may face greater difficulty learning about the specialty.

A national survey of the 141 American medical schools found that 39 of 75 medical schools that responded reported

having a disability awareness program. The most common reasons cited for the absence of such a program were a lack of advocacy and curricular time constraints.² The Office of the Surgeon General reported that “People with disabilities experience significant health disparities, cited the lack of provider training as a major barrier to high-quality health care for this population, and identified the training of healthcare providers as a central solution.”³ Many medical schools are transitioning to system-based education where physiology, pathology, and pharmacology are combined into relevant organ systems such as cardiology, neurology, and gastroenterology. This updated model adopted by medical schools has the potential unintended consequence of overlooking interdisciplinary specialties such as PM&R.

In the United States, some schools have made major changes in their medical education curricula to implement mandatory rotations in PM&R.⁴ Efforts have been made to create standardized rehabilitation education guidelines in medical schools, but success is often limited to the hospitals that have strong PM&R representation and resources.^{5,6} Advocacy for PM&R will also address the perceived lack of musculoskeletal education. A University of Rochester study of medical education found that required musculoskeletal instruction, at a mean of 2 ± 1 weeks, was only present in 15% (20 of 136) of medical schools.⁷ Other programs have sought community-based physiatrists to teach the musculoskeletal physical exam to pre-clinical medical students.⁸ Additionally, one school applied a problem-based learning session integrating anatomy and musculoskeletal ultrasound skills.⁹

The field of PM&R has undergone considerable growth during the past 75 years. We believe educational opportunities for pre-clinical medical students prior to the selection of a career path would support this growth and should be encouraged by medical school administrations, hospitals, curricular committees, and national PM&R organizations.

Our study design has limitations and should be interpreted with caution before generalizing to all academic medical centers and students. The survey did not include individual demographic identifiers; therefore, we cannot delineate responses between first-year and second-year medical students as well as male versus female students. Responses were limited to one school. The sample size was small and the survey response rate of 27% was low. It is possible that non-responders may be systematically different from those who respond. It is possible that survey results at medical schools that have a designated academic department and/or a PM&R residency training program would have different results. Future studies could assess how changes in the curriculum have affected students’ opinions and knowledge of the specialty in the clinical years of medical school and/or the efficacy of interventions to increase medical students’ awareness of our field. Surveys distributed more widely with a larger sample size and response rate may provide insight into what additional factors improve PM&R awareness and experiences for preclinical students.

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Authors

Bryan Le, BA, Warren Alpert Medical School of Brown University, Providence, RI.

John R. Parziale, MD, Warren Alpert Medical School of Brown University, Providence, RI.

Correspondence

John R. Parziale, MD
450 Veterans Memorial Parkway
East Providence, RI 02914
john_parziale@brown.edu