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Research Report

Prevalence of and Influences for Incorporating Clinically-Relevant Spanish into Doctor of Physical Therapy Programs

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Abstract

Introduction. The United States has 63.7 million Hispanic/Latino individuals, and approximately 40% of Spanish speakers have limited English proficiency (LEP). Patient-provider language discordance is a major contributor towards health disparities. Hence, many health professions educators offer clinically-relevant Spanish. The primary study purposes were to: 1) identify the prevalence of Doctor of Physical Therapy (DPT) programs in the United States that incorporate clinically-relevant Spanish language learning in their curriculum; and 2) describe how DPT programs incorporate Spanish language learning in their curriculum.

Review of Literature. Researchers in a 2014 report identified 12 DPT programs offering Spanish; however, the current prevalence is unknown. Additionally, a gap exists in the literature regarding Spanish language instruction approaches, and if the methods align with Second-Language Acquisition (SLA) best practices.

Subjects. Program directors or full-time core faculty from 27 accredited US-based DPT programs.

Methods. The researchers sent an email request to complete a 31-question survey to 270 accredited DPT programs, and then searched DPT curricular plans on the non-responding programs' websites. Descriptive statistics were used for analysis.

Results. Six of 27 responding programs (22.2%) offered Spanish. Additionally, 35 programs were identified via website search, totaling 41 programs offering Spanish (15.2%). Twenty-five of the total 41 programs (61%) incorporated Spanish via elective course. Five of 6 responding programs that offered Spanish (83.3%) stated they desired to serve the program's community and 3 (50%) were influenced by the growing Spanish-speaking population. Five of the 6 (83.3%)

assessed oral/aural proficiency with a post-test. The 6 responding programs offering Spanish averaged 7.2 of 13 principles of SLA best practices (range=4-11).

Discussion and Conclusion. There has been over a 3-fold increase in DPT programs offering Spanish, but more attention is warranted regarding standardized assessment of Spanish proficiency. Improving physical therapists' Spanish proficiency may help reduce health disparities caused by language barriers.

Key Words. Physical therapy; health disparities; linguistic competence; Spanish; curriculum

Introduction

The Hispanic/Latino population comprises the largest ethnic minority in the United States (US) with 63.7 million individuals.[1] Spanish is the second most commonly spoken language after English.[2] According to 2021 data, approximately 40% of Spanish speakers have limited English proficiency (LEP).[3] The University of California, Los Angeles Latino Policy & Politics Institute predicts that Hispanics will rise from 13% of the US population in 2021 to 28% in 2060.[4] Given the growing number of Hispanics nationally, healthcare professionals will likely encounter Spanish-speaking patients with LEP. Language discordance between patients and providers is a major contributor towards health disparities and serves as a barrier to fostering the provider-patient relationship.[5,6] Hence, many educators across various health professions, including physical therapy, have included clinically-relevant Spanish in their curriculum in response to the rapidly changing demographics.[7-10]

Multiple gaps exist in the literature pertaining to the current state of Spanish instruction in Doctor of Physical Therapy (DPT) programs. The present investigation sought to address these gaps. The purposes of this study were to: 1) identify the prevalence of DPT programs in the United States that are incorporating clinically-relevant Spanish language learning in their curriculum; 2) describe how DPT programs are incorporating clinically-relevant Spanish language learning in their curriculum; 3) explore the motives that have influenced DPT programs to incorporate clinically-relevant Spanish into the curriculum; and 4) evaluate if DPT programs' Spanish clinically-relevant training and evaluation align with proposed best practices.

Review of Literature

According to the American Community Survey, 68% of Hispanic households speak Spanish at home and 40% speak English "less than very well".[3] Himmelstein et al reported that individuals struggling with LEP use less healthcare because they anticipate that their needs will not be met.[11] In comparison to those that speak English fluently, people with LEP are less likely to have a regular health care provider, have fewer physician visits, are more vulnerable to being uninsured, and have lower rates of screening (eg, blood pressure, cancer).[11] Persons with LEP may also have other characteristics that affect their ability to access health services, including older age, low health literacy, cultural practices that limit questioning healthcare providers, and fewer community-support services.[12]

