

Original Research

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Evaluation of Disability Education and Emergency Preparedness Curricula of Physician Assistant Programs

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Abstract

Objective: The purpose of this pilot study was to evaluate whether physician assistant (PA) programs in the Midwest integrate both disabilities and emergency preparedness education into 1 curriculum.

Methods: A convenience sample was utilized to survey program directors and deans of PA programs. Emails were obtained from the Physician Assistant Education Association. A 26, closed-ended question Qualtrics survey was based on an original study by Tanenhaus et al.¹

Results: Out of 43 accredited physician assistant programs surveyed, 9 programs replied (21%), and 1 program did not complete the survey. Six of the 10 programs (66%) responded that their program provided lectures specific to emergency preparedness. All 9 programs responded they do not offer a graduate-level track or concentration in emergency/disaster preparedness, and they do not offer a dual degree or a multidisciplinary program that highlights emergency/disaster preparedness.

Conclusions: This study was conducted to bring awareness to physician assistant students' education regarding disabilities and emergency preparedness. As public health crises continue to arise, such as coronavirus disease (COVID-19), it is critical to have appropriately trained health care professionals. The study revealed that most programs lack a graduate-level track or concentrations, dual degrees, or extracurricular opportunities related to disabilities and emergency and disaster preparedness.

Introduction

Addressing access and functional needs is crucial for comprehensive disaster planning for the whole community and is mandated for inclusion in federal, state, local, tribal, and territorial public health emergency plans.¹ Moreover, as the rate of natural disasters and public health emergencies is projected to increase, the need for emergency preparedness training for health care professionals is more significant than ever.¹ After the terrorist attacks in September 2001, the Association of American Medical Colleges (AAMC) suggested that disaster response training should be incorporated into the medical school curriculum.² Despite the suggestion, there is no national consensus for the emergency and disaster curriculum.^{2,3} Additionally, the concept of access and functional needs provides an inclusive approach to describing the wide array of populations who may have additional needs before, during, or after an emergency. Populations with access and functional needs may include but are not limited to individuals with disabilities.¹

A previous US medical school survey revealed that only 31% reported having any type of disaster training in their curriculum.^{4,5} From the programs that have started to incorporate the training, surveys of students displayed that only 17.2% believed that they were receiving adequate education for disasters or natural disasters.^{4,5} Health care workers are often recognized as volunteers during emergencies, yet frequently feel unprepared due to complex and unfamiliar scenarios with the proper medical response.²

Disabilities and Disability Education

As of 2016, the number of Americans with a disability was estimated to be 61 million.⁶ As the prevalence of individuals with disabilities is expected to increase, physicians will likely encounter individuals with disabilities at least once during their time of practice.^{7,8}

Currently, disability education is not a requirement for health care program accreditation or licensure, such as Physician Assistant (PA) and medical school programs.⁹ Despite repeated calls for increased coverage in health care programs about disabilities, there is still little information about the prevalence of disability awareness training.⁸ Schools that are not currently incorporating disability training have identified some common barriers. The most common barrier

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identified is a lack of advocacy for disability education in their curriculum.^{7,8} A second barrier is the time constraint in health care programs' intensive curriculum.⁸ A final significant identified barrier is the lack of proper resources to develop disability training.⁸

Some programs have started to integrate disability education to improve attitudes toward individuals with disabilities, therefore teaching inclusive patient care to their students.¹⁰ It is estimated that 20% of medical schools in the United States have incorporated disability education into their curriculum.⁸ Many medical professionals report feeling they lack the appropriate knowledge, confidence, and skills to work with individuals with disabilities and have expressed an interest in further education in disabilities.¹¹ The purpose of this study was to assess the current status of disability and emergency preparedness training in the curricula of accredited PA programs in the Midwest region of the United States.

