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Exercise Prescription Related Coursework in Physician Assistant Program Curricula in the United States

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Abstract

Exercise has proven to be beneficial in the prevention and treatment of chronic disease. Exercise is Medicine®, a joint initiative between the American Medical Association and the American College of Sports Medicine, was launched in 2007 to call on all healthcare providers to assess physical activity levels, counsel about exercise in the prevention and treatment of chronic disease, and/or refer patients to an exercise specialist. However, based on self-reported data, 51% of American adults still do not meet the national physical activity guidelines. Even more, the prevalence of inactivity has been reported to be much higher when the data is based off of objective measures, such as accelerometry. The high prevalence of inactivity is likely due to multiple factors, including undereducation of healthcare professionals on how to council patients and develop an exercise prescription (Rx). Therefore, the aim of the study was to determine the prevalence of required course offerings in U.S. physician assistant program curricula regarding training in exercise Rx. Program websites were accessed in 2020 for information regarding course offerings in Master of Physician Assistant Studies programs. Only those programs whose course descriptions of all the required courses were accessible online were included in the analysis. Three individuals independently analyzed course titles, course descriptions, and topics (if provided) of all programs for the search terms “exercise Rx”, “exercise”, “fitness”, and “physical activity”. After the analysis was complete, the data was combined and discrepancies were spot checked by a fourth individual. The study aimed to determine how many programs offered courses with the terms “exercise Rx”, “exercise”, “fitness”, and/or “physical activity” in the course title, course description, or course topics. Ninety one percent (165) of U.S. programs were included in the analysis. Only one program offered a required course with the term “exercise Rx” in the title, description, or course topics. An additional six programs offered courses with the terms “exercise”, “fitness”, or “physical activity” in the title, description, or topics. These courses ranged between 1.0-2.5 credits. The data suggests that physician assistant students may be undereducated in the area of exercise Rx, which may contribute to the high prevalence of inactivity.

Keywords: Physical activity; Fitness; Exercise; Curriculum; PA students; Exercise is medicine

Introduction

Sixty percent of adults in the United States have a chronic disease. Moreover, 40% have two or more [1]. Chronic disease accounts for 60% of deaths and the largest driver of healthcare costs in the United States despite being largely preventable by altering lifestyle behaviors such as smoking, diet, and physical inactivity [1]. It is well established that participation in chronic physical activity can improve physical and mental health, prevent chronic diseases, and decrease all-cause mortality. Due to the overwhelming health benefits of physical activity and exercise, the Global Burden of Disease study has ranked physical inactivity as the fifth leading cause of disease burden in western Europe and one of the top modifiable risk factors along with smoking [2]. Due to the burden of physical inactivity, Exercise is Medicine®, a joint initiative between the American Medical Association and the American College of Sports Medicine, was launched in 2007 to call on health care providers to assess physical activity levels and prescribe exercise in the prevention and treatment of chronic disease and/or to refer patients to an exercise specialist [3].

One reason for the lack of physical activity among Americans may be the lack of counseling by healthcare providers. Only 32.4% of patients seen by clinicians in 2010 received physical activity counseling that year [7]. Primary care physicians have listed several reasons for not counseling patients on exercise, including insufficient knowledge in the field of exercise, insufficient knowledge on how to counsel effectively, lack of perceived effectiveness of their counseling, and insufficient counseling protocols, among other factors such as lack of time and lack of reimbursement [8]. The lack of knowledge and confidence may be due to insufficient training of medical students. A recent analysis of medical school curricula found that the majority of medical schools in the U.S. did not offer coursework regarding exercise counseling and prescription. Of those programs that did, it was most often elective rather than required coursework [9].

Physician assistants (PAs) are an important member of the healthcare team and often seen by patients in the primary care setting. Thus, it is expected that they too should be somewhat knowledgeable on how to effectively assess physical activity levels, prescribe exercise, and to know when

it is prudent to refer the patient to an exercise specialist. There is very little published data regarding the knowledge or confidence of PAs to counsel patients about exercise [10] or the training they receive as students [11]. Thus, the aim of this study is to determine the prevalence of exercise prescription (exercise RX) related coursework in U.S. PA program curricula.

Methods

University websites were accessed in 2020 for information regarding course offerings in Master of PA Studies programs in the United States. Only those programs whose course descriptions of all the required courses were accessible online were initially included in the analysis. Three individuals independently analyzed course titles, course descriptions, and topics (if provided) of all PA programs for the search terms "exercise Rx", "exercise", "fitness", and "physical activity". When the key search terms were identified, the following information was recorded in an Excel spreadsheet: the name of the institution, whether the institution was public or private, course title, credit hours of course, and required or elective status of course. After the analysis was complete, the data was combined and discrepancies were spot checked by a fourth individual.

Results

Ninety one percent (165) of U.S. PA programs were included in the analysis. After collection of the data, it was determined to only include required courses in the analysis due to the prevalence of inaccessibility of information pertaining to elective courses; most institutions only provided a list and description for required courses. No programs offered courses with any of the keywords in the course title. Only one program offered a required course with the term "exercise Rx" in the course description or topics. This was a two-credit course entitled Public Health. Six additional programs offered courses with the terms "exercise", "fitness", or "physical activity" in the description or topics. These courses ranged between 1.0-2.5 credits, with three of them one credit hour courses, two of them 2 credit hour, and one course 2.5 credit hours. Health Promotion & Preventative Medicine, or something very similar, was the most frequent title of these courses. Others were Clinical Nutrition, Clinical Medicine, and Internal Medicine & Practice. All of these programs offering exercise-related coursework were private universities (Table 1).