Additionally, individuals with LEP have expressed feelings of vulnerability, disempowerment, and frustration with the healthcare care setting due to barriers in communication.[13-15] These barriers contribute to lack of information provided to them regarding their diagnosis, its etiology and prognosis, adverse events, medication management, and the services that were available to them.[13-15] A lack of language-concordant clinicians contributes to these limitations. Addressing these issues at the source of the problem may lessen the risk of health disparities for patients with LEP.[13-15] For example, a study found that there was a clinically meaningful effect on improvement in glycemic control for Latino patients with LEP and diabetes who switched from a language discordant to a language concordant provider.[15]

In addition to differences in quality of care, there are reported differences in the availability of care for limited English proficient patients with the increasing use of technology.[16] With the implementation of telehealth services, patients with LEP in California had a 50% less likelihood

of using telehealth compared to those who were English proficient, even after removing other factors that may impact their care.[16]

To address health disparities for Spanish-speakers with LEP, medical and pharmacy educators have incorporated clinically-relevant Spanish into their curricula.[7-9] In 2015, 73 of 110 (66%) responding medical schools reported having Spanish curricula available compared to 112 of 117 (95%) in 2019, which Ortega et al determined to be a 12% increase (based on the total number of medical schools at each data collection period).[8] In 2016, 22 of 61 (36%) responding pharmacy schools reported offering Spanish education[9]; however, no recent update has been done to identify if there has been a change in prevalence of Spanish incorporation in pharmacy education.

In a 2014 case report from the physical therapy literature, the authors identified (via website search) 12 of 239 (5%) DPT programs in the United States in 2013 that provided Spanish language opportunities.[10] Whether there has been a change in the number or percentage of DPT programs offering Spanish since then is unknown. Other relevant information is lacking from the physical therapy literature, including how DPT programs are incorporating clinically-relevant Spanish into the curriculum; who teaches the required and/or elective clinically-relevant Spanish courses; and methods of instruction and assessment. Further study is warranted to assess if they are employing clinically-relevant Spanish training and evaluation to align with proposed second-language acquisition (SLA) best practices.[17]

Per Hardin and Hardin, medical Spanish instruction (ie, clinically-relevant Spanish instruction) in the United States is offered in undergraduate institutions, graduate schools, medical residencies, and continuing medical education.[17] Hardin and Hardin reviewed the medical

Spanish literature and determined there was “little uniformity in design, participation, and measurement” within medical Spanish programs.[17] Regarding measurement, most programs did not mention the use of pre- and post-testing or oral proficiency assessments.[17] Thus, Hardin and Hardin proposed minimum best practices for medical Spanish instruction, as well as minimum standards for program research and evaluation, to “prepare students for substantive patient communication”.[17] These practices provide valuable guidance to any health profession program offering clinically-relevant Spanish, including physical therapy. Finally, a need exists to identify which motives have influenced DPT programs to incorporate clinically-relevant Spanish in their curriculum.

The present study’s findings may suggest next steps towards more DPT programs creating high-quality Spanish instruction and assessment. In turn, these changes may contribute to improving patient-provider communication for patients seeking physical therapy services and decreasing health disparities faced by Spanish-speaking individuals with LEP.

Subjects

The Commission on Accreditation in Physical Therapy Education (CAPTE) Directory of DPT Programs[19] was used to identify eligible participants. Inclusion criteria for this study consisted of program directors or full-time core faculty from CAPTE-accredited DPT programs of the 50 United States and the District of Columbia. CAPTE-accredited DPT programs in Puerto Rico and CAPTE-accredited DPT programs outside the United States were excluded.

Methods

This study used a non-experimental survey design and was reviewed by the XXXX Institutional Review Board (IRB) (Case #1957522-1); IRB determined the study did not meet the federal

definition of human subject research. Researchers used the literature to create the 31-multiple-choice questions survey (19 multiple-choice and 12 open-ended) (see Appendix, Supplemental Digital Content 1, for survey). A survey was uploaded using the XXXX's QuestionPro Software[18] for pilot-testing; minor revisions were made to enhance clarity based on pilot-test participants' feedback, before finalizing the survey. Using QuestionPro, the research team emailed 270 eligible participants using each program director's email address found on the CAPTE website[19] on September 11, 2022.

