



**TEXAS WOMAN'S**  
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# Development, content validity, and scale reliability of the Physical Therapy Social Determinants of Health Survey

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# Professional Declarations

## Funding

- APTA Academy of Leadership and Innovation (ALI) Research Grant
- TWU Center for Student Research Grant

## Affiliations

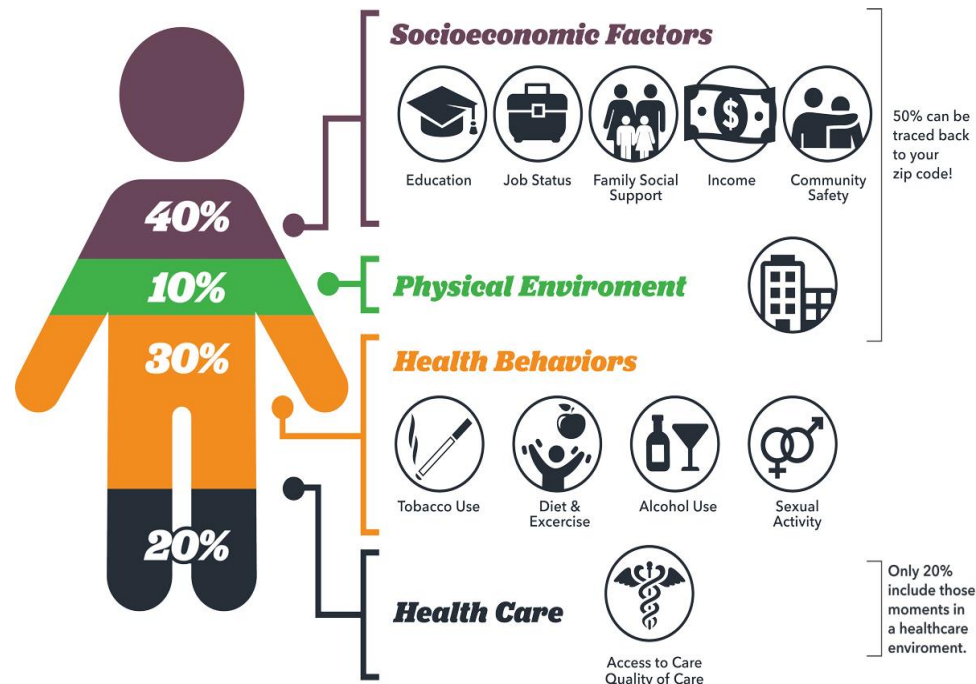
- Texas Woman's University, School of Physical Therapy, Houston
  - Dr. Rupal M Patel and Dr. Elise Bjork
- Duke University, Durham, NC
  - Dr. Zachary Rethorn
- University of St. Augustine for Health Sciences, Austin, Texas
  - Dr. Elise Bjork

## Conflicts of Interest

- None to declare

# Introduction

- Social determinants of health (SDOH)
  - Conditions in the environments where people are born, live, learn, work, play, and worship<sup>1</sup>
- Impacts of SDOH<sup>2-9</sup>
  - Affects an individual's health
    - Functional ability
    - Quality of life
    - Risks
  - Contributes to health disparities
  - Increases cost of healthcare
- SDOH are closely intertwined with various social structures, systems of power, and ideologies<sup>2-9</sup>



Source: Institute for Clinical Systems Improvement, Going Beyond Clinical Walls: Solving Complex Problems (October 2014)

# 2023 CAPTE Standards<sup>10</sup>

- **PT 6D5/PTA 6C:** “The curriculum includes health care disparities, social determinants of health, and JEDI, belonging, and anti-racism.”
- **PT 7D13/PTA 7D6:** “Educate others, using teaching methods that are commensurate with the needs of the learner, including participation in the clinical education of students. Incorporate cultural humility and social determinants of health when providing patient and/or caregiver education.”
- **PT 7D22B/PTA 7D11:** “Provide physical therapy services that address: Health care disparities and social determinants of health.”

# Literature Review

- Addressing SDOH is not yet a common practice in physical therapy<sup>11-12</sup>
- Currently, there are a variety of methods for incorporating this content into medical programs<sup>11-16</sup>
  - Content design
  - Curricular threading
  - Negotiating personal and population-based attitudes/beliefs about SDOH
    - Few recommendations for design and implementation in DPT programs
- Training programs are heterogenous and instruments to rigorously evaluate trainee and clinician behavior related to SDOH are lacking<sup>12,18</sup>
- ACAPT Task Force to develop a systems approach to SDOH in Physical Therapy curricula

## Problem

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SDOH have a large effect on health outcomes<sup>2-9</sup>

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CAPTE is newly requiring PT/PTA programs to teach content on SDOH<sup>10</sup>

