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HIV-Related Content in Physical Therapist Education Programs: A Curricular Needs Assessment

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Introduction and Review of Literature.

Increased life expectancy for people living with HIV (PLH) has led to HIV-related chronic impairments involving the cardiopulmonary, musculoskeletal, and neurological systems. Because of the high prevalence and chronicity of the disease, physical therapists may treat PLH of all ages and in various clinical settings. The aims of this study were to answer 3 questions: What percentage of physical therapist education programs cover HIV in their curricula? In what contexts is HIV covered in the programs surveyed? What needed teaching materials related to the inclusion of HIV are identified by surveyed faculty?

Subjects and Methods. An original, 12-item email survey was administered to all 213 entry-level physical therapist education programs accredited by the Commis-

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sion on Accreditation in Physical Therapy Education. Data were analyzed with computer software.

Results. Sixty-six surveys were completed and returned. Most respondents (n=60) stated that their program addresses HIV in some context. Most respondents (n=59) indicated that including HIV-specific information in a physical therapy curriculum is extremely important or moderately important. The contexts in which HIV was discussed in their curricula were disease epidemiology and pathophysiology (59%, n=39), physical therapy-treatable impairments in PLH (51.5%, n=34), and physical therapy-specific interventions for PLH (39.4%, n=26).

Discussion and Conclusion. Only slightly more than half of the respondents reported teaching physical therapy-specific interventions for PLH, highlighting an important area for curricular focus. Some respondents expressed interest in additional HIV information; this finding suggests that HIV experts may serve as a beneficial resource. The present study highlights the need for physical therapist education programs to equip graduating students with the knowledge and skills to treat PLH.

Key Words: AIDS, Curriculum, HIV.

INTRODUCTION

Over the past 30 years, the development of antiretroviral therapy has drastically extended the life-span of people living with HIV (PLH). Because of this increased longevity, HIV is becoming a chronic disease; with proper treatment, PLH can have a life expectancy similar to that of their counterparts who are HIV negative.¹ Therefore, the management of HIV has shifted to addressing the chronic systemic effects of the disease, such as musculoskeletal, neurological,

and chronic pain issues. Mitigation of these effects requires a multidisciplinary approach to management of HIV-related impairments/, with an increasing role for physical therapists in the continuum of care for PLH.

In an effort to enhance the use of physical therapy as part of the medical management of HIV, a 3-phase initiative was developed to analyze the current role of physical therapy in the HIV health care spectrum. Phase 1 assessed patterns of referral for physical therapist services made by physicians specializing in HIV management in Atlanta, Georgia, a city with a high prevalence of PLH. The results revealed that although most providers did refer their patients for physical therapist services, 30% of providers did not do so; the most commonly cited reasons were a lack of patient insurance, a denial of service by the clinics to which the patients were referred, and patient financial burdens.² Phase 2 evaluated the knowledge and beliefs about HIV of 129 physical therapists practicing in the metropolitan Atlanta area. The results revealed that although most (65.1%) of the physical therapists surveyed reported their basic knowledge about HIV as “advanced” or “competent,” less than one-third of the respondents could correctly identify all methods of HIV transmission. Only half reported that learning best practices for treatments of HIV-related impairments was included in their physical therapist education.³

On the basis of these results, this study (phase 3) was created to determine any potential gaps in HIV coverage in accredited physical therapist education programs throughout the United States. The aims of this study were to answer 3 questions: What percentage of physical therapist education programs cover HIV in their curricula? In what contexts is HIV covered (eg, pathophysiology, common physical therapy-treatable impairments, and interventions) in the programs surveyed? What needed teaching materials related to the inclusion of HIV are identified by surveyed faculty?

