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## Prioritizing and measuring social awareness within cultural competence education: An act to mitigate health disparities

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### Abstract

As the population of the United States is diversifying, the prevalence of cross-cultural scenarios in healthcare is increasing. Cross-cultural healthcare interactions contribute to health disparities among underrepresented populations. Cultural competence education is an identified strategy to mitigate these health disparities. Awareness remains a central construct in many frameworks to mitigate health disparities. Therefore, the problem that was addressed by this study was the identified need to promote awareness in physical therapy programs as a strategy to mitigate health disparities among underrepresented populations. The purpose of this quantitative pre-test, post-test quasi-experimental study was to measure Doctor of Physical Therapy students' social awareness before and after completing an awareness-based educational module. The results of this study indicate that an awareness-based module did not impact Doctor of Physical Therapy students' eight forms of social awareness. However, there were significant changes in some between and within-group comparisons for six forms of social awareness.

**Keywords:** Physical therapy students, cultural competency education, health disparities, physical therapy programs, social awareness

### Introductions

As the United States population diversifies, it is critical to prepare healthcare providers to provide efficient and effective patient-centered care in cross-cultural scenarios <sup>[1]</sup>. To deliver patient-centered care, providers cannot ignore patients' race, ethnicity, religion, gender, sexual orientation, age, socioeconomic status, education, primary language, ability, or geographic background <sup>[2]</sup>. These various components of an individual's identity can impact their understanding of medicine and comfort with healthcare providers <sup>[2]</sup>. Brottman *et al.*, <sup>[2]</sup> further delineated that healthcare providers' lack of cultural understanding can lead to poor health outcomes and health disparities for patients.

The Office of Disease Prevention and Health Promotion <sup>[3]</sup> reinforced the prevalence of poor health outcomes among vulnerable populations. Marja and Suvi <sup>[4]</sup> recognized contributing factors to healthcare vulnerability, including identifying as female-gendered or as a racial or ethnic minority. Other contributing factors to vulnerability include belonging to a particular religion or a lower socioeconomic class, having a disability, or identifying as a non-cis heterosexual sexual orientation <sup>[4]</sup>. Regardless of the diversity category, everyone seeking healthcare has unique identities, values, and beliefs. Due to the sheer volume of diverse groups and unique individuals within vulnerable groups, it is unrealistic to expect healthcare providers to learn about every social or cultural group to provide effective and individualized care. Individuality can challenge healthcare providers to determine how to best meet the individualized needs of patients <sup>[2]</sup>.

Despite the challenges of providing patient-centered care to every individual seeking healthcare, the literature supports cultural competence education as a strategy to mitigate ongoing health disparities of underrepresented populations <sup>[3, 5]</sup>. Marja and Suvi <sup>[4]</sup> highlighted cultural competence education as a strategy to uphold healthcare providers' ethical duty to provide patient-centered care. Cultural competence education improves healthcare providers' cultural knowledge, attitudes toward members of underrepresented populations, and skills to effectively provide patient-centered care in cross-cultural scenarios <sup>[5-7]</sup>.

Although culturally competent healthcare providers are critical for the health of society, due to the complexity of cultural competence, the literature has not identified the best cultural competence education framework [2, 6, 8]. Current cultural competence education literature includes vague pedagogical approaches, numerous cultural competence frameworks, and many cultural competence assessment instruments [8]. This heterogeneity in the literature causes educators to be uncertain regarding the most effective way to teach this complex topic [8]. Despite the literature's heterogeneity of cultural competence education, certain constructs reappeared. Numerous cultural competence frameworks, such as the Purnell Model of Cultural Competence [9] and the Process of Cultural Competence for Delivery of Healthcare Services (PCCDHS) [10], emphasized the same key constructs.

Cultural awareness is a common construct that reappears in numerous cultural competence frameworks. Cultural awareness requires healthcare providers to be self-aware and examine their biases, prejudices, and stereotypes of others who are different [10]. Furthermore, cultural awareness requires providers to overcome these biases and stereotypes in cross-cultural scenarios [2, 10, 11]. Hagiwara *et al.*, [12] and White *et al.*, [11] highlighted healthcare providers' implicit biases as key contributing factors to the prevailing health disparities among underrepresented populations. Although primarily focused on medical students, White *et al.*, [11] suggested self-awareness as a missing key element in many health provider program curriculums. Therefore, becoming aware of unconscious biases and then overcoming these biases is critical for healthcare providers to thrive in the diversifying 21<sup>st</sup> century.

The identified crucial need for awareness, incorporating self-awareness, among healthcare providers aligns with the strategy of promoting cultural competence education to mitigate health disparities among underrepresented populations. As healthcare providers, PT educators must include and emphasize cultural competence education, specifically the construct of awareness, in their programs' curricula [13]. Emphasizing the construct of cultural awareness within a cultural competence framework, in a Doctor of Physical Therapy (DPT) program is critical for the health of society [13]. Therefore, the purpose of this quantitative pre-test, post-test quasi-experimental study was to measure DPT students' social awareness before and after completing an awareness-based educational module.

Sheldon [14] defined social awareness as the mental experience in which one configures an abstract depiction of oneself or another person. Thus, social awareness encompasses both self-awareness and other-awareness [14]. Due to the literature highlighting awareness as a strategy to improve future healthcare providers' cultural competence to address ongoing health disparities [2, 11, 12], this study measured graduate DPT students' social awareness before and after completing a cultural competence awareness-based module. Using the PCCDHS as a framework for this cultural competence awareness-based educational module, this study also contributes to the body of literature surrounding the application of the PCCDHS.

### Theoretical Framework

The PCCDHS provides a framework for cultural competence education for health providers and health students [10]. Campinha-Bacote [10] described cultural

competence as a dynamic process in which healthcare providers aspire to effectively work with individuals in cross-cultural scenarios. Campinha-Bacote [15] determined that this model assumes that cultural competence is based on a commitment to social equity, is a process without a destination, is essential to deliver effective patient-centered care, and consists of five interdependent constructs. Furthermore, Campinha-Bacote [15] delineated that cultural encounter is the foundational construct and all encounters are cultural encounters. Moreover, the assumptions of this model explain that cultural groups include groups of individuals extending beyond racial or ethnic groups [15]. Campinha-Bacote [15] further assumed there is intra-cultural variation within and between cultural groups, and there is a direct, positive relationship between a provider's cultural competence and a patient's outcomes [15].