The recruitment email included an introduction, the purpose of the study, and a link to the survey. The survey was estimated to take approximately 15 minutes to complete. A second reminder email was sent approximately 2 weeks later, and a final email was sent in the last week of October 2022. Participants were presented with a statement prior to beginning the survey acknowledging that their participation in the study was completely voluntary. If they chose not to acknowledge the statement, their survey was discontinued. Respondents had to choose which institution they represented to ensure no data were collected from different respondents at the same institution. Completed surveys were separated into 2 categories: DPT programs that responded "Yes" or "No" when asked "Does your DPT program incorporate clinically-relevant Spanish into the curriculum?" After completion, participants had the opportunity to enter their email in a separate link to be in a drawing for 1 of 3 $50 electronic gift cards.

Descriptive statistics were used to identify: 1) the prevalence of DPT programs in the United States that are incorporating clinically-relevant Spanish language learning in their curriculum; 2) how DPT programs incorporate clinically-relevant Spanish into the curriculum; 3) the motives

that have influenced DPT programs to incorporate clinically-relevant Spanish into the curriculum; and 4) if DPT programs use clinically-relevant Spanish training and evaluation to align with proposed best practices.

In January 2023, the research team searched the online curriculum and/or course catalog of the DPT programs that did not respond or did not fully complete the survey; the researchers did the online search in an effort to identify the most accurate total count of DPT programs offering clinically-relevant Spanish opportunities. Three members of the research team divided the list of the programs, and each member reviewed the curriculum/catalog for each of their assigned DPT program's website. If a Spanish course was identified, the researcher used the course's description provided to determine if it was a required or elective course, or if the Spanish learning opportunity was an extracurricular experience (ie, mission trip).

Results

Purpose 1: Prevalence of incorporating clinically-relevant Spanish curriculum

Twenty-seven respondents (representing 27 DPT programs) completed the survey (response rate=10%). Six of 27 responding programs (22.2%) reported offering clinically-relevant Spanish. Table 1 displays respondent demographic information. Three (50%) of the 6 DPT programs that offered clinically-relevant Spanish had a public affiliation and 2 (33.3%) were minority-serving institutions (Hispanic Serving Institutions). One of these programs was the XXXX; a research team member (XX) (who was core faculty at XXXX at the time of data collection) completed the survey.

Through the search of the 243 non-responding DPT programs' websites, the research team identified 35 additional DPT programs incorporating Spanish. Thus, based on the survey results

and website search, a total of 41 DPT programs of the 270 CAPTE-accredited DPT programs in the United States (15%) currently include Spanish as curricular or extracurricular activities (Table 2).

Purpose 2: Methodology of clinically-relevant Spanish courses

Of the 41 total programs identified that offered Spanish, the majority (n=25, 60.9%) incorporated Spanish via an elective course. Both programs that offered international service-learning in a Spanish-speaking country (n=2, 4.9%) were faith-based private universities. Only 1 program of the 6 survey-respondent institutions offering clinically-relevant Spanish (16.7%) reported focusing equally on both oral/aural and reading/writing skills, while the other 5 (83.3%) reported focusing on oral/aural proficiency. Four (66.7%) programs emphasize communicative activities only versus grammar teaching and communicative activities. Three out of these 4 stated that they divide students into different levels of oral proficiency (ie, beginner, intermediate, or advanced).

Four of the 6 (66.7%) survey-responding institutions stated that the clinically-relevant Spanish course was taught by a core DPT faculty; 2 (33.3%) had an adjunct faculty who is a PT clinician; and 1 (16.7%) had an adjunct faculty who is not a PT clinician. One (16.7%) institution also reported that a language company provides instruction to beginners during 'Lunch & Learn' activities. Two (33.3%) DPT programs stated that their instructor collaborates with language professionals and/or applied linguists.

Regarding method of instruction, the survey-respondents had the opportunity to select multiple answers. All (n=6, 100%) programs incorporate role play; 5 (83.3%) use a lecture-based methodology; 2 (33.3%) incorporate standardized patients, 4 (66.7%) encompass a clinic-based

instruction, 2 (33.3%) use a Spanish textbook written for PT professionals, and 1 (16.7%) use a general Spanish textbook.

Purpose 3: Influences for incorporating Spanish in DPT curricula

Survey participants had the opportunity to select more than 1 answer choice to indicate the motives that influenced them to incorporate clinically-relevant Spanish into the curriculum. Five (83%) programs stated they have a desire to serve the program's community; 3 (50%) were influenced because of the country's growing Spanish-speaking population; 1 (16.7%) had student(s) advocate for Spanish to be incorporated; 1 (16.7%) wanted to better prepare their students to work with Spanish language interpreters and Spanish-speaking patients at their pro-bono clinic; and 1 (16.7%) program stated that local clinicians requested the DPT program to work on improving their students' Spanish.

