

Validation of a Provider Self-Report Inventory for Measuring Patient-Centered Cultural Sensitivity in Health Care Using a Sample of Medical Students

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Abstract The paper describes the construction and initial evaluation of the new Tucker-Culturally Sensitive Health Care Inventory (T-CSHCI) Provider Form, which was developed to address the shortcomings of existing similar measures. Two hundred seventeen (217) 3rd and 4th year medical students completed the T-CSHCI-Provider Form. Factor analysis was used to identify non-overlapping items. The final solution produced five factors: patient-centeredness, interpersonal skills, disrespect/disempowerment, competence, and cultural knowledge/responsiveness. The five T-CSHCI-Provider Form factors/subscales proved to be reliable and were associated with related constructs as hypothesized. This study provides initial evidence that the T-CSHCI-Provider Form measures independent dimensions of patient-centered culturally sensitive health care as perceived by medical students. Recommendations for ways in which the T-CSHCI Provider Form can be used to guide culturally sensitive health care training are provided.

Keywords Cultural sensitivity · Self-report inventory · Medical students · Factor analysis

Introduction

In 2000 the Liaison Committee on Medical Education required medical training to prepare students to recognize and appropriately address cultural biases in health care delivery. In addition, training outcome assessment is now considered a requisite part of culturally competent and culturally sensitive health care medical training [1]. Such training has implications for improving the quality of the health care provided in this country [2], increasing treatment adherence among culturally diverse patients [3] and thus reducing the costs associated with low treatment adherence among patients, particularly racial/ethnic minority patients [4], and ultimately reducing the well-documented health care disparities in this country [5].

The present article explores the limitations of existing instruments to assess levels of cultural competence or cultural sensitivity in the context of medical training and describes the construction and initial evaluation of the new Tucker-Culturally Sensitive Health Care Inventory (T-CSHCI)-Provider Form to address these shortcomings. In addition, recommendations for ways in which the T-CSHCI Provider Form can be used for culturally sensitive health care training are provided.

Limitations of the Existing Assessments/Instruments

A content analysis report from the US DHHS (2002) noted that information regarding the most effective types of cultural competence and cultural sensitivity training for health care providers is currently insufficient because of the

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lack of appropriate health care quality assessments [6]. The limitations of the existing assessments of culturally competent and culturally sensitive health care include the following: (a) the item content of the vast majority of existing assessments is based upon developers' operational definition of cultural competence rather than on empirical data; (b) the assessment developers are "experts" or scholars and no data from patients themselves is incorporated in the development of these assessments; (c) the existing measures focus on testing specific knowledge pertaining to racial/ethnic groups while neglecting broader aspects of culturally sensitive health care; (d) most of the existing assessments of culturally competent and culturally sensitive health care have been developed and validated to inform the practice of health care providers (e.g., physicians, physician assistants, nurses, etc.) rather than to inform the training of medical students; (e) few reports have used these measures to evaluate the impact of cultural competence and cultural sensitivity training [7]; (f) these assessments are based on very limited agreement as to what should constitute patient-centered culturally sensitive health care [4], and this limited agreement contributes to difficulties in constructing a universally required curriculum for promoting culturally competent and culturally sensitive health care [8]; and (g) very few or none of such assessments were specifically developed for, and validated on, a medical student population.

Development of the T-CSHCI Provider Form

The T-CSHCI-Provider Form was developed to address the above stated limitations. It is a self-assessment instrument intended for use by health care providers to report their perceived level of engagement in patient-centered culturally sensitive health care behaviors and attitudes. Patient-centered culturally sensitive health care is a concept introduced by Tucker and her colleagues [9–11] as involving "cultural competence plus" in that it extends beyond an emphasis on displaying cultural competence in health care to an emphasis on ascertaining and being responsive to what patients want, need, perceive, and feel in the process of receiving culturally competent health care [11]. Patient-centered culturally sensitive health care views culturally diverse patients as the true experts on the indicators of culturally sensitive/insensitive health care, and it is patient empowerment-oriented. Patient-centered culturally sensitive health care also emphasizes displaying patient-desired provider and staff behaviors and attitudes, implementing health care policies, and displaying physical health care characteristics identified by patients as indicators of culturally sensitive health care [12].