	Number of Programs	Title of Courses	Credit Hours
Programs with courses with the term "exercise Rx" in the title	0		
Programs with courses with the term "exercise Rx" in the course description or topics	1	Public Health	2
Programs with courses with the terms "exercise," "physical activity," or "fitness" in the course title	0		
Programs with courses with the terms "exercise," "physical activity," or "fitness" in the course description or topics	6	Health Promotion & Preventative Medicine (3) Internal Medicine Clinical Medicine Clinical Nutrition	1-2.5

Table 1: Number of programs that have the keywords in the course title, description, or topics.

Discussion

The data suggests that PA students may be undereducated in the area of exercise Rx. Approximately 95% of the programs analyzed did not offer required coursework relating to exercise or exercise-Rx. Furthermore, the courses offered were typically only one or two credit courses with exercise only one of several covered topics.

PAs should be knowledgeable about exercise Rx because physical activity is a crucial aspect of disease prevention and management. As healthcare professionals who work closely with physicians, PAs play a critical role in promoting healthy behaviors among their patients. Exercise Rx involves tailoring a physical activity program to an individual's needs, taking into account their medical history, current health status, personal preferences, and goals [9]. Exercise Rx is not simply counseling a patient about the importance of meeting physical activity guidelines set forth by U.S. Department of Health and Human Services [5]. By understanding the principles of exercise Rx, PAs can provide patients practical advice on how to incorporate physical activity into their daily routine and help them achieve their health goals. Although PAs should be knowledgeable about exercise Rx, it is not expected that they should become exercise specialists. Basic knowledge would allow PAs to prescribe exercise to healthy patients or those with common chronic disease states with classic presentation during routine visits. In other cases, it may be prudent to refer patients to an exercise specialist. Even further, some health conditions are contraindications to exercise, thus PAs should know when not to recommend exercise.

With most of the courses offered being only 1-2 credit hours and exercise being only one topic within a list of several topics covered in the course, it is likely that the exercise Rx is not discussed in much depth, if at all. It is not possible from

the analysis to determine the specific area regarding exercise that was taught in the seemingly limited time within the course since it is such a broad term. For example, potential exercise related topics include: benefits of exercise, types of physical activity, physical activity guidelines, exercise safety, the role of exercise in preventing and treating chronic disease, exercise assessment, exercise Rx, exercise psychology or motivational counseling techniques, exercise and injury, and contraindications to exercise. All are ostensibly important topics relating to healthcare.

In a study published in 2014, researchers surveyed PA program directors to determine the extent to which exercise Rx was included in their curricula. They found that while most programs included some instruction on exercise Rx, there was wide variation in the amount and type of instruction offered [11]. Despite these assertions, another study surveyed PA students to determine their attitudes and beliefs regarding the importance of exercise Rx in their practice and found that while most students recognized the importance of exercise Rx, they felt that they needed more education and training in the area [12]. Indeed, Papanek, et al. evaluated the impact of a one-semester exercise Rx course on the knowledge and confidence of PA students in prescribing Rx and found that the course was impactful [13]. Thus, offering sufficient exercise Rx coursework in PA curricula, whether required or elective, may be an effective strategy to prepare PA students as practicing healthcare professionals capable of contributing to the goals of the Exercise is Medicine initiative and the Healthy People 2030 physical activity objectives.

There are some limitations to this study. First, elective courses offered by PA programs were not included in the analysis. Secondly, the search terms used in this study did not include other terms that may encompass exercise Rx, such as wellness, preventative medicine, or lifestyle medicine. Lastly, latent content or experiences were likely unaccounted for. All of these factors may have resulted in an underestimate of the amount of exercise Rx-related education physician assistant students are receiving.

Conclusion

This study investigated the prevalence of exercise Rx related coursework in US PA program curricula. It was found that only 1 of 165 (0.6%) PA programs included in the analysis offered a required course with the term “exercise Rx” in the course description or topics list. Six additional programs offered courses with the terms “exercise”, “fitness”, or “physical activity” in the course description or topics list. The courses ranged from 1.0-2.5 credit hours, with exercise only one of several topics covered in these courses. This suggests that PA students may be undereducated in the area of exercise Rx, despite the critical role that PAs play in promoting healthy behaviors among their patients. The authors suggest that basic knowledge of exercise Rx principles would allow PAs to prescribe exercise to healthy patients or those with common chronic disease states during routine visits, while also recognizing the importance of referring patients to an exercise specialist in some cases.

Given the prevalence of chronic diseases and the important role that physical activity and exercise can play in their prevention and management, it is concerning that such a small proportion of PA programs appear to offer coursework in exercise Rx. Increasing exercise Rx education would likely better equip PAs with the skills and knowledge to promote physical activity among their patients. The results of this study may also be relevant to other healthcare professions and underscore the need for greater emphasis on exercise Rx education in medical and healthcare professional training more broadly.

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