For the 21 programs not offering Spanish, the main barriers to offering clinically-relevant Spanish education was the lack of personnel to teach clinically-relevant Spanish (n=13, 61.9%), and having no room in the curriculum to offer clinically-relevant Spanish education (n=12, 57.1%). Two responding programs that did not offer Spanish education (9.5%) stated that they had never considered incorporating clinically-relevant Spanish into the curriculum.

Purpose 4: Evaluation methodology based on SLA best practices

Method of evaluation varied for the 6 responding programs offering Spanish. Five (83.3%) programs evaluate their students' Spanish proficiency before the Spanish course. Baseline Spanish proficiency is assessed by oral exam (n=2, 33.3 %), written exam (n=1, 16.7%), self-reported survey (n=1, 16.7%), and/or simulation (n=1, 16.7%). Students' Spanish proficiency is evaluated during the Spanish course(s) either by pre-test and post-test (n=2, 33.3%), post-test

(n=5, 83.3%), an oral exam (n=3, 50%), a written exam (n=3, 50%), written assignments (n=2, 33.3%), and/or faculty-observed patient interviews (n=2, 33.3%). One program stated that they continue to assess the students' improvement in Spanish after the students complete the Spanish course(s) (n=1, 16.7%). Only 1 program stated that they used a standardized assessment of Spanish proficiency to evaluate student progress, which was the Physical Therapy Spanish Proficiency Measure (PT-SPM).[20]

Responses from the 6 programs that completed the survey and offered clinically-relevant Spanish were compared with second-language acquisition (SLA) best principles for practice delineated by Hardin and Hardin.[17] No program met all 13 principles, and the average was 7.2 (Table 3). All programs' courses focus on oral/aural proficiency (n=6, 100%), and most (n=5, 83.3%) assess Spanish proficiency at baseline; they use an oral exam (n=2, 33%), written exam (n=1, 16.7%), simulation (n=1, 16.7%), and self-report (n=1, 16.7%). Lastly, most (n=5, 83.3%) assess oral/aural proficiency after Spanish instruction is completed; they use faculty-observed patient interviews (n=2, 33.3%), oral exams (n=3, 50%), role-playing (n=1, 16.7%), and Objective Structured Clinical Examination (OSCE) (n=1, 16.7%).

Discussion

The first purpose of this study was to identify the prevalence of DPT programs in the United States that are incorporating clinically-relevant Spanish language learning in their curriculum. This study's findings indicate that 15.2% (n=41) of DPT programs in the United States offer Spanish. Previously, a report showed that out of the 239 accredited DPT programs in existence in 2013, only 12 (5%) offered instruction in Spanish.[10] Thus, there has been over a 3-fold

increase in the number of DPT programs offering Spanish from 2013 to 2022, which is an overall 10% increase in prevalence.

Notably, the prevalence of incorporating Spanish within the curricula is lower in DPT education when compared to medical education (78%) or pharmacy education (36%).[8,9] Perhaps these differences may be attributed to the greater role of physicians and pharmacists as primary care providers[21,22] compared to physical therapists. With more opportunities for physical therapists to serve in primary care roles,[23] physical therapists with Spanish proficiency may be seen as a higher priority. More medical literature[7,8,15,17,24,25] is available highlighting the need for patient-provider language concordance, than in the PT literature.[10,19,20] The larger body of literature may reflect a greater focus on language concordance in medical education, and the literature may influence other medical educators to incorporate Spanish in their programs.

The second study purpose was to describe how DPT programs are incorporating clinically-relevant Spanish language learning in their curriculum. Based on data from the survey and website searches, the majority (n=25, 60.9%) of DPT programs incorporate Spanish as an elective course, which aligns with medical and pharmacy education.[7-9] Based on the survey, all responding DPT programs offering Spanish (n=6, 100%) focus on students' oral/aural proficiency. Given that the reported goal of Spanish instruction in medical education programs was reported to be greater language concordance between patients and providers to improve patient health literacy and to achieve basic standards for medical Spanish education, improving learners' oral/aural proficiency is assumed to be an instructional focus.[7] Pharmacy programs reported an emphasis on: greeting and using common phrases to Spanish-speaking patients, gathering patient information, and counseling patients in Spanish.[9] This approach aligns with

the survey responses in the present study, where communicative activities were reported to be emphasized more than grammar teaching in DPT programs.