Programs that are not currently incorporating disability training have identified some common barriers. The most common barrier identified is a lack of advocacy for disability education in their curriculum.^{7,8} A second barrier is the time constraint in health care programs which is prevalent in PA programs across the country.⁸ A final significant identified barrier is the lack of proper resources to develop disability training.⁸

Disability Education in PA Programs

According to the Accreditation Review Commission on Education for Physician Assistants (ARC-PA), the curriculum standards are currently lacking information and resources material about developmental disabilities.¹² The standards only will prepare students to provide medical care to patients from diverse populations.¹² Neither didactic nor clinical training in PA programs is explicitly required to incorporate disability training through accreditation or competency requirements.¹² Educating students on the proper communication skills and knowledge to treat individuals with developmental disabilities is not a simple task. Still, it is essential for providing the necessary care to individuals with disabilities.^{12,13} Additional program challenges may include access to a population with disabilities.¹² The lack of access would require programs to connect with providers in the community to identify individuals with disabilities. Programs could establish a relationship with a provider and send students to clinical sites to increase students' diversity awareness in the patient population.

As the number of individuals with disabilities continues to rise, the number of health care providers, specifically PAs, will increase to properly distribute health care to these individuals.¹² To better train PA students, 1 program has provided 2 multimedia virtual-patients as a clinical training tool for a patient with developmental disabilities.¹² After implementing this program, the improvement in knowledge and perceived difficulty for students was statistically significant.¹² This program only further highlights the benefit of incorporating individuals with disabilities during lectures and virtual simulations as a useful training tool among PA students.¹²

Emergency Preparedness and Emergency Preparedness Education

As the rate of natural disasters and public health emergencies is projected to increase, the need for emergency preparedness training for health care professionals is greater than ever.² After the terrorist attacks in September 2001, the Association of American

Medical Colleges (AAMC) suggested that disaster response training should be incorporated into the medical school curriculum.³ Despite these suggestive actions, currently, there is no national consensus for an emergency and disaster curriculum.³ Moreover, such events are a vivid reminder of the importance of emergency preparedness and training. SteelFisher *et al.*² referenced a study addressing a national survey to assess preparedness and training for bioterrorism and naturally occurring infectious disease epidemics. The findings from the referenced study suggest that infectious disease training is somewhat more widespread than bioterrorism training. Moreover, a previous survey of US medical schools revealed that only 31% reported having any type of disaster training in their curriculum.^{5,6} From the programs that have started to incorporate the training, surveys of students displayed that only 17.2% believed that they were receiving adequate education for disasters or natural disasters.^{5,6} Health care workers are often recognized as volunteers during emergency situations, yet frequently feel unprepared due to complex and unfamiliar scenarios with the proper medical response.³

Emergency Preparedness in PA Programs

When a disaster or an emergency occurs, PAs are often one of the first responders to the scene to offer their assistance.^{13,14} Although PAs often feel they lack the proper skills needed to provide assistance, PAs do possess the necessary medical skills that can be used to help patients in times of disaster and emergency, such as triage and creation of treatment plans.¹⁵ The current laws surrounding PAs and their capabilities are essential to consider, especially when PAs assist in a disaster or emergency. It is suggested that a framework be created for the scope of practice for PAs for the assumption to exercise their professional roles in times of disaster and emergency.^{13,14} A framework would allow for PAs to step in to help fill in the gap in a lack of available health care providers during times of crisis.

The integration of emergency and disaster training within health care and medical curricula continues to be researched. One underutilized section of health care across teaching hospitals and local disaster response is disaster-trained health professionals.⁶ With properly taught disaster response principles, individuals are, therefore, able to act within a uniform standard of care in the most stressful disaster situations.³

The purpose of this pilot study was to evaluate whether PA programs in the Midwest integrate both disabilities and emergency preparedness education into 1 curriculum.

Methods

Study Design

In January 2020, using Qualtrics (<https://www.qualtrics.com/>), an online survey tool, cross-sectional information was collected from the deans and program directors from accredited PA programs listed with the Physician Assistant Education Association (PAEA). The responses from programs were calculated and compared.

Informed Consent

An institutional review board approved the current research prior to the start of the survey. All participants provided informed consent.

Participants

Participants who completed the study’s survey included program directors and deans of PA programs. Participants were recruited based on their university’s “accredited” status or “applying for accreditation” status. Once participants were chosen based on their university’s accreditation status, a recruitment letter was sent via email with an attached link for the survey. Inclusion criteria included universities in the Midwest region (Illinois, Indiana, Iowa, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin). States that had 2 or more programs in the respective state were included. PA programs listed as “provisional” or “probationary” accreditation status were excluded from this study. States with 1 program were excluded due to the possibility of being identified.