REVIEW OF LITERATURE

Human immunodeficiency virus is a retrovirus that targets CD4⁺ T cells, reducing the human body's innate ability to fight off infections. The virus is spread through 4 specific bodily fluids (blood, semen, vaginal fluids, and breast milk). Seroconversion from HIV to AIDS occurs when the CD4⁺ cell count drops below 200/mm³, rendering a person more prone to opportunistic infections, such as tuberculosis, pneumonia, and lymphomas.^{4,5} In 2010, the Centers for Disease Control and Prevention estimated that in the United States alone, there were approximately 1.2 million PLH, and approximately 50,000 people continue to become infected with HIV each year.^{6,7} Because of the development of antiretroviral therapy for diminishing the immunosuppressive effects of HIV, the health-adjusted life expectancy—that is, the average number of years an individual is expected to live, with consideration of any disease or injury—has been extended for PLH.^{4,8–10}

A deterioration in physical function secondary to musculoskeletal, neurological, and cardiopulmonary impairments can be a consequence of chronic infection and systemic effects of antiretroviral therapy in PLH, leading to a significant decline in quality of life.^{11–13} These impairments fall within the scope of physical therapist practice. Musculoskeletal impairments secondary to deficits in bone remodeling and bone metabolism include myalgia, arthralgia, low back pain, osteoporosis, bone infection, and an increased risk for fractures.^{14–17} The combination of HIV and antiretroviral therapy can result in an increased incidence of neuropathy and neurological impairments, including neuromuscular weakness syndrome, distal poly-sensory neuropathies, mononeuropathies (eg, carpal tunnel syndrome), inflammatory demyelinating polyneuropathy (eg, Guillain-Barré syndrome), chronic pain, and vestibular dysfunction.^{18–22}

People living with HIV may also benefit from physical therapist services to address cardiopulmonary deficits resulting from progressive dysfunction of skeletal inspiratory muscles. These deficits can cause increased shortness of breath and impaired lung function and can result in severe functional limitations in activities of daily living.²³

In recent years, increasing numbers of systematic reviews and studies have evaluated the effectiveness of physical therapy-specific interventions for PLH. These studies have highlighted potential benefits of physical therapist services for PLH, such as improving cardiovascular health, strength, weight, psychological status, and neurocognitive function as well as enhancing overall quality of life

by decreasing pain and fatigue.^{12,24–28}

SUBJECTS

The study subjects were professional (entry-level) physical therapist education programs accredited by the Commission on Accreditation in Physical Therapy Education (CAPTE) of the American Physical Therapy Association. A total of 213 schools were identified from the CAPTE website.²⁹

METHODS

The survey (Appendix 1) was created by the lead author and was sent to 4 faculty members in physical therapist education programs for pilot testing before being distributed to a wider audience. The survey was a 1-time-use survey, and although no reliability or validity data are available for this instrument, the pilot testing process involving accredited physical therapist education programs allowed for content validity.

The survey was transformed into a web-based format with Adobe FormsCentral survey software.³⁰ A survey link was then sent via email, 3 separate times with 2 weeks in between, to department directors from each physical therapist education program. The program directors were given the option to distribute the survey to appropriate faculty within their departments. The survey was open to respondents between September 1, 2014 and October 31, 2014.

The data collection instrument was an original, 12-item questionnaire that included an array of questions regarding courses taught by the respondents, the importance of including HIV-specific information in physical therapy curricula, and the desired method for incorporating more HIV information into their specific curricula. The instrument was formatted with “yes/no” questions (eg, “Do you currently teach any courses?”), multiple-choice questions (eg, “In your opinion, how important is it to include HIV-specific information in a physical therapy curriculum?—extremely important, moderately important, minimally important, or not important”), and open-ended questions (eg, “How would you like more HIV information to be made available to your students?”). Quantitative analysis was performed with the analysis tool within Microsoft Excel 2010.³¹

RESULTS

Sixty-six respondents completed the survey, for a response rate of 31%. Although there were no duplicate responses, 6 programs submitted 2 or 3 responses from different people. Therefore, our results represent 59 rather than 66 different schools throughout the country. Respondents represented 29 states as well as

Puerto Rico and the District of Columbia (Table 1). All but 1 of the respondents (n=65, 98.5%) were associated with an academic institution that offered an advanced degree (Doctor of Physical Therapy). The remaining institution offered a Master of Science in Physical Therapy degree at the time of the survey. Half of the respondents (n=33, 50%) were associated with a public/state academic institution, and the other half (n=33, 50%) were associated with a private academic institution.