In accord with the patient-centeredness characteristic of the culturally sensitive health care as defined by Tucker et al.

[10], the items on the T-CSHCI-Provider Form were generated or identified in a prior focus group study in which low-income African American, Hispanic/Latino, and non-Hispanic White primary care patients identified provider behaviors and attitudes that enable them to feel trusting of, comfortable with, and respected by their health care providers (see Tucker et al. [10] for more details). The items from this focus group study were then used in another study in which an independent sample of primary care, racially diverse patients we asked to rate the importance of the provider health care behaviors and attitudes, clinic staff behaviors, and clinic characteristics identified in the focus groups (see Tucker, Herman, et al. [11] for more details). The pilot T-CSHCI Provider Form was constructed based on these ratings, and only the items rated as Important, Very Important, or Most Important were retained.

The preliminary reliability and validity data for the T-CSHCI-Provider Form were calculated using a convenience sample of 22 providers. The internal consistency of the T-CSHCI-Provider Form was .98; its split-half reliability was .97; and its five-month test-retest reliability was .70 [12]. Given that these reliability findings were based on a small convenience sample, these data were viewed only as supportive of further development of the T-CSHCI-Provider Form.

The proposed research responds to the call for and the need for valid and reliable assessments of patient-centered culturally sensitive health care. Specifically, the present study examined the factor structure of the pilot T-CSHCI-Provider Form and the reliability and construct validity of the new T-CSHCI-Provider Form obtained after shortening this assessment based on the factor analysis findings. Participants were medical students who provide care to patients (i.e., 3rd and 4th year medical students). Such medical students are ideal study participants because T-CSHCI data obtained from them can be beneficial in adjusting their training to better prepare them for providing patient-centered culturally sensitive health care later in their professional careers. Demonstrating that the T-CSHCI is reliable and valid when used with medical students who see patients will promote its use in training of these students toward the goal of improving the quality of care that culturally diverse patients experience, particularly patients who are racial ethnic minorities or who have low household incomes.

Methods

Participants

Participants were 217 medical students recruited from four medical schools located in the southeastern U.S. The

criteria for inclusion in this study were: (a) being 18 or older, (b) being able to provide informed consent, and (c) being a 3rd or 4th year medical student. This latter criterion was set to ensure that medical student participants were involved at a level of training that involved actually seeing patients. A total of 1,199 medical students (598 in their third year and 601 in their fourth year) were invited to participate in the present study and 217 of them actually participated, resulting in a participation rate of 18.1%. Participants' ages ranged from 22 to 56 years old (mean = 26 years, standard deviation = 3.4 years). The demographic and medical school information for these participants is presented in Table 1.

Table 1 Participant demographic and medical education information

	Frequency	Percent (%)
Gender		
Male	102	47.0
Female	114	53.0
Ethnicity		
African American	12	5.5
Asian American	34	15.7
Latino/Hispanic American	19	8.8
Non-Hispanic White	144	66.4
Other	8	3.7
Citizenship status		
US citizen	199	91.7
Non-US citizen	18	8.3
Languages spoken		
English only	120	55.3
English +	97	44.7
Year in medical school		
Third	101	46.5
Fourth	115	53.0
Taken a cultural sensitivity class		
Yes	110	50.7
No	106	48.8
Experience with racial minority patients		
Very low	1	0.5
Low	0	0
Average	65	30.0
High	69	31.8
Very high	80	36.9
Experience with low income patients		
Very low	0	0
Low	0	0
Average	35	16.1
High	78	35.9
Very high	103	47.5

Some percents do not add up to 100% because of missing data

Instruments

The assessment battery (AB) was comprised of three assessment instruments: the T-CSHCI-Provider Form, the Service Delivery and Practice subscale of the Cultural Competence Self-Assessment Questionnaire (CCSAQ), and a Demographic and Clinical Experience Data Questionnaire. Each of these instruments is described below.