Three (50%) of the responding DPT programs offering Spanish instruction placed students into different sections based on their oral proficiency for instruction approaches. Similarly, in pharmacy education literature, survey respondents stated students entered their Spanish course at the following levels of proficiency: beginner (n=12, 60%), intermediate (n=6, 30%), or beginner and intermediate (n=2, 10%).[9] Additionally, in medical education, 59% of schools reported offering "multiple levels" of medical Spanish curricula but did not define these levels.[8] All DPT programs use a lecture-based methodology and role play. Comparably, the mode of instruction used by medical schools comprised of didactic instruction (n=67, 90%), student-to-student role play (n=46, 69%), standardized patients (n=31, 46%) and clinical encounters with patients (n=23, 34%) (defined as performance-based examinations to assess learner communication skills).[7,8] However, in the pharmacy education literature, the type of instruction/learning that was used by their instructing faculty was not reported.[9] As indicated by the survey data, half of Spanish courses were taught by a core faculty member (n=3, 50%) in DPT education, a pattern also observed in medical and pharmacy education.[7-9]

Additionally, authors in the medical, pharmacy, and physical therapy literature have reported a lack of uniformity in instruction.[7-9] In their critical review of medical Spanish literature, Hardin and Hardin noted that "published reports were not comparable; programs had not been replicated; and there was no consensus as to best practices for medical Spanish education".[17] They highlighted the lack of validated assessment methods, and that authors reported

outcomes incongruent with their educational aims (eg, reporting written test scores instead of directly measuring students' verbal and aural Spanish proficiency).[17]

The survey in this study did not explore if the DPT faculty had training related to second language acquisition (SLA). Ortega et al advocated for implementing faculty development courses/training to better adhere to the SLA principles in medical education.[8] Similarly, we support DPT programs establishing partnerships with linguistic specialists to optimize the Spanish instruction. While DPT faculty can contribute their expertise related to determining what is clinically-relevant, the unique expertise of language specialists is invaluable in promoting optimal language learning.[17-20,24,25]

The third purpose of the study was to explore the motives that have influenced DPT programs to incorporate clinically-relevant Spanish into the curriculum. As previously mentioned, a desire to serve the program's community and the increasing Spanish-speaking population primarily influenced responding DPT programs to incorporate Spanish within the curriculum. No data were found in the literature specific to the influences behind their incorporation of Spanish in medical and pharmacy education, but likely they are influenced at least in part by these same factors. As Hispanic immigration patterns continue to evolve, new US regions may experience an increased need for health professionals who speak Spanish.[26] For example, while still having small Hispanic populations overall, North Dakota and South Dakota have experienced the steepest growth rate in Hispanic populations since 2010.[26]

This study also identified obstacles that hinder the integration of clinically-relevant Spanish in DPT education. The main barriers identified by survey participants were the lack of personnel to teach clinically-relevant Spanish and having no room in the curriculum to offer Spanish. Medical

schools reported similar and additional obstacles, including overly heterogeneous student proficiency levels, the cost of running the course, and lack of student retention.[7]

The fourth purpose of the study was to evaluate if DPT programs' clinically-relevant Spanish training and evaluation align with Hardin and Hardin's minimum best practices adhering to the SLA.[17] The average score for DPT programs was 7 out of 13 (Table 3). All programs focused on oral/aural proficiency, and most (n=5, 83.3%) programs assessed oral/aural proficiency with a post-test. However, of the 6 DPT programs offering Spanish who responded to the survey, only 1 reported utilizing a standardized measure; the Physical Therapy Spanish Proficiency Measure (PT-SPM) is a standardized assessment to evaluate students' progress in Spanish proficiency.[20] SLA principles highlight the importance of incorporating evaluation measures that are valid and reliable. The PT-SPM was developed for English-Spanish bilingual physical therapists to evaluate the clinically-relevant Spanish proficiency of DPT students, and has good to excellent interrater reliability and validity in a simulated clinical setting.[20] However, further research is needed to determine the validity and reliability of PT-SPM in a real clinical setting and to determine its usefulness to track improving Spanish proficiency across a DPT curriculum.