Responses are shown in Figures 1 through 4. Respondents were able to select more than 1 answer; therefore, total percentages were greater than 100%.

DISCUSSION AND CONCLUSION

The present study was part of a multiphase project. Phase 1 of the project surveyed HIV medical providers in metropolitan Atlanta about referral patterns for physical therapist services. The results of phase 1 established a strong foundation for phase 2 of the project, which evaluated the knowledge and beliefs about HIV of physical therapists practicing in metropolitan Atlanta. The results of phase 2 led to the present study (phase 3), which assessed the inclusion of HIV in accredited physical therapist education program curricula.

A comparison of the results of phase 2 with the results of phase 3 revealed a discrepancy between HIV-related content that is taught in physical therapist education programs and HIV-related knowledge among practicing physical therapists. Multiple reasons may account for this finding. Practicing physical therapists surveyed in phase 2 may have graduated before most physical therapist education programs included HIV-related content in their curricula. Another possible reason for this discrepancy is the lack of retention of specific content taught in school—especially if this knowledge is not reinforced by clinical practice, given a lack of exposure to PLH. This lack of exposure was highlighted in phase 1 of this project, in which medical providers specializing in HIV management indicated that despite the need for physical therapy in PLH, most of their patients were not able to access physical therapy because of financial burdens or denial of service by the clinics to which the patients were referred. Despite these barriers to care, most medical providers who specialized in HIV management and were surveyed in phase 1 referred their patients who were HIV positive for physical therapist services.

The results of the present study revealed that most physical therapist education programs surveyed addressed HIV in their curricula through an emphasis on HIV-related

Table 1. Number of Respondents and Total Number of Physical Therapist (PT) Education Programs (by State)

State, District, or Territory	No. of Respondents per State	% of PT Education Programs per State That Responded
Arizona	1	25
California	1	7.14
Colorado	1	50
Delaware	1	100
District of Columbia	1	50
Puerto Rico	2	100
Florida	4	30
Georgia	4	66.67
Idaho	1	100
Illinois	1	14.29
Indiana	2	66.67
Kansas	3	100
Kentucky	1	50
Maine	2	100
Massachusetts	6	62.5
Michigan	1	16.67
Minnesota	2	25
Missouri	3	42.86
Nebraska	2	100
New York	10	47.62
North Carolina	3	16.67
North Dakota	1	50
Ohio	2	20
Oregon	1	100
Pennsylvania	2	12.5
South Carolina	1	50
Tennessee	1	20
Texas	1	8.33
Utah	1	50
Virginia	3	42.86
Wisconsin	1	16.67

pathophysiology (n=39, 81%) and impairments (n=34, 71%). For the program courses in which HIV was discussed, slightly more than half of the respondents (n=25, 37.8%) indicated that physical therapy-specific interventions for PLH were taught. Although it is critical for future physical therapists to have an understanding of the underlying disease pathology, it is also imperative for them to be able to adequately address and treat the impairments associated with the disease. As 1 of the 8 components of patient/client management, CAPTE requires physical therapist education programs to teach students interventions to achieve patients' goals and outcomes.³² It is through this ability to provide physical therapy-specific interventions that the wide range of neuromuscular, musculoskeletal, integumentary, and cardiovascular impairments experienced by PLH can be appropriately addressed.

Although most respondents (n=59, 89.3) agreed that it is either extremely important or moderately important to include HIV-specific information in a physical therapist education program curriculum, 7 (10.6%) responded that it is minimally important. Of the states not represented in the survey responses (n=21), 4 were among the 20 states with the highest reported number of HIV diagnoses in 2012; however, there was no correlation between areas of high prevalence and perceived increased importance in addressing the topic. Regardless of state-specific HIV prevalence, it is important for physical therapist education programs across all geographic distributions to include information about HIV in their curricula.