The Tucker-Culturally Sensitive Health Care Inventory (T-CSHCI)-Provider Form [12] is a 141-item self-report measure of behaviors and attitudes that mostly low-income racially/ethnically diverse primary care patients have indicated to be important for promoting trust in their provider, comfort with their provider, and feeling respected by their provider. Examples of items on the T-CSHCI-Provider Form are as follows: "I am honest and direct with my patients", "I chat with my patients during their visits", and "I let my African American patients know about illnesses and diseases common among members of their race". The instructions on the T-CSHCI-Provider Form ask the provider completing it to self-rate their level of agreement that each listed behavior and attitude is characteristic of herself/himself using a rating scale from 1 (strongly disagree) to 4 (strongly agree). Each T-CSHCI-Provider Form item can thus be scored 1, 2, 3, or 4 and the total score is computed adding the scores for all items. Higher scores indicate higher levels of patient-centered culturally sensitive health care behaviors and attitudes.

The Service Delivery and Practice subscale of the Cultural Competence Self-Assessment Questionnaire (CCSAQ)-Service Provider Version is composed of 19 items that measure knowledge of problems with mainstream diagnoses, awareness of the particular needs of culturally diverse populations, and self-perceived ability to formulate treatment plans in accord with patients' cultural values. The Cultural Competence Self-Assessment Questionnaire (CCSAQ) [13] is designed to assess cultural competence training needs of mental health and human service professionals. Sample items from the Service Delivery and Practice subscale of the Cultural Competence Self-Assessment Questionnaire (CCSAQ)-Service Provider Version are as follows: "Are you familiar with the limitations of mainstream diagnostic tools as applied to people of color?" and "Do you discuss racial/cultural issues with consumers in the treatment process?" Each item is rated on a scale from 1 (not at all) to 4 (very well/often), and the subscale score is computed as the mean score for all of the items on that subscale. Higher scores indicate higher perceived cultural competence by health care providers in their service delivery and practice. According to the author of the CCSAQ all of its subscales have yielded alpha coefficients of .80 or higher.

A brief Demographic and Clinical Experience Data Questionnaire (DCE-DQ) was constructed by the principal investigator for the purpose of this study. It solicits the

following information from research participants: gender, age, race/ethnicity, nationality status (i.e., American or other), fluency in a language other than English, year of medical school (i.e., year 3 or 4), prior or current enrollment in a culturally competent/sensitive health care course, and self-reported level of experiences with providing health care to racial/ethnic minority patients and to low income patients using a scale from 1 (very low level) to 5 (very high level).

Procedure

Institutional Review Board [IRB] approval was obtained for this study from the host institution. In addition, one of the medical schools where recruitment occurred required an independent IRB approval which was also obtained. Participants were recruited from four medical schools in the southeast with the help of medical school faculty members and/or administrators and a medical student research coordinator at each respective school. These individuals forwarded a research participation invitation message to potential medical student participants at their respective schools via e-mail list serves. The invitation message contained information regarding the goals of the proposed study, research procedures including confidentiality precautions (i.e., no linkage between participants' responses to the AB and their email address and name), Institutional Review Board approval, participant inclusion criteria (i.e., 3rd or 4th year medical student), participant payment information (e.g., payment of \$10 for participating), and the approximate length of time (i.e., 30 min) required for medical student participants to complete the online AB—the task that constituted research participation. This message also provided the web site address where participants could access the AB to be completed online. When medical students interested in participating accessed this web link, they first saw the online Informed Consent Form and were asked to indicate their consent to participate in this study by checking a box which allowed them to access and complete the AB. After completing the AB, participants received instructions to access a separate web page where they were to provide an e-mail address where they wanted to be contacted regarding their \$10 payment for participating in the study. In sum, the payment process involved providing the researchers with a mailing address that was submitted to personnel at the PI's university, who in turn mailed a \$10 check to each participant within 6–8 weeks.