Limitations

The results of this present study should be interpreted with caution. The response rate for the survey was 10%, leaving the study at risk of non-response bias. No minimum survey response rate was identified in the physical therapy literature, but the *American Journal of Pharmacy Education* requires an 80% response rate for survey findings meant to represent pharmacy education.[27] In an attempt to achieve a higher response rate, the research team extended the survey deadline and sent a third email. Additionally, the team completed a website search of all

non-responding programs to improve the possibility of meeting the first study purpose of determining the prevalence of DPT programs incorporating Spanish. Despite these limitations, this study contributes to filling the gaps in the existing literature.

CONCLUSION

This study reveals that Spanish instruction has increased in DPT education in the United States with 41 DPT programs (15.2%) currently offering Spanish. Most programs offer Spanish via an elective course and focus on oral/aural proficiency with most utilizing a post-test. Having a desire to serve the program's community was the most commonly reported motive for offering Spanish, and the lack of personnel was the most commonly reported barrier. The study confirmed that no responding program fully adheres to all 13 principles of SLA minimum best practice guidelines.[17] Thus, overall, this investigation most importantly reveals opportunities to improve Spanish education course design.

Future research is needed to determine how to optimally align clinically-relevant Spanish courses with SLA best practices, including the use of standardized assessments. While the PT-SPM appears to be the most promising assessment to consider, further research is indicated to determine if this tool can be used to effectively identify longitudinal improvements in students' Spanish proficiency.[20] Ongoing instructional and research efforts to improve clinically-relevant Spanish instruction in DPT education is important. Reducing language discordance between physical therapists and their Spanish-speaking patients with LEP may ultimately contribute to reducing health disparities.

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Table 1. Demographic Information of Survey Participants' Institutions

		Programs offering clinically-relevant Spanish n (%)	Programs NOT offering clinically-relevant Spanish n (%)	Total (n)
		6 (22.2%)	**21 (78.8%)**	**27**
Institution	Public	3 (11.1%)	8 (29.6%)	11 (40.7%)
	Faith-Based Private	2 (7.4%)	5 (18.5%)	7 (25.9%)
	Non-Faith-Based Private	1 (3.7%)	8 (29.6%)	9 (33.3%)
Location	Rural	0 (0%)	6 (22.2%)	6 (22.2%)
	Urban	4 (14.8%)	11 (40.7%)	15 (55.6%)
	Suburban	2 (7.4%)	4 (14.8%)	6 (22.2%)
Community Population	White	4 (14.8%)	14 (51.9%)	18 (66.7%)
	Hispanic/Latino	2 (7.4%)	2 (7.4%)	4 (14.8%)
	Asian	0 (0%)	1 (3.7%)	1 (3.7%)
	Black/African American	0 (0%)	2 (7.4%)	2 (7.4%)
	Other	0 (0%)	2 (7.4%)	2 (7.4%)
Minority-Serving Institution	Yes	2 (7.4%)	1 (3.7%)	3 (11.1%)
	No	4 (14.8%)	20 (74.1%)	24 (88.9%)
Hispanic DPT Students	0-25%	4 (14.8%)	20 (74.1%)	24 (88.9%)
	26-50%	1 (3.7%)	1 (3.7%)	2 (7.4%)
	51-75%	1 (3.7%)	0 (0%)	1 (3.7%)
	76-100%	0 (0%)	0 (0%)	0 (0%)

Table 2. Spanish Learning Opportunities by Institution Type for All Programs Identified

		Public n (%)	Faith-Based Private n (%)	Non-Faith-Based Private n (%)	Total n (%)
		17 (41.5%)	**9 (22%)**	**15 (36.9%)**	**41**
Clinically-relevant Spanish offered	Elective Course	10 (24.4%)	4 (9.8%)	11 (26.8%)	25 (61%)
	Required Course	4 (9.8%)	2 (4.9%)	0 (0%)	6 (14.6%)
	International Service-Learning in a Spanish-Speaking Country	0 (0%)	2 (4.9%)	0 (0%)	2 (4.9%)
	*Other	3 (7.3%)	1 (2.4%)	4 (9.8%)	8 (19.5%)

*Other Spanish-related experiences consisted of independent study (n=5, 12.2%), post-grad fellowship (n=2, 4.9%), and classes during lunch/clinical rotations (n=1, 2.4%).