The results revealed that 42% (n=27.7) of the respondents indicated that they would like more information on HIV to be made available to their students. Three respondents reported that guest lectures were used to address HIV, and 16 respondents stated that they would like more information to be made available through guest lectures. These findings suggest that HIV experts may be an excellent resource for physical therapist education programs. Other resources may include webinars, continuing education courses, and published research on the topic of HIV and physical therapist management of care for PLH.

Despite the array of noteworthy findings, the present study had various limitations. Although no established reliability or validity data are available for the original survey instrument, the pilot testing process allowed for content validity. The response rate for the survey was 31%. Although no gold standard has been established for survey response rates, a 2004 study (n=1,989) comparing

Figure 1. How important is it to include HIV/AIDS-specific information in a PT curriculum?

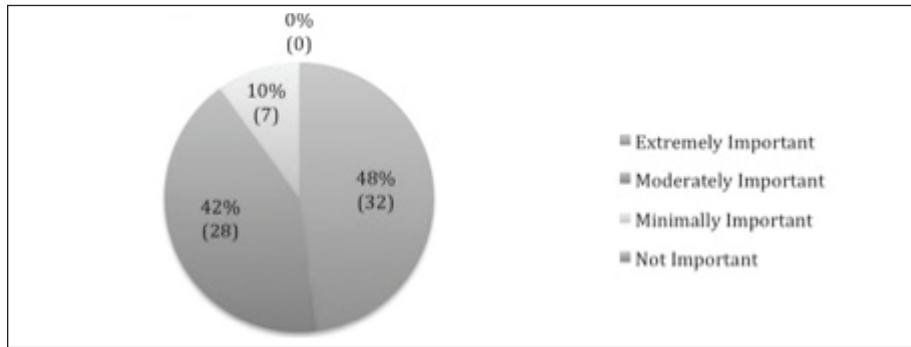


Figure 2. If, YES, in what contexts does your program address HIV/AIDS?

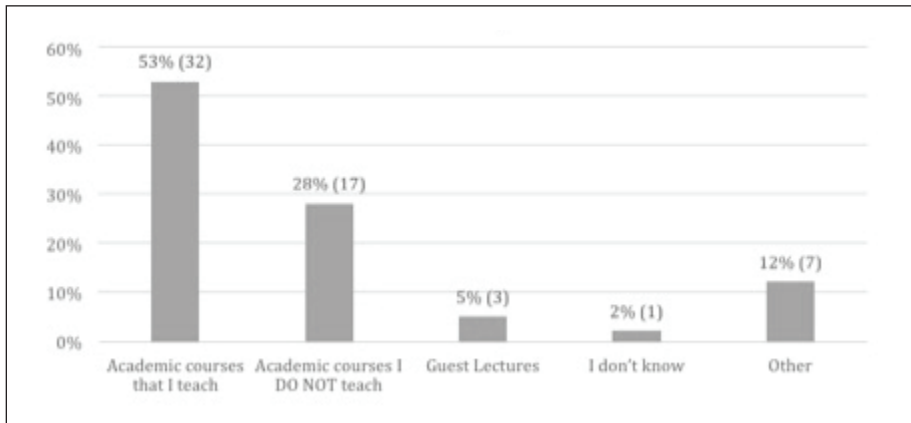


Figure 3. If you DO discuss HIV/AIDS in your course, in what contexts is it covered? (Select all that apply)