Campinha-Bacote [10] identified five interdependent constructs that are necessary when promoting the growth of cultural competence. These constructs include cultural awareness, cultural knowledge, cultural skill, cultural encounters, and cultural desires [10]. Effective learning within this cultural competence model occurs when integration and repetition of these five constructs occur in various scenarios [16]. Sears *et al.*, [16] reinforced that individuals must experience all five constructs to increase cultural competence. With the cyclical nature of the process, providers will move through the constructs numerous times to progress toward cultural competence [17].

### Cultural Awareness

Similar to the previously defined tenet of awareness, Campinha-Bacote [18] determined that cultural awareness is the systematic, mental process in which providers appreciate and are sensitive to others' beliefs, values, ways of life, and traditions. The APTA [13] identified awareness as a critical first step in providing patient-centered care. Cultural awareness requires the provider to look inward to explore one's cultural background, personal values, and professional values [10]. Cultural awareness includes examining one's biases, prejudices, and stereotypes of others who are different [10]. In addition to analyzing one's biases, one must be aware of the implications of any prejudices on the delivery of care. Without this awareness, healthcare providers, including physical therapists, risk inadvertently allowing their biases and stereotypes to surface within patient-provider relationships and conversations with others. Projected stereotypes can impact patient-provider rapport and prevent the provider from offering best-practice treatment to all individuals.

Cultural awareness also requires providers to be aware of contextual factors present in cross-cultural scenarios that can impact care [11]. The APTA [13] identified awareness as crucial for learning about other cultural dimensions. One must be aware of the various cultural dimensions that can impact health, and thus, healthcare.

### Cultural Knowledge

Campinha-Bacote [10, 18] discussed cultural knowledge as the process of searching and finding objective information about various world views of others who are diverse or different from oneself. Specifically, providers should understand other individuals' health-related beliefs and cultural values, disease prevalence, and treatment effectiveness [10]. It is essential that when developing

cultural knowledge, one does not form a stereotype of a particular group of people based on findings and instead maintain an individualized approach to their research and care.

Healthcare providers, including physical therapists, should embrace differing beliefs and values regarding illness and allow this understanding to play a role in determining individualized care plans. The APTA<sup>[13]</sup> emphasized the explanatory model, where the provider relies on the patient to explain their illness and share their expectations of how they would like it to be treated. Allowing the patient to take a more active and prominent role in their healthcare permits providers to continue to gain cultural knowledge and provide patient-centered care for each individual.

### Cultural Skill

Cultural skill requires healthcare providers to integrate the knowledge of an individual's beliefs and values into the physical assessment<sup>[10]</sup>. Possessing this knowledge and using this skill to conduct a culturally sensitive history-taking is imperative for physical therapists, as this interaction is the foundation of establishing communication and a rapport with each client. As Hagiwara *et al.*<sup>[12]</sup> discussed, communication is a critical cultural competence skill to develop. As implicit biases, prejudices, and stereotypes can surface in verbal and non-verbal communication, providers must be proficient with cross-cultural communication to mitigate their prejudices from surfacing in cross-cultural interactions<sup>[12]</sup>.

Additionally, Campinha-Bacote<sup>[10]</sup> highlighted the importance of healthcare providers understanding how an individual's physical, biological, and physiological variances may change a physical assessment. Physical therapists conduct physical assessments on every patient they work with; therefore, it is crucial to be able to conduct culturally sensitive physical assessments. For example, this may include extra draping or a private treatment room for an individual who values modesty. Additionally, it may be simple knowledge that when observing for signs of infection, a Black patient may not exhibit the same signs of an infection, such as skin redness, as a White patient. Therefore, the physical therapist must rely on other evaluative skills and knowledge of signs on infection to make a clinical decision surrounding the possibility of infection.

### Cultural Encounters

Campinha-Bacote<sup>[10, 18]</sup> identified cultural encounters as healthcare providers' engaging in cross-cultural interactions with individuals from culturally diverse backgrounds. Although the concern for stereotyping groups of individuals based on interactions with an individual from one cultural group is present, cultural encounters are an additional opportunity for healthcare providers to learn about others' cultural beliefs and values<sup>[10]</sup>. Campinha-Bacote<sup>[10]</sup> highlighted that healthcare providers must not assume they are an expert on a cultural group after one cultural encounter with a member of that group. Due to intra-ethnic variation within cultural groups, even after providers have experienced three or four encounters with individuals from one culture, they must be mindful that they are not experts in that one culture<sup>[18]</sup>. Cultural encounters exemplify the process of becoming culturally competent, as this is a continuous, dynamic process without an endpoint.

### Cultural Desire

Cultural desire is the healthcare providers' desire to engage in the process of cultural competence because they have a desire, as opposed to an obligation<sup>[10, 18]</sup>. Cultural desire centers on the concept of caring<sup>[10]</sup>. Furthermore, cultural desire encompasses a healthcare provider's willingness to learn from others and embrace differences between health beliefs, values, and behaviors<sup>[10]</sup>. The idea of cultural desire embodies openness, flexibility, and willingness to learn from others about others. Consistent with the other cultural competence constructs, cultural desire requires a lifelong commitment from the healthcare provider<sup>[10]</sup>.

### Materials and Methods

This study utilized quantitative methodology with a pre-test, post-test quasi-experimental research design. Participants' data were paired in this one-group design, allowing the researcher to look at within-group differences<sup>[19]</sup>.

### Data Collection

Data were collected at a private university in New England. The DPT program at this university was collecting data using the SAI for programmatic assessment. Therefore, some of the data the researcher used were data-in-existence ( $n=53$ ). For the remaining data, the researcher used convenience sampling of graduate DPT students in the Professional Issues I course in their first term of graduate school. Students were eligible to participate in this study if they were enrolled in PT 519, Professional Issues I in the graduate DPT program at a private university in New England during the 2021 and 2022 fall semesters.