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Educational interventions are heterogenous<sup>17-22</sup> and minimal literature exists on how SDOH content is currently taught in DPT programs

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No evaluation of SDOH educational interventions in DPT programs has occurred

## Need

To establish a tool that can measure change in students' knowledge, attitudes, and beliefs about SDOH as they matriculate through the DPT program

# Study Purpose

To describe the development and establishment of the content validity and scale reliability of the Physical Therapy Social Determinants of Health Survey (PT-SDHS), a novel tool for assessing student's knowledge, attitudes, and beliefs about SDOH



# Methods

## Development of the PT-SDHS by co-authors ZDR and RMP

- Utilized the Association for Medical Education in Europe (AMEE) best practices for developing questionnaires for educational research<sup>19</sup>
- Guided by a similar instrument used among pediatric resident physicians<sup>20-22</sup>
- Created the 1<sup>st</sup> draft of the PT-SDHS

## Establishment of content validity

- Solicited content experts to review 1<sup>st</sup> draft of PT-SDHS
- Conducted two rounds of content validation by 8 experts
- Revised draft 1 based on content validity results

# Methods

- **Establishment of scale reliability**
  - Draft 2 of PT-SDHS administered to Doctor of Physical Therapy (DPT) students at two universities
    - Convenience sample of students
    - DPT students recruited via email
    - Participation incentive provided through APTA ALI grant
    - PT-SDHS administered via electronic survey
      - Administered once in Fall 2022 and once in Spring 2023
      - Open for three weeks each time with one reminder email
  - N= 263 respondents

# Data Analysis

- **Content validity**

- Quantitative: Item- and scale-content validity index measures and modified kappa statistics
- Qualitative: clarity and comprehensiveness of the PT-SDHS

- **Scale reliability**

- A priori power analysis: 200-300 student participants
  - Sample size of 200+ is commonly accepted for Exploratory Factor Analysis (EFA)<sup>23</sup>
  - Sample size of 5-10 cases per item<sup>23</sup>
- EFA with Cronbach's alpha to determine the number and type of factors assessed by the PT-SDHS

# Results – Content Validity

- Eight experts included in panel
- High item content validity
  - I-CVI range: 0.86 to 1
- High scale content validity
  - S-CVI/UA = 0.83
  - S-CVI/Ave = 0.98
- High clarity and comprehensiveness qualitatively
- After expert validation, the PT-SDHS consisted of 30 items with five ordinal answer choices.

# Results - Scale Reliability

- 254 final responses on the PT-SDHS
  - 263 complete responses
    - 9 duplicate responses removed
- Factor analysis revealed five content domains, all with satisfactory to excellent reliability
- Factor loadings  $> 0.4$  were accepted

Factors	Number of Items	Range of Rotated Factor Loading	Percent of Explained Variance	Cronbach's alpha
Knowledge	12	.766-.871	31.68	0.96
Attitudes	7	.717-.869	17.54	0.93
Beliefs About Others	2	.796-.806	8.30	0.87
Professional Training	2	.606-.715	3.54	0.84
Personal Barriers	6	.404-.716	2.57	0.71

# Results – Scale Reliability

- One item did not load onto any of the five factors
  - Removed:
    - “I do not have any barriers discussing social determinants of health with patients”
- Two items cross-loaded onto multiple factors
  - Removed:
    - “I do not have knowledge”
    - “I received enough training during my professional education to provide resources and referrals to patients for social determinants of health”
- Final PT-SDHS: 27 items

# Discussion

The PT-SDHS is the first and only valid and reliable instrument designed to assess DPT students' knowledge, attitudes, beliefs, training, and barriers in addressing SDOH

- Compare to:
  - Pediatric Resident SDOH Surveys<sup>20-22</sup>
    - Reviewed by experts from the Medical Education Research Group of the Cincinnati Children's Hospital Medical Center for content validity
    - Qualitative reports on content validity only
    - No scale reliability reported
  - Addressing Client Needs with Social Determinants of Health Scale (ACN: SDH)<sup>24</sup>
    - Assessed in healthcare providers (primarily mental/behavior health specialists)
    - Focuses on clinician competency with SDOH
    - 22-item instrument with six factors and comparable reliability estimates ( $\alpha=.79$  to  $.94$ )

# Discussion

## Strengths

- Good generalizability for use among DPT students as the student sample involved multiple cohorts of students from two universities (one public, one private) with multiple campuses in varying geographic locations

## Limitations

- Only tested in DPT students so generalizability to licensed clinicians (PTs and PTAs) and PTA students is limited



# Conclusion

- The PT-SDHS is the first valid and reliable instrument to measure DPT students' knowledge, attitudes, beliefs, training, and barriers to addressing SDOH
- The PT-SDHS could be useful in assessing the effectiveness of educational interventions about SDOH within DPT curricula

# Questions?

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PT-SDHS



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