Procedures and Instrument

A convenience sample was utilized to survey program directors and deans of PA programs. Emails were obtained from the PAEA. Invitations were sent through email to 43 eligible participants in January 2020. A follow-up invitation was sent to the 43 active email addresses 2 weeks after the first invitation was sent. The survey questions were based on those originally asked by Tanenhaus et al.¹⁶ Additionally, the survey collected participant demographic information: the type of program, program location, number of students, number of program credits, and number of faculty with emergency preparedness expertise. Participants were asked to respond to 9 questions regarding disability education and 8 questions regarding emergency preparedness. Participants were able to skip over or leave questions blank at any time throughout the survey.

Analysis

The analysis of the data collected through Qualtrics was downloaded and uploaded to Statistical Analysis Software (SAS) (https://www.sas.com/en_us/home.html). Frequency tables were created to analyze the responses to each question. Descriptive statistics were used to analyze the data.

Results

The final sample ($n = 9$) had a response rate of 21%. **Table 1** displays the descriptive statistics for this study.

Table 2 provides the percentage of PA programs that responded “yes” to survey questions regarding disability content within their curriculum. Three of the 10 programs (33%) responded “yes” to having competencies that encompass disability within their program. More significantly, 7 of the 10 programs (70%) answered “yes” to having lectures that specifically address disability training, suggesting that some PA students are getting disability education during their program. Four of 10 schools (44%) reported that their program offers extracurricular opportunities for training related to disabilities for their students. A final question addressed whether students are surveyed for their interest in certain topics, such as disabilities. Seven (78%) programs stated “no,” whereas 2 (22%) stated “yes.”

Table 3 exhibits “yes” responses to questions regarding emergency preparedness content within their curriculum. Six of the 10 programs (66%) responded that their program provided lectures specific to emergency preparedness. However, 2 of the 10 programs (22%) indicated that they currently plan to increase

Table 1. Descriptive statistics for physician assistant programs in the Midwest, 2020

	<i>n</i> = 10 (%)
Type of program	
Physician assistant	9 (90%)
Missing	1 (10%)
Program location	
Iowa	1 (10%)
Michigan	4 (40%)
Minnesota	2 (20%)
Ohio	1 (10%)
Wisconsin	1 (10%)
Missing	1 (10%)
Number of students enrolled	
0-50	5 (50%)
51-75	2 (20%)
76-100	2 (20%)
Missing	1 (10%)
Number of program credits	
50-90	1 (10%)
91-110	3 (30%)
111-125	4 (40%)
126-150	1 (10%)

Table 2. Percentage of physician assistant (PA) programs in the Midwest that responded “yes” to questions about disability content within curriculum, 2020

Questions asked	PA (<i>n</i> = 10) <i>n</i> (%)
Responded “yes” to at least 1 of the following questions.	
Does your program have lectures that specifically address disability training?	<i>n</i> = 7 (70%)
Does your program have other graduate-level courses that deal substantially with disability (eg, courses on aging or children that have special health care needs)?	<i>n</i> = 4 (40%)
Does your program currently plan to increase coverage of topics related to disability?	<i>n</i> = 5 (55%)*
Does your program have competencies that encompass disabilities?	<i>n</i> = 3 (33%)*
Does your program offer extracurricular opportunities for training related to disabilities?	<i>n</i> = 4 (44%)*
Does your program survey students asking for their interest in certain topics, such as disabilities?	<i>n</i> = 2 (22%)*

*Accounts for 1 missing response.

emergency preparedness topics. Only 1 of the 10 (11%) programs stated that their program surveyed students asking for their interest in the topic of emergency preparedness.

Table 4 exhibits the “no” responses to survey questions regarding disability and emergency/disaster preparedness content within their curriculum. With regard to disability content, 100% of schools responded they do not offer a graduate-level track or concentration in disability, and they do not offer a dual degree or a multidisciplinary program that highlights disabilities. Regarding emergency preparedness content, 100% of schools responded they do not provide a graduate-level track or concentration in disability. Furthermore, programs do not offer a dual degree or a

Table 3. Percentage of physician assistant (PA) programs in the Midwest that responded “yes” to questions about emergency/disaster preparedness content within curriculum, 2020

Questions asked	PA (n = 9), n (%)
Responded “yes” to at least 1 of the following questions.	
1. Does your program have lectures that specifically address emergency/disaster preparedness?	n = 6 (66%)*
2. Does your program currently plan to increase coverage of topics related to emergency/disaster preparedness?	n = 2 (22%)*
3. Does your program offer extracurricular opportunities for training related to emergency/disaster preparedness?	n = 3 (33%)*
4. Does your program have competencies that encompass emergency/disaster preparedness?	n = 4 (44%)*
5. Does your program survey students asking for their interest in certain topics, such as emergencies/disaster preparedness?	n = 1 (11%)*

*Accounts for 1 missing response.