Demographic information, including age, sex, ethnicity, and race were collected by the Data Governance group of the University's Registrar's Office. Upon request, demographic data was provided to the PT program's Director of Evaluation and Assessment. The Director of Evaluation and Assessment linked the demographic data to the pre-and post-test SAI scores and provided this data to the researcher. Additionally, the PT program already collects the dependent variable data that are the eight forms of social awareness. Students are asked to respond to the 64 statements of the SAI using a 5-point Likert scale, anchored by "not true (1)", "somewhat true (3)", to "true nearly all the time (5)".

Collecting pre- and post-test SAI data is part of the programmatic assessment. The Director of Evaluation and Assessment of the program has access to the identifying data-in-existence and has access to the identifying data in the fall 2022. To ensure anonymity, the Director of Evaluation and Assessment coded the data and provided the researcher with de-identified data only. The aggregate's average score for pre-and post-intervention data was used to measure if there was a change in each subscale of social awareness as measured by the SAI.

### The Social Awareness Inventory

Cultural competence requires the cultivation of self-awareness and awareness of others' perspectives<sup>[20]</sup>. Both subcategories of awareness are critical in mitigating implicit biases in cross-cultural scenarios<sup>[21]</sup>. Sheldon<sup>[14]</sup> defined social awareness as the mental experience in which one configures an abstract depiction of oneself or another person. With this definition, social awareness encompasses both self-awareness and other-awareness. Due to the all-encompassing nature of social awareness, using the SAI was



appropriate and aligned with the purpose of this study. This social awareness model assumes that social awareness is critical for social self-regulation, as individuals may allow for situational information to guide their actions to identify and minimize situational discrepancies <sup>[14]</sup>. Other assumptions of this social awareness model include that individuals have cognitive habits of understanding social information and these habits result from social motives <sup>[14]</sup>. Using these assumptions and crossing the three elements of social awareness: target, perspective, and content, Sheldon<sup>14</sup> defined and included eight forms of social awareness in the SAI. Sheldon <sup>[14]</sup>, the creator of the SAI, granted written permission to use the SAI in this research. A copy of the inventory is included in the appendix. Sheldon <sup>[14]</sup> outlined three elements that comprise social awareness: a target of attention, an evaluative perspective, and the awareness content. The target is either oneself or another individual. Perspective incorporates framing the target from one's point of view or the others' perspective.<sup>14</sup> Content includes the individual being aware of the target's overt appearance, including physical characteristics and behavior, or covert experiences, such as the target's thoughts and feelings. Overlaying these three elements yields the eight forms of social awareness that Sheldon <sup>[14]</sup> included in the SAI.

#### **Self-Experience from the Self-Perspective**

Sheldon <sup>[14]</sup> categorized the form, self-experience from the self-perspective, under the self-grounded category. Along with the other forms classified as self-grounding, this form of social awareness is associated with empathy. Sheldon<sup>14</sup> highlighted that empathy requires an individual to understand one's own experience and connect with the other's experience. An example of a statement from the SAI that is categorized under this form is, "I think quite a bit about how my experiences have shaped me into the person I am" <sup>[14]</sup>. (p632).

#### **Self-Experience from Other's Perspective**

Sheldon <sup>[14]</sup> categorized the form, self-experience from other's perspective, under the self-divided category. An example of a statement from the SAI that is classified under this form is, "Sometimes I take my cue about what I should think and feel from others around me" <sup>[14]</sup>. (p632) this social awareness form is significantly positively correlated with forms of self-consciousness, social anxiety, neuroticism, and depression <sup>[14]</sup>.

#### **Self-Appearance from Self-Perspective**

The form, self-appearance from self-perspective, is categorized as self-divided awareness and Sheldon<sup>14</sup> asserted that it also correlates with self-consciousness, social anxiety, neuroticism, depression, and narcissism. An example of a statement from the SAI that is categorized under this form of social awareness is, "I am quite self-conscious about my appearance, even if those I am with say I look fine" <sup>[14]</sup>. (p632).

#### **Self-Appearance from Other's Perspective**

Sheldon <sup>[14]</sup> determined self-appearance from other's perspective was the final form of social awareness to fall under the self-divided category. Like the other self-appearance social awareness form, this form is associated with a form of self-consciousness, neuroticism, and

depression. An example of a statement from the SAI that is categorized under this form of social awareness is, "I frequently tailor the way I present myself according to who I am talking to" <sup>[14]</sup>. (p632)

#### **Other's Experience from Self-Perspective**

Sheldon <sup>[14]</sup> categorized the form other's experience from self-perspective as one of the self-grounded forms of social awareness. Although the association was weaker than other forms of social awareness, this form was significantly associated with self-consciousness and empathy <sup>[14]</sup>. Additionally, this was the second of two self-grounded forms of social awareness that showed a significant relationship with neuroticism <sup>[14]</sup>. An example of a statement from the SAI that is categorized under this form of social awareness is, "I often try to come up with my own explanation for why people feel or think a certain way, rather than accepting theirs" <sup>[14]</sup>. (p632).

#### **Other's Experience from Other's Perspective**

Similar to the first form, self-experience from the self-perspective, the form, other's experience from other's perspective is another self-grounded form associated with empathy <sup>[14]</sup>. Sheldon <sup>[14]</sup> suggested that empathic individuals are attentive to experiences from the experiencer's perspective. An example of a statement from the SAI categorized under this form is, "I find it natural to identify with other's needs" <sup>[14]</sup>. (p632).

#### **Other's Appearance from Self-Perspective**

Other's appearance from self-perspective is a self-grounded form of social awareness <sup>[14]</sup>. This form is significantly associated with a form of self-consciousness and narcissism <sup>[14]</sup>. An example of a statement from the SAI that is categorized under this form is, "When people lie to me, I often catch them because their voice and eyes give them away" <sup>[14]</sup>. (p633).

#### **Other's Appearance from Other's Perspective**

Sheldon <sup>[14]</sup> determined other's appearance from other's perspective is the final form of social awareness in the self-grounded category. This social awareness form is significantly associated with self-consciousness and empathy <sup>[14]</sup>. An example of a statement from the SAI that is categorized under this form is, "I can usually pick up the fact that a person is pleased about the way he/she looks" <sup>[14]</sup>. (p633).