Results

In order to explore the factor structure that constitute patient-centered culturally sensitive health care as assessed by the T-CSHCI-Provider Form when this form is used with a

sample of medical students who see patients, an exploratory factor analysis (EFA) with principal axis factors (PAF) extraction and with both Varimax and Promax rotations was conducted using the Statistical Package for Social Sciences (SPSS) Program. As a first step, descriptive statistics were obtained for the T-CSHCI-Provider Form items. The normal distribution of the data was tested using the total score for the T-CSHCI-Provider Form, which was computed as the mean score of all the items of this assessment instrument. The skewness coefficient was .105, the kurtosis coefficient was -1.27 , and the Kolmogorov–Smirnov coefficient Z was 1.47 , $p < .05$, indicating that the data slightly deviated from a normal distribution.

Factor Analysis

The data factorability was tested using the Bartlett's test of sphericity which was significant ($p < .0001$), suggesting that the data was suitable for factor analysis. The factorability of data was also tested using Pearson correlations between the T-CSHCI-Provider Form items. The correlation matrix showed low to moderate correlation coefficients (i.e., the coefficient absolute values ranged from .02 to .63) suggesting that a factor analysis would produce acceptable factor loadings for some of the T-CSHCI-Provider Form items. The correlation matrix could not be reproduced in this text due to the large volume of correlations between the T-CSHCI-Provider Form items to be analyzed (i.e., 141 by 141 correlation coefficients) but is available from the authors upon request.

A principal axis factors (PAF) analysis was chosen in this study, in accord with recommendations from Costello & Osborne [14] for data that is not normally distributed. The factor communalities (i.e., the estimates of the variance in each variable accounted for by the factor solution) were higher than .40, which is the commonly accepted minimum for communality values in the “moderate” range. Initial communalities ranged from .96 to 1.00 and extraction communalities ranged from .58 to .93, indicating that the factor solution provided an adequate fit for all of the 141 items.

The next step in the factor analysis was to use a scree plot to determine the number of factors to be retained, and the five- or six-factor solutions met the Guttman-Kaiser rule for factor retention. According to this rule, the items with an eigenvalue greater than 1 were retained (see Fig. 1). The eigenvalues and the percentages of variance explained by each factor in the initial (unrotated) factor solutions are summarized in Table 2.

As the next step, the rotated factor solutions were explored using both Varimax and Promax rotations. Field [15] recommended conducting both types of factor rotations when the most appropriate type of rotation is