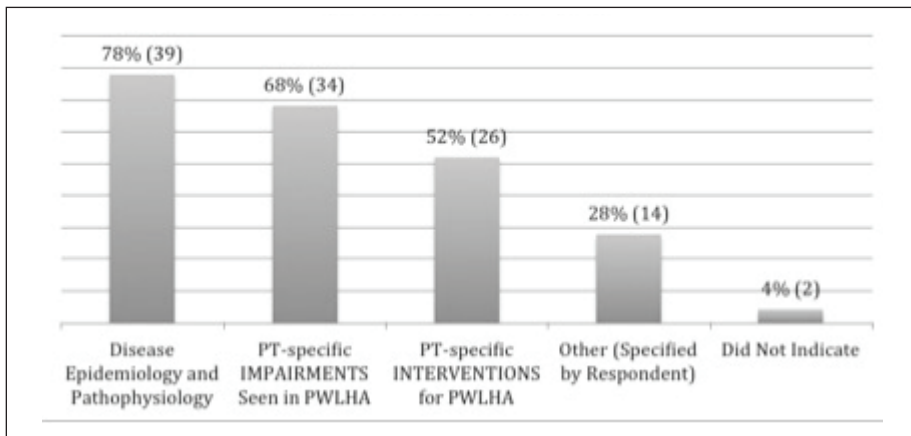
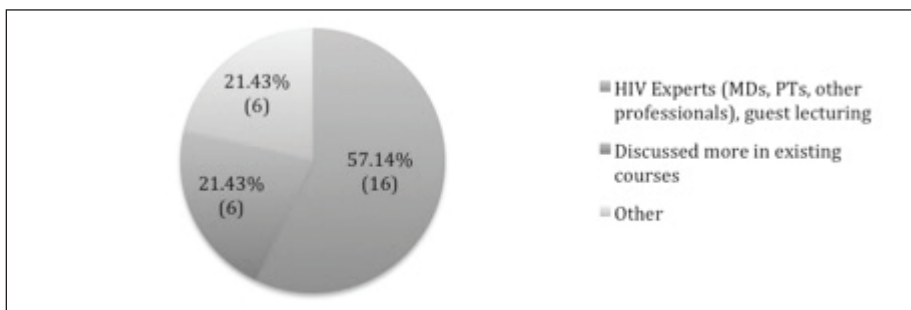


Figure 4. How would you like to have more HIV/AIDS information available to your students?



response rates for postal mail and email reported that the email response rate was lower (20.7%) than the postal mail response rate.³³ Online surveys have their own set of limitations, such as not allowing respondents to ask clarifying questions, leaving some items open to interpretation. The results of the present study should not be generalized to all CAPTE-accredited physical therapist education programs in the United States.

Across all clinical settings and in populations of every age, physical therapists will increasingly encounter PLH. The disease may be simply listed as a comorbidity, or the patient may have an HIV-related impairment as the primary reason for referral. To receive CAPTE accreditation as a physical therapist education program, a program curriculum must include “content about the cardiovascular, pulmonary, endocrine, metabolic, gastrointestinal, genitourinary, integumentary, musculoskeletal, and neuromuscular systems...”³² The HIV disease process affects all of the abovementioned systems and therefore should be consistently incorporated into a program curriculum so that graduating students will be equipped with the knowledge and skills to treat PLH.

REFERENCES

1. World Health Organization. Global HIV response: epidemic update and health sector progress towards universal access—progress report 2011. http://whqlibdoc.who.int/publications/2011/9789241502986_eng.pdf. Accessed October 28, 2016.
2. Pullen S, Pak J, Pieton C, et al. Physical therapy as an adjunct treatment for people living with HIV: a provider needs assessment—phase II. *J Allied Health*. 2014;43(3):e45–e52.
3. Pullen S, Gilman K, Hunt K, et al. Physical therapy as an adjunct treatment for people living with HIV: an allied health perspective. *J Allied Health*. 2014;43(2):e11–e17.
4. AIDSinfo. HIV overview: HIV—the basics. <http://aidsinfo.nih.gov/education-materials/fact-sheets/19/45/hiv-aids--the-basics>. Updated September 13, 2016. Accessed October 28, 2016.
5. National Institute of Allergy and Infectious Diseases. HIV: how HIV causes AIDS. <http://www.niaid.nih.gov/topics/HIVAIDS/Understanding/howHIVcausesAIDS/Pages/howhiv.aspx>. Accessed September 19, 2014.
6. Centers for Disease Control and Prevention. HIV: basic statistics. <http://www.cdc.gov/hiv/basics/statistics.html>. Accessed October 28, 2016.
7. Centers for Disease Control and Prevention. 2011 surveillance report. http://www.cdc.gov/hiv/library/reports/surveillance/2011/surveillance_Report_vol_23.html#commentary. Accessed October 14, 2014.