#### **Reliability and Validity**

There are 64 statements included in the SAI, with eight statements associated with each of the eight subscales of social awareness <sup>[14]</sup>. All eight SAI subscales of social awareness have good internal consistency (Alpha coefficients > 0.73;) among undergraduate students <sup>[14]</sup>. Upon establishing construct validity, Sheldon <sup>[14]</sup> further grouped the subscales into two categories: self-divided and self-grounded social awareness. Individuals scoring higher in the self-divided forms tend to focus more on themselves as the object of evaluation from other's perspective, therefore, looking outward for information. Sheldon <sup>[14]</sup> identified five self-grounded forms and generalized self-grounded social awareness as individuals who are secure in their established self, looking inward for self-regulatory information. Individuals with high self-grounded scores on

the SAI regulate their behavior based on internal values and view interactions as sources of information <sup>[14]</sup>.

**Analysis of Data**

This study surrounded an educational module embedded within a graduate DPT program. Therefore, all participants of this study participated in the module as part of their curriculum. Additionally, the DPT program collects SAI data as part of its programmatic assessment. The program collected some of the data used for this study in the fall of 2021; therefore, this portion is data-in-existence. The SAI data-in-existence was received from the DPT program’s Director of Evaluation and Assessment for the student cohort who took the educational module in the fall of 2021 ( $n=53$ ).

The DPT program also collected the data during the fall of 2022. Students from the 2022 cohort provided the Director of Evaluation and Assessment with completed participation forms if they were willing to participate in the study. The Director only included the students’ data who were willing

to participate in the study ( $n=77$ ). All data were de-identified by the Director of Evaluation and Assessment before being given to the researcher. Three students repeated the semester and thus repeated the educational module. Their data were used from the first year they participated in the educational module in the fall of 2021 and excluded from the 2022 data set. Additionally, six students did not answer one item on their pre-test, leaving an incomplete inventory. These six students were excluded from the final data set ( $n=121$ ).

DPT students’ pre and post SAI scores from 2021 and 2022 were combined to form one aggregate data set. Additionally, the researcher requested student demographic data, including age, gender, ethnicity, and race.

**Results**

**Descriptive Statistics**

Table 1 includes the demographic data of the two student cohorts combined as one aggregate data set.

**Table 1:** Demographic Data

| Demographic Category            | Number (n) | Percentage (%) | Mean (SD)     |
|---------------------------------|------------|----------------|---------------|
| <b>Gender</b>                   |            |                |               |
| No response                     | 1          | 0.8            |               |
| Male                            | 33         | 27.3           |               |
| Female                          | 87         | 71.9           |               |
| <b>Ethnicity</b>                |            |                |               |
| No response                     | 9          | 7.4            |               |
| Hispanic                        | 7          | 5.8            |               |
| Non-Hispanic                    | 105        | 86.8           |               |
| <b>Race</b>                     |            |                |               |
| No response                     | 10         | 8.3            |               |
| Asian                           | 6          | 5.0            |               |
| Asian/White                     | 4          | 3.3            |               |
| Black or African American       | 1          | 0.8            |               |
| White                           | 99         | 81.8           |               |
| White/Hawaiian/Pacific Islander | 1          | 0.8            |               |
| <b>Age</b>                      |            |                |               |
| No response                     | 7          | 5.8            |               |
| 20                              | 1          | 0.8            |               |
| 21                              | 27         | 22.3           |               |
| 22                              | 60         | 49.6           |               |
| 23                              | 21         | 17.4           |               |
| 24                              | 5          | 4.1            |               |
| Total                           | 121        |                | 22.02 (0.798) |

**Research Question One: Self-Experience from the Self-Perspective**

The first research question asked if there is a difference in the social awareness form, self-experience from the self-perspective, as measured by the SAI before and after taking a cultural competence awareness-based educational module among graduate DPT students. There is no significant difference ( $p=.344$ ) in the social awareness form, self-experience from self-perspective.

As presented in Table 2 below, there was a significant difference ( $p=.006$ ) between females and males for the social awareness form, self-experience from self-perspective. However, when considering change over time by sex, there was no significant difference ( $p=.398$ ) between females and males. Additionally, there was a significant change over time between racial groups ( $p=.027$ ; shown in

Table 2).

**Table 2:** Repeated Measures Within and Between Subjects: Demographics

| Source         | Significance (p-value) |
|----------------|------------------------|
| Time*Sex       | .398                   |
| Sex            | .006                   |
| Time*Ethnicity | .611                   |
| Ethnicity      | .795                   |
| Time*Race      | .027                   |
| Race           | .983                   |
| Time*Age       | .154                   |
| Age            | .573                   |

Females had significantly higher mean scores than males, as noted by the estimated marginal means displayed in Table 3.

**Table 3:** Repeated Measures Estimated Marginal Means: Sex

| Source | Mean  | Std. Error | 95% Confidence Interval |             |
|--------|-------|------------|-------------------------|-------------|
|        |       |            | Lower Bound             | Upper Bound |
| Sex    |       |            |                         |             |
| Female | 3.976 | 0.055      | 3.867                   | 4.084       |
| Male   | 3.680 | 0.089      | 3.503                   | 3.857       |

When looking at the within-group differences for race by time ( $p=.027$ ), there was a significant change in pre-and post-test scores for Asian students ( $p=.005$ ; as seen in Table

4). All other racial groups had no significant changes over time.

**Table 4:** Repeated Measures Estimated Marginal Means and Pairwise Comparisons: Race

| Source                          | Time | Mean Difference | Std. Error | 95% Confidence Interval |             | Sig. ( $p$ -value) |
|---------------------------------|------|-----------------|------------|-------------------------|-------------|--------------------|
|                                 |      |                 |            | Lower Bound             | Upper Bound |                    |
| Race                            |      |                 |            |                         |             |                    |
| No Response                     | Pre  | 3.667           | 0.207      | 3.257                   | 4.077       | .136               |
|                                 | Post | 3.917           | 0.187      | 3.545                   | 4.288       |                    |
| Asian                           | Pre  | 4.125           | 0.253      | 3.623                   | 4.627       | .005               |
|                                 | Post | 3.542           | 0.230      | 3.087                   | 3.996       |                    |
| Asian/White                     | Pre  | 4.094           | 0.310      | 3.479                   | 4.709       | .533               |
|                                 | Post | 3.938           | 0.281      | 3.381                   | 4.494       |                    |
| Black or African American       | Pre  | 4.000           | 0.621      | 2.770                   | 5.230       | 1.000              |
|                                 | Post | 4.000           | 0.562      | 2.886                   | 5.114       |                    |
| White                           | Pre  | 3.915           | 0.062      | 3.792                   | 4.039       | .599               |
|                                 | Post | 3.889           | 0.057      | 3.777                   | 4.001       |                    |
| White/Hawaiian/Pacific Islander | Pre  | 4.250           | 0.621      | 3.020                   | 5.480       | .083               |
|                                 | Post | 3.375           | 0.562      | 2.261                   | 4.489       |                    |

**Research Question Two: Self-Experience from Other’s Perspective**

The second research question asked if there is a difference in the social awareness form, self-experience from other’s perspective, as measured by the SAI before and after taking a cultural competence awareness-based educational module among graduate DPT students. The two-sided  $p$ -value was .113, indicating no significant difference between DPT students’ pre-and post-test scores for the social awareness form, self-experience from other’s perspective.