Table 3. Comparisons of Responding DPT Programs Teaching and Evaluation Practices to Second-Language Acquisition (SLA) Best Practices[16]

List of minimum best practices[16]	DPT Program #1	DPT Program #2	DPT Program #3	DPT Program #4	DPT Program #5	DPT Program #6
Based on SLA research			x			x
Focus on oral/aural proficiency	x	x	x	x	x	x
Group students according to oral proficiency	x			x		x
Utilize clinician instructors	x		x			x
Utilize language professionals	x	x			x	x
Combine grammar & communicative instruction		x			x	
Incorporate immersion & service learning	x	x	x		x	x
EVALUATION PRACTICES						
Assess oral/aural proficiency	x	x		x	x	x
Pre-test		x	x			
Post-test	x	x	x		x	x
Use standardized assessments			x			x
Use multiple methods of assessment				x	x	x
Longitudinal Assessment						x
TOTAL Score (out of 13)	7	7	7	4	7	11

Prevalence of and Influences for Incorporating Clinically-Relevant Spanish into Doctor of Physical Therapy Programs - Survey

Appendix 1

Institution Demographics

1. **Select the name of your institution.**
   Dropbox will show answers choices.

2. **In what state is your institution located?**
   - Dropbox with answers
     - *Prefer not to answer*

3. **What choice best describes your type of institution?**
   - Public
   - Faith-Based Private
   - Non-Faith-Based Private

4. **Is your institution a designated 'minority-serving institution'?**
   - Yes
   - No

   If yes, then dropbox will show answers choices.
   - ☐ ANNAPISIs (Asian American and Native American Pacific Islander-Serving Institutions)
   - ☐ ANNHs (Alaskan Native and Native Hawaiian students)
   - ☐ HBCU (Historically Black Colleges and Universities)
   - ☐ HSIs (Hispanic Serving Institutions)
   - ☐ NASNTIs (Native American-Serving Nontribal Institutions)
   - ☐ PBIs (Predominantly Black Institutions)
   - ☐ TCUs (Tribal Colleges and Universities)

5. **Does your program have a mission to serve the surrounding local community? If so, which of the following best describes this population?**
   - White
   - Black or African American
   - American Indian or Alaska Native
   - Asian
   - Native Hawaiian or Other Pacific Islander
   - Hispanic or Latino
   - Other: _____

6. **What type of community is your institution located in?**

- Rural
- Urban
- Suburban

Respondent Demographics

7. **Which of the following best describes your role in the Doctor of Physical Therapy (DPT) program?**
   - Program Director
   - Core Faculty (not Program Director)

8. **How many years have you been employed in this institution's DPT program?**
   - < 1 year
   - 1-5 years
   - 6-10 years
   - More than 10 years

Program Demographics

9. **How often does your DPT program admit students?**
   - Semester
   - Quarterly
   - Yearly

10. **How many students are admitted per DPT cohort?**
    - 50 or less
    - 51-100
    - More than 100

11. **In your most recent annual CAPTE report, what percentage of current DPT students identified as Hispanic?**
    - 0-25%
    - 26-50%
    - 51-75%
    - 76-100%

General Question Demographics

12. **Does your DPT program incorporate clinically-relevant Spanish into the curriculum?**
    - Yes
    - No

If YES, continue to the clinically-relevant Spanish section.
If NO, continue to the section for programs not offering clinically relevant Spanish.

Programs offering clinically-relevant Spanish section

13. **Is the clinically-relevant Spanish component of your curriculum based on established second-language acquisition (SLA) research?**
    - ○ Yes
    - ○ No
    - ○ Do not know

14. **Does your DPT program focus on oral/aural proficiency or reading/writing Spanish – or approximately equally both?**
    - ○ Oral/aural proficiency
    - ○ Reading/ writing proficiency
    - ○ Both oral/aural and reading/writing proficiency approximately equally

15. **Which of the following does your program primarily focus on:**
    - ○ Grammar instruction
    - ○ Communicative activities
    - ○ Both grammar instruction and communicative activities