8. Centers for Disease Control and Prevention. HIV: living with HIV. <http://www.cdc.gov/hiv/living/index.html>. Accessed October 28, 2016.
9. National Institute of Allergy and Infectious Diseases. HIV: treatments of HIV infection. <http://www.niaid.nih.gov/topics/HIVAIDS/Understanding/Treatment/Pages/default.aspx>. Accessed September 19, 2014.
10. World Health Organization. Health status statistics: mortality. <http://www.who.int/health-info/statistics/indhale/en/>. Accessed October 28, 2016.
11. Oursler KK, Katzell LI, Smith BA, et al. Prediction of cardiorespiratory fitness in older men infected with the human immunodeficiency virus: clinical factors and value of the six-minute walk distance. *J Am Geriatr Soc*. 2009;57(11):2055–2061.
12. Rusch M, Nixon S, Schilder A, et al. Impairments, activity limitations and participation restrictions: prevalence and associations among persons living with HIV in British Columbia. *Health Qual Life Outcomes*. 2004;2:46.
13. Shen JM, Blank A, Selwyn PA. Predictors of mortality for patients with advanced disease in an HIV palliative care program. *J Acquir Immune Defic Syndr*. 2005;40(4):445–447.
14. Güerri-Fernández R, Villar-García J, Díez-Pérez A, Prieto-Alhambra D. HIV infection, bone metabolism, and fractures. *Arq Bras Endocrinol Metabol*. 2014;58(5):478–483.
15. Kole AK, Roy R, Kole DC. Musculoskeletal and rheumatological disorders in HIV infection: experience in a tertiary referral center. *Indian J Sex Transm Dis*. 2013;34(2):107–112.
16. Takhar SS, Hendej GW. Orthopedic illnesses in patients with HIV. *Emerg Med Clin North Am*. 2010;28(2):335–342.
17. Triant VA, Brown TT, Lee H, Grinspoon SK. Fracture prevalence among human immunodeficiency virus (HIV)-infected versus non-HIV-infected patients in a large U.S. healthcare system. *J Clin Endocrinol Metab*. 2008;93(9):3499–3504.
18. Amruth G, Praveen-Kumar S, Nataraju B, Nagaraja BS. HIV associated sensory neuropathy. *J Clin Diagn Res*. 2014;8(7):MC04–MC07.
19. Vidal JE, Clifford D, Ferreira CM, Oliveira AC. HIV-associated neuromuscular weakness syndrome in Brazil: report of the two first cases. *Arq Neuropsiquiatr*. 2007;65(3B):848–851.
20. Heinze BM, Vinck BM, Hofmeyr LM, Swanepoel DW. Vestibular involvement in adults with HIV. *Auris Nasus Larynx*. 2014;41(2):160–168.
21. Nicholas PK, Mauceri L, Slate Ciampa A, et al. Distal sensory polyneuropathy in the context of HIV. *J Assoc Nurses AIDS Care*. 2007;18(4):32–40.
22. Schütz SG, Robinson-Papp J. HIV-related neuropathy: current perspectives. *HIV AIDS (Auckl)*. 2013;5:243–251.
23. Dufour CA, Marquine MJ, Fazeli PL, et al. Physical exercise is associated with less neurocognitive impairment among HIV-infected adults. *J Neurovirol*. 2013;19(5):410–417.
24. Gomes-Neto M, Conceição CS, Oliveira Carvalho V, Brites C. A systematic review of the effects of different types of therapeutic exercise on physiologic and functional measurements in patients with HIV. *Clinics (Sao Paulo)*. 2013;68(8):1157–1167.
25. O'Brien K, Nixon S, Tynan AM, Glazier R. Aerobic exercise interventions for adults living with HIV. *Cochrane Database Syst Rev*. 2010;(8):CD001796.
26. O'Brien K, Nixon S, Glazier RH, Tynan AM. Progressive resistive exercise interventions for adults living with HIV. *Cochrane Database Syst Rev*. 2004;(4):CD004248.
27. Pullen SD, Chigbo NN, Nwigwe EC, et al. Physiotherapy intervention as a complementary treatment for people living with HIV. *HIV AIDS (Auckl)*. 2014;6:99–107.
28. Kinirons SA, Do S. The acute care physical therapy HIV patient population: a descriptive study. *J Int Assoc Provid AIDS Care*. 2015;14(1):53–63.
29. Commission on Accreditation in Physical Therapy Education. Accredited PT & PTA programs directory. <http://www.capteonline.org/apta/directories/accreditedschools.aspx?navID=10737421958&site=capte>. Accessed October 28, 2016.
30. Adobe Systems Inc. Adobe FormsCentral [computer software]. San Jose, CA: Adobe Systems Inc; 2011.
31. Microsoft Corp. Microsoft Excel [computer software]. Redmond, WA: Microsoft Corp; 2010.
32. Commission on Accreditation in Physical Therapy Education. Evaluative criteria: PT programs. http://www.capteonline.org/uploadedFiles/CAPTEorg/About_CAPTE/Resources/Accreditation_Handbook/EvaluativeCriteria_PT. Accessed October 28, 2016.
33. Kaplowitz MD, Hadlock TD, Levine R. A comparison of web and mail survey response rates. *Public Opin Q*. 2004;68 (1):94–101.