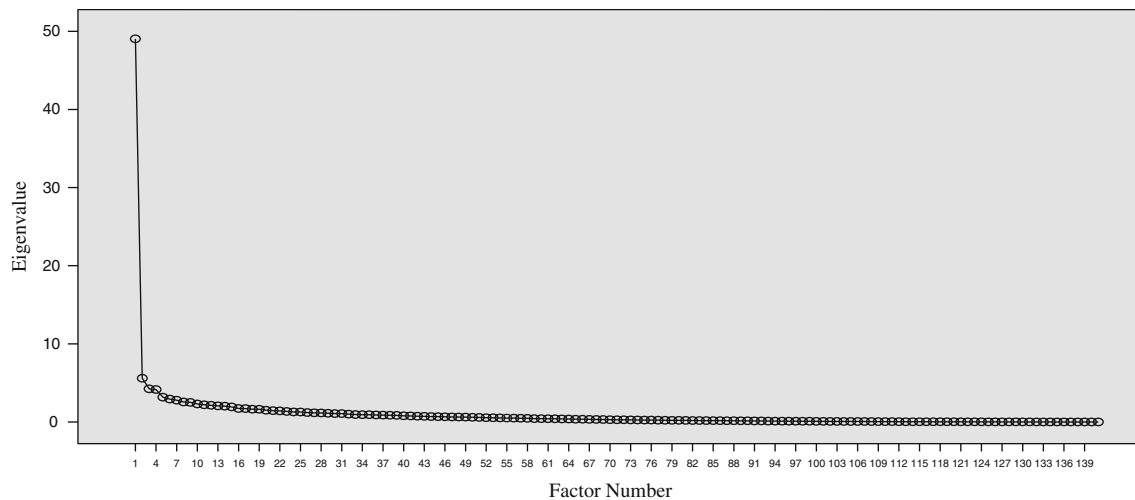


Fig. 1 Scree plot for the T-CSHCI-Provider Form items

Table 2 Eigenvalues and variance explained in the initial factor solutions

	Five-factor solution	Six-factor solution
Eigenvalues		
Factor 1	49.03	49.03
Factor 2	5.59	5.59
Factor 3	4.24	4.24
Factor 4	4.15	4.15
Factor 5	3.17	3.17
Factor 6	–	2.93
Percentage of variance explained		
Factor 1	34.61	34.61
Factor 2	34.61	34.61
Factor 3	2.81	2.81
Factor 4	2.75	2.75
Factor 5	2.06	2.06
Factor 6	–	1.88
Cumulative variance	46.00%	47.88%

uncertain in order to determine which rotation can provide a more reliable and effective factor structure. A reliable factor structure is characterized by eigenvalues greater than 1, item loadings larger than .30, few cross-loadings between factors, and no factors with fewer than three items.

The results for this study revealed that the factors obtained through a Promax rotation correlated in the low and moderate range with each other (the factor correlation coefficients ranged from .01 to .65 with the majority of values being in the .2–.3 range). These findings suggested the existence of factor correlations and supported using a Promax rotation. However, the factor solutions obtained using a Varimax versus a Promax rotation had very similar item compositions (i.e., the T-CSHCI-Provider Form items

had similar factor loadings). Furthermore, Field [15] suggested that a Varimax rotation provides a more interpretable factor solution than a Promax rotation. Using a Varimax rotation also presented the advantage of an easily interpretable T-CSHCI-Provider Form factor/subscale scoring guide. Since Promax rotation would allow the T-CSHCI-Provider Form items to load on more than one factor/subscale, scoring procedures would be more difficult to determine in this instance. Based on these issues, a Varimax rotation was deemed more appropriate for identifying the dimensions of patient-centered culturally sensitive health care using the T-CSHCI-Provider Form items.

To determine the number of factors/subscales to be retained, the five-factor solution and the six-factor solution were compared based on (a) the total variance explained by each of these two factor solutions, (b) the extraction sum of squared loadings for each of the two factor solutions, (c) the rotation sum of squared loadings for each of the two factor solutions, and (d) the number of items per factor [16]. The five-factor solution was considered to provide a better data fit and was retained.

Next, we repeated the factor analyses using five factors/subscales as the default number, which increased the likelihood of obtaining an interpretable factor solution [17]. The iterative process was used to eliminate items with the following characteristics: (a) items with factor loadings less than .32, (b) items with cross-loadings less than .15 difference from the highest factor loading, (c) items with absolute loadings higher than .32 on two or more factors/subscales, and (d) items with communalities less than .40 [16]. Using these item elimination criteria, a PAF factor analysis with Varimax rotation was conducted successively four times until no items met the above specified criteria anymore. Each time, 50 items, 21 items, 13 items, and 4 items, respectively, were eliminated.

A total of 53 items were retained in the final factor solution. The final factor solution is presented in Table 3 with the item loadings for each of the T-CSHCI-Provider Form factors/subscales highlighted and with the number of items per factor/subscale specified. Based on inspection of the items, the five factors were labeled patient-centeredness, interpersonal skills, disrespect/disempowerment, competence, and cultural knowledge/responsiveness and the percent of variance accounted by each of these factors was 17.78, 7.32, 6.76, 17.78%, and respectively. All correlations between the T-CSHCI-Provider Form factor/subscale scores were significant at a $p < .01$ level and ranged from .65 (interpersonal skills and patient centeredness) to $-.23$ (disrespect/disempowerment and competence). Descriptive statistics for each T-CSHCI-Provider Form factor/subscale are shown in Table 4.