Table 5 presents the within and between-group comparisons for the social awareness form, self-experience from the other’s perspective. As seen in Table 5, there was a significant difference in mean scores between females and males ( $p=.020$ ); however, when considering the change over time by sex, there was no significant difference ( $p=.343$ ).

Additionally, as seen in Table 5, there was a significant difference when comparing ethnic groups by time ( $p=.021$ ).

**Table 5:** Repeated Measures Within and Between Subjects: Demographics

| Source         | Significance ( $p$ -value) |
|----------------|----------------------------|
| Time*Sex       | .343                       |
| Sex            | .020                       |
| Time*Ethnicity | .021                       |
| Ethnicity      | .483                       |
| Time*Race      | .110                       |
| Race           | .467                       |
| Time*Age       | .178                       |
| Age            | .797                       |

Females had significantly higher mean scores than males, as noted by the estimated marginal means displayed in Table 6.

**Table 6:** Repeated Measures Estimated Marginal Means: Sex

| Source | Mean  | Std. Error | 95% Confidence Interval |             |
|--------|-------|------------|-------------------------|-------------|
|        |       |            | Lower Bound             | Upper Bound |
| Sex    |       |            |                         |             |
| Female | 2.968 | 0.063      | 2.842                   | 3.093       |
| Male   | 2.684 | 0.103      | 2.480                   | 2.887       |

Table 7 presents the estimated marginal means and pairwise comparisons for ethnicity. As shown in Table 7, the participants who did not list an

ethnic group ( $n= 9$ ) had a significant change ( $p=.037$ ) in the social awareness form, self-experience from the other’s perspective.

**Table 7:** Repeated Measures Estimated Marginal Means and Pairwise Comparisons: Ethnicity

| Source      | Time | Mean  | Std. Error | 95% Confidence Interval |             | Sig. ( $p$ -value) |
|-------------|------|-------|------------|-------------------------|-------------|--------------------|
|             |      |       |            | Lower Bound             | Upper Bound |                    |
| Ethnicity   |      |       |            |                         |             |                    |
| No Response | Pre  | 2.469 | 0.236      | 2.001                   | 2.937       | .037               |
|             | Post | 2.844 | 0.226      | 2.397                   | 3.291       |                    |
| Hispanic    | Pre  | 2.964 | 0.253      | 2.464                   | 3.465       | .113               |

|              |      |       |       |       |       |      |
|--------------|------|-------|-------|-------|-------|------|
|              | Post | 2.661 | 0.241 | 2.183 | 3.138 |      |
| Not Hispanic | Pre  | 2.960 | 0.065 | 2.830 | 3.089 | .057 |
|              | Post | 2.865 | 0.062 | 2.742 | 2.989 |      |

**Research Question Three: Self-Appearance from the Self-Perspective**

The third research question asked if there is a difference in the social awareness form, self-appearance from self-perspective, as measured by the SAI before and after taking a cultural competence awareness-based educational module among graduate DPT students. There was no significant difference ( $p=.277$ ) in social awareness form, self-appearance from the self-perspective, after DPT students took a cultural competence awareness-based module.

When examining within and between group comparisons, there was a significant difference ( $p=.015$ ) when comparing sex (shown in Table 8). Additionally, Table 8 shows that when comparing ages over time, there was a significant difference ( $p=.005$ ) between ages.

**Table 8:** Repeated Measures Within and Between Subjects: Demographics

| Source         | Significance ( <i>p</i> -value) |
|----------------|---------------------------------|
| Time*Sex       | .379                            |
| Sex            | .015                            |
| Time*Ethnicity | .214                            |
| Ethnicity      | .418                            |
| Time*Race      | .250                            |
| Race           | .819                            |
| Time*Age       | .005                            |
| Age            | .449                            |

Females had significantly higher scores than males, as noted by the estimated marginal means displayed in Table 9.

**Table 9:** Repeated Measures Estimated Marginal Means: Sex

| Source     | Mean  | Std. Error | 95% Confidence Interval |             |
|------------|-------|------------|-------------------------|-------------|
|            |       |            | Lower Bound             | Upper Bound |
| <b>Sex</b> |       |            |                         |             |
| Female     | 3.315 | 0.076      | 3.164                   | 3.465       |
| Male       | 2.958 | 0.123      | 2.714                   | 3.202       |

When running a linear regression analysis for the change in time by age, for every year that age increased, the change in scores increased by 0.154; thus, older students reported greater change than younger students.

**Research Question Four: Self-Appearance from the Other’s Perspective**

The fourth research question asked if there is a difference in the social awareness form, self-appearance from other’s perspective, as measured by the SAI before and after taking a cultural competence awareness-based educational module among graduate DPT students. There is no significant difference ( $p=.615$ ) in DPT students’ pre- and post-test SAI scores for the social awareness form, self-appearance from other’s perspective.

When examining within and between group comparisons, there was a significant difference ( $p=.005$ ) when comparing sex (Table 10).

**Table 10:** Repeated Measures Within and Between Subjects: Demographics

| Source         | Significance ( <i>p</i> -value) |
|----------------|---------------------------------|
| Time*Sex       | .708                            |
| Sex            | .005                            |
| Time*Ethnicity | .167                            |
| Ethnicity      | .656                            |
| Time*Race      | .411                            |
| Race           | .770                            |
| Time*Age       | .051                            |
| Age            | .680                            |

Females had significantly higher mean scores compared to males, as noted by the means displayed in Table 11.