Table 4. Percentage of physician assistant (PA) programs in the Midwest that responded “no” to questions about disability and emergency/disaster preparedness content within curriculum, 2020

Questions asked	PA (n = 9), n (%)
Responded “no” to at least 1 question.	
Disability	
1. Does your program offer a graduate-level track or concentration in disability?	n = 9 (100%)
2. Does your program offer a dual-degree or multidisciplinary program that highlights disability (eg, physical/occupational therapy)?	n = 9 (100%)
Emergency/disaster preparedness	
1. Does your program offer a graduate-level track or concentration in emergency/disaster preparedness?	n = 9 (100%)*
2. Does your program offer a dual-degree or multidisciplinary program that highlights emergency/disaster preparedness?	n = 9 (100%)*
3. Does your program have other graduate-level courses that deal substantially with emergency/disaster preparedness (eg, course on natural disasters or mass casualties)?	n = 9 (100%)*

*Accounts for 1 missing response.

multidisciplinary program that highlights emergency preparedness. All schools identified that they do not have additional graduate-level courses that deal substantially with emergency or disaster preparedness, such as a course on natural disasters or mass casualties.

Discussion

The purpose of this study was to assess the curriculum of PA programs that integrate disabilities and emergency preparedness education. PA education is an intensive and fast-paced curriculum, and most PA programs follow the National Commission on Certification of Physician Assistants.¹³ A majority of programs provide lectures that specifically address disability and emergency

or disaster preparedness training. Regarding disability training, most programs currently have plans to increase educational opportunities for the care of individuals with a disability. Rizzolo et al.¹⁷ surveyed PA students on their knowledge and perceptions of autism spectrum disorder (ASD). The study results revealed that close to 50% of PA students did not adequately identify the red flags for ASD. ASD represents 1 type of disability.¹⁷ The need for properly trained health care professionals is crucial for providing the necessary medical care. PAs will most likely encounter individuals with disabilities throughout their careers as they come in for treatment. Having these professionals know how to treat and interact with individuals with disabilities appropriately is essential.^{7,8} Moreover, the programs that participated in the study provide some lectures regarding disabilities and emergency and disaster preparedness. These suggest that PA students are exposed to disabilities and emergency and disaster preparedness education and have some knowledge before starting their careers.

Without the training, health care professionals lack the necessary skill to provide quality care to diverse populations such as individuals with disabilities. Rizzolo et al.¹⁷ provide 1 potential explanation for lack of education and knowledge. Rizzolo et al.¹⁷ suggest a lack of time to cover all aspects of a disability such as ASD in the curriculum. As previous studies suggest barriers to implementing disabilities into the curriculum, they may help explain the study’s findings. One potential barrier may be a lack of advocacy for these educational topics to be integrated into the curriculum.^{7,8} Without adequate support at the academic leadership level, it may be challenging to add disability education and emergency preparation courses to the curriculum, leaving PAs underprepared for treating an individual with a disability or in times of disaster. A second potential barrier may be a lack of time in the curriculum.⁸ Finding time in an already busy schedule to add a course or a dual degree exclusively devoted to these topics can be challenging. A final barrier could be that programs lack the necessary funding to hire faculty to teach these specific courses and are often unfamiliar with disability constructs, and may not themselves have been exposed to the health and well-being issues of this population.^{8,18}

As public health crises continue to arise and affect large populations of individuals, the curriculum of PA programs needs to be continually updated to reflect the knowledge that public health gains from each crisis. It is recommended that PA programs increase their coverage of disability education and emergency and disaster preparedness topics within the curriculum.

Suggestions for future research could include expanding the survey to all accredited PA programs within the United States, as this was a preliminary study, and only accredited PA programs in the Midwest were used to establish baseline knowledge if this education is occurring in the PA curriculum. It is hoped that the results could be generalizable with a broader range of schools. Additional studies could include programs with the accreditation status of “provisional” or “probationary” to increase the number of responses.