Appendix. Survey of Physical Therapist (PT) Education Programs Accredited by the Commission on Accreditation in Physical Therapy Education

1. What degree program does your institution offer?
DPT
MSPT
2. In what state is your academic institution?

3. Is your institution:
Public/State
Private
4. Do you currently teach any courses?
No, I do not currently teach (please proceed to question 7)
Yes (please list) _____
5. If you DO teach, do you discuss HIV/AIDS in the course(s) that you teach?
No
Yes
6. If you DO discuss HIV/AIDS in your course, in what contexts is it covered (select all that apply)?
Disease epidemiology and pathophysiology
PT-specific impairments seen in people living with HIV/AIDS
PT-specific interventions for people living with HIV/AIDS
Other (please specify) _____
7. In your opinion, how important is it to include HIV/AIDS-specific information in a physical therapy curriculum?
Extremely important
Moderately important
Minimally important
Not important
8. If you chose "Not important" in question 7, why do you feel that it is NOT important to include HIV/AIDS-specific information in a physical therapy curriculum?
HIV/AIDS is not within the realm of practice for PTs
Our students are already learning sufficient information in our program to prepare them for practice
Other _____
9. To your knowledge, does your program address HIV/AIDS in ANY context?
No (please proceed to question 11)
Yes
I don't know
10. If you answered "yes" to question 9, in what contexts does your program address HIV/AIDS?
Academic courses that I teach
Academic courses that I DO NOT teach
Guest lectures
I don't know
Other _____
11. Would you like to have more HIV/AIDS information available to your students?
No
Yes (please proceed to question 12)
12. How would you like more HIV/AIDS information to be made available to your students?
HIV experts (MDs, PTs, other professionals) guest lecturing
Discussed more in existing courses
Other _____

Abbreviations: DPT, Doctor of Physical Therapy; MSPT, Master of Science in Physical Therapy; PT-specific impairments, impairments treatable by physical therapy; MDs=doctors of medicine.