**Table 11:** Repeated Measures Estimated Marginal Means: Sex

| Source     | Mean  | Std. Error | 95% Confidence Interval |             |
|------------|-------|------------|-------------------------|-------------|
|            |       |            | Lower Bound             | Upper Bound |
| <b>Sex</b> |       |            |                         |             |
| Female     | 3.327 | 0.074      | 3.179                   | 3.474       |
| Male       | 2.920 | 0.121      | 2.681                   | 3.160       |

**Research Question Five: Other’s Experience from the Self-Perspective**

The fifth research question asked if there is a difference in the social awareness form, other’s experience from self-perspective, as measured by the SAI before and after taking a cultural competence awareness-based educational module among graduate DPT students. There is no significant difference ( $p=.807$ ) in DPT students’ pre- and post-test SAI scores for the social awareness form, other’s experience from the self-perspective after taking a cultural competence awareness-based educational module. Furthermore, there were no significant within or between-group comparisons when examining the social awareness form, other’s experience from the self-perspective.

**Research Question Six: Other’s Experience from the Other’s Perspective**

The sixth research question asked if there is a difference in the social awareness form, other’s experience from other’s perspective, as measured by the SAI before and after taking a cultural competence awareness-based educational module among graduate DPT students. There is no significant difference ( $p=.631$ ) in DPT students’ pre- and post-test SAI scores for the social awareness form, other’s experience from the other’s perspective. Furthermore, there were no significant within or between-group comparisons when examining the social awareness form, other’s experience from the other’s perspective.

**Research Question Seven: Other’s Appearance from the Self-Perspective**

The seventh research question asked if there is a difference in the social awareness form, other’s appearance from self-perspective, as measured by the SAI before and after taking a cultural competence awareness-based educational module among graduate DPT students. There was no significant



difference ( $p=.626$ ) in DPT students' pre- and post-test SAI scores for the social awareness form, other's appearance from the self-perspective.

Table 12 shows the within and between demographic group comparisons, in which the change over time between ages had a significant difference ( $p=.037$ ).

**Table 12:** Repeated Measures Within and Between Subjects: Demographics

| Source         | Significance ( $p$ -value) |
|----------------|----------------------------|
| Time*Sex       | .449                       |
| Sex            | .093                       |
| Time*Ethnicity | .715                       |
| Ethnicity      | .308                       |
| Time*Race      | .457                       |
| Race           | .314                       |
| Time*Age       | .037                       |
| Age            | .384                       |

When running a linear regression analysis for the change in time by age, for every year that age increased, the change in scores increased by 0.111; thus, older students reported a greater change than younger students.

**Research Question Eight: Other's Appearance from the Other's Perspective**

The eighth research question asked if there is a difference in the social awareness form, other's appearance from other's perspective, as measured by the SAI before and after taking a cultural competence awareness-based educational module among graduate DPT students. There were no significant differences ( $p=.089$ ) in the social awareness form, other's appearance from the other's perspective, after DPT students took a cultural competence awareness-based educational module.

Table 13 shows the within and between group comparisons for the social awareness form, other's appearance from the other's perspective. When looking within and between groups, there was a significant difference ( $p=.025$ ) when considering change over time by age.

**Table 13:** Repeated Measures Within and Between Subjects: Demographics

| Source         | Significance ( $p$ -value) |
|----------------|----------------------------|
| Time*Sex       | .070                       |
| Sex            | .313                       |
| Time*Ethnicity | .522                       |
| Ethnicity      | .358                       |
| Time*Race      | .418                       |
| Race           | .935                       |
| Time*Age       | .025                       |
| Age            | .806                       |

When running a linear regression analysis for the change in time by age, for every year that age increased, the change in scores increased by 0.152; thus, older students reported a greater change than younger students.

**Discussion**

**Research Question One: Self-Experience from the Self-Perspective**

The social awareness form, self-experience from the self-perspective, is one of the most frequently reported forms, as outlined by the SAI [14]. The author explained that most

individuals define themselves in terms of their own feelings and thoughts. This form of social awareness positively correlates with private self-consciousness, neuroticism, and cognitive and emotional empathy.

Data analyses showed no significant difference ( $p=.344$ ) in the social awareness form, self-experience from the self-perspective. However, there was a significant difference ( $p=.006$ ) when comparing SAI scores between sexes. Females had significantly higher mean scores than males (females: 3.976, males: 3.680). These results suggested that the females in this study tended to be more concerned with personal autonomy than males. Sheldon [14] discussed that the self-focus associated with this first form of social awareness is harmless, as it indicates the individual considers one's private experience using one's values and perspective.

Furthermore, the results of this study suggested that the female DPT students defined themselves in terms of their feelings and thoughts more than males. Likewise, the female DPT students in this study reported higher levels of private self-consciousness. Higher levels of private self-consciousness indicate a higher ability to understand their feelings and focus on their inner thoughts [14].

Widiger and Oltmanns [22] also highlighted a relationship between self-consciousness and neuroticism, which Sheldon [14] associated with the social awareness form, self-experience from the self-perspective. Thus, the female DPT students in this study reported higher mean levels of neuroticism than males. Widiger and Oltmanns [22] further discussed that individuals who reported higher levels of neuroticism had a poorer response to environmental stress. In the context of the purpose of this study, higher levels of neuroticism could be a less desirable trait in future healthcare providers, as healthcare scenarios are filled with unpredictable stressors. Thus, healthcare providers who report higher levels of neuroticism may respond less favorably in stressful scenarios.

Self-experience from the self-perspective also positively correlates with empathy [14]. The female DPT students reported higher mean scores in this subscale of social awareness, indicating more empathy and a better ability to connect with others' experiences than the male students in this study. When considering the problem that prompted this study, specifically the need to integrate self-awareness and other-awareness into health professional programs to mitigate ongoing health disparities, empathy and the ability to connect with others' experiences are desirable traits.

When considering other within and between-group comparisons for this subscale of social awareness, Asian students ( $n=6$ ) had a significant change ( $p=.005$ ) in the social awareness form, self-experience from the self-perspective. When examining the significant change over time among Asian students, the mean scores decreased significantly from pre- to post-test scores. Thus, this awareness-based educational module appeared to significantly decrease Asian students' private self-consciousness, neuroticism, and empathy. Therefore, the results suggest that after participating in this educational module, Asian students were less likely to define themselves regarding their thoughts and feelings than they were before participating in the awareness-based educational module. These results may indicate that the educational module decreased these students' feelings of being self-grounded, personally autonomous, self-conscious, neurotic, and empathic.