The study asked broad questions regarding disability education and emergency preparedness so that future studies can modify the survey to be more specific. Specific questions could include particular types of interprofessional opportunities offered or what steps will be taken to increase coverage of disability and emergency preparedness topics. The survey questions did not specifically ask what type of disabilities, whether visible or invisible, are covered in lectures; this, too, could promote future research and discussion. Additional questions need to be added to assess the length of time

these topics are covered during lectures, whether this is multiple lectures or a specific number of slides covering these topics. Future studies could add a qualitative section to gain perception of the types of disabilities covered and the connection to chronic disease.

For health care workers, by receiving this disability awareness education in the curriculum, students will have early exposure to the potential settings and patients they will most likely encounter during their careers. Early exposure to providing care to individuals with disabilities allows a health care provider to create an inclusive environment for all patients to feel safe and heard during their visits.

Strengths

Compared with previous studies,^{12,17} this study reports higher percentages of programs incorporating lectures about disabilities and emergency preparedness into their curriculum. The current research stands out from previous studies in that the survey asked about having specific competencies and extracurricular opportunities for students within the programs. Another strength of the study is the validation of the survey instrument.¹⁶

Limitations

The current research is limited in that it is unclear whether PA programs offer certificates addressing disabilities or individual courses addressing disabilities. The researchers explored the 43 PA programs and the curriculum provided on each prospective website. Out of the 43 programs, only 4 programs provided information to support the integration of disability education within a PA program. Example courses include 1) a Clinical and Professional Skills III course, which specifically mentions populations with potential vulnerabilities; 2) an Interprofessional Education: Collaboration, Communication, and Cultural Competency course, which can infer that disability education would be included based on cultural competency; 3) an Aging and Elderly Special Populations course, which again can imply that disability education would be included; and finally 4) a Preparing Future PAs course, which provided a description that had the words “diversity issues.”

Furthermore, while this was a preliminary study, 4 other fundamental limitations were identified. First, there was the overall small number of responses in relation to the overall number of PA programs nationally. Consequently, this study cannot be generalizable for other programs across the United States. Second, this survey only included programs that had “accredited” or “apply for accreditation” status, excluding those with “provisional” or “probationary” status, which also contributed to a smaller sample size. The decision to exclude the programs with either status is due to the fact that accreditation committees are currently reviewing these programs for flaws in their program. Third, there is a lack of literature evaluating the student perceptions of disability education and emergency preparedness within a PA program. Fourth, the response rate presented a limitation as only 10 PA schools responded even with a follow-up email reminder.

Conclusion

This study was conducted to bring awareness to PA students’ education regarding disabilities and emergency preparedness. As public health crises continue to arise, such as COVID-19, it is critical to have appropriately trained health care professionals.

When developing a curriculum to address disabilities and emergency preparedness, it is vital to include individuals with disabilities. There is a saying, “Nothing About Us Without Us.”¹⁹

“Planning *with* us and not for us is a really important lesson to be learned.”¹⁹ States get a significant amount of federal funding for disaster preparedness and recovery, and those federal funds should be making their way to disability-inclusive planning.¹⁹ Furthermore, the Federal Emergency Management Agency (FEMA) suggests the following topics for community education and awareness regarding ongoing COVID-19 pandemic operations, food banks, considerations for people with disabilities, community emergency response teams, and volunteer management.²⁰ Finally, as part of education, it is essential to consider the key ethical, legal, and medical dilemmas arising for people with disabilities in the COVID-19 pandemic.²¹ It is vital to assess the current frameworks surrounding people with disabilities regarding emergency planning, such as COVID-19. Key aspects include access to information, communication between patients and clinicians, and accommodations. It is suggested that both public health policies and clinical procedures are prepared to incorporate people with disabilities for the planning efforts of future pandemics and disasters.

To conclude, having educational exposure to how pandemics, disasters, and other emergencies affect the health care system will give students a baseline knowledge of providing care during uncomfortable times. Just as importantly, as more individuals with disabilities continue to receive treatment from health care professionals, these professionals must know how to adequately communicate and interact with these patients to provide optimal care.

Conflict(s) of interest. None

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