16. **What types of Spanish courses or Spanish-related experiences are offered at your institution? Select all that apply:**
    - ☐ Required course
    - ☐ Elective course
    - ☐ Part of elective course not devoted to clinically-relevant Spanish
    - ☐ Domestic service-learning with Spanish-speaking individuals
    - ☐ International service-learning with Spanish-speaking individuals
    - ☐ International clinical education in Spanish-speaking country
    - ☐ Other domestic immersion experience in Spanish-speaking community
    - ☐ Other international immersion experience in Spanish-speaking country
    - ☐ Other

17. **Are students divided into different levels based on their current oral proficiency?**
    - ○ Yes
    - ○ No

    If yes, then, ***which proficiency levels are the students divided into****?*

Select all that apply:
    - ☐ Beginner
    - ☐ Intermediate
    - ☐ Advanced
    - ☐ Native
    - ☐ Other: _____

18. **Who teaches the clinically-relevant Spanish portion of the curriculum?**
    - ○ Core DPT faculty member(s)

- Adjunct faculty who is a PT clinician
- Adjunct faculty who is not a PT clinician
- Commercial language company
- Other: _____

19. **Does your DPT program utilize both language instructors with exposure to medical contexts and bilingual clinician instructors who have experience with second-language acquisition (SLA) methodology?**
    - Yes
    - No

20. **Does the instructing faculty/personnel collaborate with language professionals and/or applied linguists?**
    - Yes
    - No

21. **Select all of the methods of instruction/learning that are used by the instructing faculty:**
    - ☐ Lecture-based
    - ☐ Student role play
    - ☐ Standardized patients
    - ☐ Clinic-based instruction
    - ☐ General Spanish textbook
    - ☐ Spanish textbook written for physical therapy professionals
    - ☐ Other: ____

22. **Do you evaluate the student's Spanish proficiency before the Spanish course?**
    - Yes
    - No

*If **yes**, please select all that apply:*

- ☐ Oral exam
- ☐ Written exam
- ☐ Simulation
- ☐ Other:_____

23. **How is the student's Spanish proficiency evaluated during the Spanish course(s)? Select all that apply:**
    - ☐ Pre-test and post-test
    - ☐ Post-test only
    - ☐ Oral exam
    - ☐ Written exam
    - ☐ Written assignments
    - ☐ Faculty-observed patient interviews

- ☐ Standardized tool
- ☐ Other:_____

24. **Does your program use a standardized assessment of Spanish proficiency (that has been determined to be valid and reliable) to evaluate student progress?**
    - ○ Yes
    - ○ No

*If **yes**, please select all that apply:*

- ☐ American Council on the Teaching of Foreign Languages (ACTFL)
- ☐ Oral Proficiency Interview (OPI)
- ☐ Physical Therapy Spanish Proficiency Measure (PT-SPM)
- ☐ Other:_____

25. **After the student completes the Spanish course(s), do you continue to assess their improvement in Spanish?**
    - ○ Yes
    - ○ No

*If **yes**, please select all that apply:*

- ☐ Oral exam
- ☐ Written exam
- ☐ Written assignments
- ☐ Faculty-observed patient interviews
- ☐ Standardized tool
- ☐ Other:_____

26. **What influenced your program to incorporate clinically-relevant Spanish into the curriculum? Select all that apply:**
    - ☐ Spanish-speaking population in the US
    - ☐ Student(s) advocated for Spanish to be incorporated
    - ☐ Desire to serve the program's community
    - ☐ Other:_____

Programs not offering clinically-relevant Spanish section

27. **Has your program offered clinically-relevant Spanish in the past?**
    - ○ Yes
    - ○ No

28. **Whether or not your program has offered Spanish in the past, what are barriers to offering clinically-relevant Spanish education? Select all that apply:**
    - ☐ Lack of personnel to teach clinically-relevant Spanish
    - ☐ Students not interested in learning Spanish

- ☐ No room in the curriculum to offer clinically-relevant Spanish education
- ☐ Other:_____

29. **Are there opportunities at the institution (outside of the DPT program) where students could take a clinically-relevant Spanish course?**
    - Yes
    - No

30. **Have past or current DPT students advocated to have clinically-relevant Spanish incorporated into the DPT curriculum?**
    - Yes
    - No

31. **What is the likelihood of offering clinically-relevant Spanish in your institution in the next 5 years?**

Scale of 0-10 with 0 being extremely unlikely and 10 being extremely likely.

- ____ out of 10