### Research Question Two: Self-Experience from Other's Perspective

Sheldon <sup>[14]</sup> categorized self-experience from other's perspective as the first of three self-divided forms of social awareness. All three self-divided forms of social awareness maintain oneself as the target. Additionally, this subscale of social awareness is from the other's perspective, indicating individuals with high scores in this subscale may value external perspectives to define themselves. Individuals with higher scores in this subscale of social awareness also reported higher levels of private self-consciousness. Additionally, individuals scoring higher in this form of social awareness have higher social anxiety, neuroticism, and depression. Finally, Sheldon<sup>14</sup> highlighted that this form of social awareness is also associated with emotional and cognitive empathy.

Data analyses showed no significant difference ( $p=.113$ ) in the social awareness form, self-experience from the other's perspective. However, there was a significant difference between the sexes ( $p=.020$ ). Females had a mean score of 2.968, and males had a mean score of 2.684 for the social awareness form, self-experience from the other's perspective. Therefore, the results of this study suggest that females reported higher levels of private self-consciousness, social anxiety, neuroticism, depression, and emotional and cognitive empathy than males. Similar to the previous form of social awareness associated with empathy, females characteristically report higher levels of empathy than males <sup>[23]</sup>. Thus, these results are consistent with previous literature.

Additionally, when further considering the associations with this form of social awareness and comparing females to males, females had a higher mean score in this self-divided social awareness form. Sheldon <sup>[14]</sup> described those with higher self-divided scores as individuals who seek to gain information from others to guide their social behaviors. The results of this study suggest that females were more likely than males to look external to themselves for information to regulate their behaviors in social scenarios. Based on the problem that prompted this study, healthcare providers' biases impacting the care of underrepresented populations, higher self-divided scores would be desirable for future healthcare providers. Higher self-divided scores may indicate that those individuals are more likely to consider others' perspectives in cross-cultural scenarios. Valuing others' perspectives in cross-cultural scenarios is critical to maintaining patient-centered care, as everyone has unique health values, beliefs, and behaviors <sup>[2, 6]</sup>. In cross-cultural scenarios, differences in healthcare providers' and individuals' health-related beliefs can lead to mistrust in a provider <sup>[2]</sup>. This mistrust can lead to decreased compliance with care plans set forth by the provider, potentially reducing health outcomes <sup>[2]</sup>. Therefore, in theory, valuing others' thoughts and beliefs would mitigate this downward spiral and support health equity.

When analyzing other between-group differences, there was a significant difference when comparing ethnic groups by time ( $p=.021$ ) for the form, self-experience from other's perspective. Participants who did not list an ethnic group ( $n= 9$ ) had a significant change ( $p=.037$ ) in this social awareness form. Other ethnic groups (Hispanic and Not Hispanic) had no significant difference in this social awareness form. Due to the significant positive change in students, who did not report an ethnic group, SAI subscale

results indicate that these students reported significantly higher levels of numerous personality traits after participating in an awareness-based educational module. These traits include private self-consciousness, social anxiety, neuroticism, depression, and emotional and cognitive empathy.

### Research Question Three: Self-Appearance from the Self-Perspective

Sheldon <sup>[14]</sup> categorized self-appearance from the self-perspective as the second self-divided form of social awareness, maintaining oneself as the target from the self-perspective. Individuals who reported higher scores in this subscale of social awareness also have higher levels of public self-consciousness, where they tend to place their perspective above others'. Additionally, individuals scoring higher in this form of social awareness have higher levels of neuroticism, depression, and narcissism.

Data analyses showed no significant difference ( $p=.277$ ) in the social awareness form, self-appearance from the self-perspective. However, there was a significant difference between the sexes ( $p=.015$ ). Females had a mean score of 3.315, and males had a mean score of 2.958 for the social awareness form, self-appearance from the self-perspective. Therefore, based on the associations with personality traits, as outlined by Sheldon <sup>[14]</sup>, the results of this study suggest that the females reported higher levels of public self-consciousness, neuroticism, depression, and narcissism than the males in this study. As seen by the overlap of personality traits associated with other social awareness forms that maintain the self as the target, these results consistently indicate the females in this study may be less likely to respond favorably in stressful scenarios than the males.

Furthermore, as the second self-divided form of social awareness, which is associated with using the environment to gain information to regulate one's social behavior, this form is the only self-divided form of social awareness to maintain the self-perspective. This association appears counterintuitive, as prioritizing one's perspective contradicts using external information to guide behaviors. Sheldon<sup>14</sup> discussed this inconsistency as perhaps stemming from an individual's appearance insecurity. This appearance insecurity is congruent with the association of this form of social awareness with narcissism. The results of this study suggest that females who participated in this study are more likely to value their perspective over others' opinions regarding their appearance than males.

When considering other within-group differences for the social awareness form, self-appearance from the self-perspective, the results of this study indicate a significant difference ( $p=.005$ ) between ages over time. For every year that age increased, scores changed by 0.154. This significant change suggests that the older students in this study reported a greater increase in the social awareness form positively associated with public self-consciousness, neuroticism, depression, and narcissism than younger students after participating in this awareness-based educational module. The oldest students in this study were 24 years old, suggesting that perhaps individuals of this age are more conducive to change in the social awareness form, self-appearance from the self-perspective than those who are younger, including ages 23, 22, 21, and 20.

#### **Research Question Four: Self-Appearance from the Other's Perspective**

Self-appearance from others' perspectives is the final form of social awareness that Sheldon <sup>[14]</sup> categorized under the self-divided category, maintaining the self as the target. Similar to the other form of social awareness associated with social anxiety, self-appearance from the other's perspective includes oneself as the target when viewed from an external perspective. This result suggests that individuals high in this form of social awareness value external perspectives to define themselves. Furthermore, this form of social awareness is positively associated with public self-consciousness, social anxiety, neuroticism, and depression. Data analyses showed no significant difference ( $p=.615$ ) in the social awareness form, self-appearance from the other's perspective. However, there was a significant difference when comparing the sexes ( $p=.005$ ). Females had a significantly higher mean score (3.327) than males (2.920), suggesting that the females in this study reported higher levels of public self-consciousness, social anxiety, neuroticism, and depression than males. This result is consistent with the previous three forms of social awareness that maintain the self as the target.

#### **Research Question Five: Other's Experience from the Self-Perspective**

Sheldon <sup>[14]</sup> identified this form as the second self-grounded form of social awareness. Although the association of this form of social awareness was weaker than other forms of social awareness, this form is significantly associated with self-consciousness and empathy. This form of social awareness is also significantly related to neuroticism. Data analyses showed no significant difference ( $p=.807$ ) in the social awareness form, other's experience from the self-perspective. Additionally, there were no significant changes between or within-group comparisons for this form of social awareness. Thus, the results of this study suggest that the awareness-based educational module did not impact DPT students' self-consciousness or empathy after participating in an awareness-based educational module. With this form of social awareness maintaining a weaker association with these traits, this form of social awareness was of lesser interest to the investigator than the other forms of social awareness with higher associations. Stepping back from the personality trait associations, the investigator focused on the self-grounded aspect of this form of social awareness.

#### **Research Question Six: Other's Experience from the Other's Perspective**

Other's experience from the other's perspective is the third self-grounded form of social awareness <sup>[14]</sup>. Similar to the first form of social awareness, self-experience from the self-perspective, the form, other's experience from other's perspective, is positively correlated with emotional and cognitive empathy. Data analyses showed no significant difference ( $p=.631$ ) in the social awareness form, other's experience from the other's perspective. Additionally, there were no significant changes between or within-group comparisons. Thus, these results indicate that the awareness-based educational module did not significantly impact DPT students' empathy after participating in an awareness-based educational module.

#### **Research Question Seven: Other's Appearance from the Self-Perspective**

Sheldon <sup>[14]</sup> categorized other's appearance from the self-perspective as a self-grounded form of social awareness. Like the first form of social awareness, self-experience from the self-perspective, this form of social awareness is one of the most frequently experienced forms, indicating that individuals tend to define others by their appearance or behavior. This form of social awareness positively correlates with self-consciousness and narcissism. Data analyses showed no significant difference ( $p=.626$ ) in the social awareness form, other's appearance from the self-perspective. However, the results of this study show a significant change over time by age for this form of social awareness ( $p=.037$ ). For every year that age increased, scores changed by 0.111. Thus, older students reported a greater positive change in this form of social awareness than younger students after participating in an awareness-based educational module. Therefore, the older students in this study reported a greater increase in the social awareness form positively associated with self-consciousness and narcissism than younger students after participating in this awareness-based educational module. Additionally, the results suggest that the older students in the study were more likely to define others by their appearance or behavior after participating in this educational module than the younger students.

#### **Research Question Eight: Other's Appearance from the Other's Perspective**

Other's appearance from the other's perspective is the final self-grounded form of social awareness.<sup>14</sup> Individuals who scored higher in this subscale of social awareness reported higher levels of self-consciousness and empathy. Data analyses showed no significant differences ( $p=.089$ ) in the social awareness form, other's appearance from the other's perspective. However, there was a significant difference ( $p=.025$ ) when considering change over time by age. For every year that age increased, scores changed by 0.152, indicating that older students reported a greater positive change in this form of social awareness than younger students after participating in an awareness-based educational module. Therefore, the older students in this study reported a greater increase in the social awareness form positively correlated with self-consciousness and empathy after participating in this awareness-based educational module than younger students.

#### **Conclusion**

Tervalon and Murray-Garcia <sup>[20]</sup> highlighted the importance of self-awareness and other-awareness in promoting health equity. Both categories of awareness are key in mitigating implicit biases in cross-cultural scenarios <sup>[21]</sup>. Thus, emphasizing cultural competence education, specifically awareness, within a cultural competence framework within a DPT program is critical for the health of society <sup>[13]</sup>. Measuring the difference in graduate DPT students' social awareness using the SAI before and after taking an awareness-based educational module contributed to the evidence surrounding the tenet of awareness as a critical construct in cultural competence education. Using the PCCDHS framework, the constructs, awareness and knowledge, were intertwined in this educational module. This awareness-based module focused on self-awareness of

implicit biases, introduced the impact of these biases on others, and introduced the downstream effects of biases regarding health equity. The results of this study indicate that an awareness-based educational module primarily focused on self-awareness did not impact DPT students' eight forms of social awareness, as there were no overall significant changes in SAI scores. Therefore, it is logical to consider that there was a missing component of the cultural competence education, other-awareness. Other-awareness is emphasized later in the module-based program. Therefore, changing the timing of the post-assessment to after students have received the other module could be significant.

This study further contributes to the literature surrounding the application of the PCCDHS, as the heterogeneity surrounding cultural competence frameworks is vast. Campinha-Bacote<sup>[15]</sup> emphasized the interdependence of the PCCDHS constructs and that cultural encounters are fundamental in the promotion of the growth of cultural competence. Due to this study measuring change across a module that occurs in DPT students' first semester of graduate school, it cannot be assumed that these students had any prior clinical encounters. Restructuring the constructs within the module-based program to include cultural encounters may be appropriate to promote change in DPT students' social awareness. Thus, this is another key takeaway from this study.

The literature highlights awareness within a cultural competence framework as a critical strategy to mitigate health inequities<sup>[20, 21]</sup>. Despite this knowledge of the importance of awareness, there is no current evidence using an awareness-specific outcome measure, such as the SAI. The SAI measures eight forms of social awareness, encompassing self-awareness and other-awareness.<sup>14</sup> Therefore, this comprehensive inventory is appropriate since awareness has remained central to the discussion of mitigating health disparities. Thus, this was the first study in PT education literature to use the SAI, an awareness-specific inventory, to measure one critical construct of cultural competence after DPT students participated in an awareness-based educational module.

As healthcare educators strive to mitigate health disparities in underrepresented populations, creating the most comprehensive cultural competence curriculum and appropriately assessing the key outcomes is critical to improving the health of society. As awareness remains a key strategy to mitigate health disparities, this study contributes to cultural competence educational practice. Additionally, it sheds new light on the SAI as the first study in PT education to use this construct-specific outcome measure.

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