Reliability and Construct Validity

Next, we explored the construct validity, internal consistency, and split-half reliability of the T-CSHCI-Provider Form subscales identified through factor analytic procedures. The construct validity was assessed by examining the correlations between the T-CSHCI-Provider Form subscales and the Service Delivery and Practice subscale of the Cultural Competence Assessment Questionnaire-Service Provider Version.

Internal consistency of the T-CSHCI-Provider Form factors/subscales were calculated using the Cronbach's Alpha coefficient, which provides information regarding the strength of inter-item correlations. Alphas ranged from .77 to .94 suggesting a high level of internal consistency for each factor on the T-CSHCI-Provider Form. The split-half reliability of the T-CSHCI-Provider Form factors/subscales was computed using the Spearman-Brown split-half reliability coefficient. Split-half reliabilities ranged from .68 to .92.

The construct validity of the T-CSHCI-Provider Form factors/subscales was tested using Pearson correlations between the mean score of each of the T-CSHCI-Provider Form factors/subscales and the mean score on the Service Delivery subscale of the Cultural Competence Self-Assessment Questionnaire (CCSAQ). It was expected that these correlations would be moderately high (not very high) given the conceptual differences between culturally sensitive health care and culturally competent health care as described in the introduction. As Table 5 shows, the correlations between most of the T-CSHCI-Provider Form factors/subscales and the CCSAQ-Service Delivery subscale were low to moderate (r 's = .25–.50); only the disrespect/disempowerment subscale of the T-CSHCI did not correlate significantly with the Service Delivery subscale of the CCSAQ.

Discussion

The present study describes the initial validation of the Tucker-Culturally Sensitive Health Care Inventory (T-CSHCI) Provider Form for use with medical students who see patients. Two hundred seventeen 3rd and 4th year medical students completed the pilot T-CSHCI Provider Form. Factor analysis was used to identify non-overlapping items. The final solution produced five factors: patient-centeredness, interpersonal skills, disrespect/disempowerment, competence, and cultural knowledge/responsiveness. The five T-CSHCI-Provider Form factors/subscales proved to be reliable and most of them were associated with related cultural competence constructs as expected. These findings provide initial evidence that the T-CSHCI-Provider Form measures independent dimensions of patient-centered culturally sensitive health care as perceived by medical students.

There is support in the existing health care literature for the importance of the 5 identified factors/subscales of the T-CSHCI-Provider Form based on the perspectives of medical students. Patient-centeredness, for example, has been described as an important contributor to improved health care quality [2], which in turn predicts treatment adherence [18]. Provider interpersonal skills are associated with increased patients' reports of feeling understood and at ease with their physician, trusting of their physician, and patient satisfaction and/or improved health outcomes among patients [19, 20]. Physician medical competence has been linked to trust in physician [21], which in turn predicts adherence to treatment recommendations, not changing physicians, not seeking second medical opinions, perceived effectiveness of care, and improvement in self-reported health [22–24]. Regarding the cultural knowledge/responsiveness of providers, it is now widely accepted that physician behaviors which are sensitive and responsive to patients' cultural background can contribute to reducing health care and health disparities [2].

Because the findings in the present study suggest that the T-CSHCI-Provider Form has adequate reliability and validity when used by the medical students who participated in the present study, support is provided for more studies that examine its psychometric properties and that include larger and more culturally diverse samples of medical students who see patients. If these studies further support the T-CSHCI-Provider Form then this measure may also prove to be very useful in training medical students to provide such culturally sensitive care. For example, the T-CSHCI-Provider Form could be administered to medical students to identify specific target behaviors and attitudes for training to prepare these students for providing patient-centered culturally sensitive health care. The T-CSHCI-Provider Form could also be administered prior

Table 3 Factor/subscale item composition and factor loadings for the five-factor solution

Item no.	Item summary	Factor loadings				
		1	2	3	4	5
<i>Factor 1: patient centeredness (23 items)</i>						
141	Shows understanding of patients' feelings	.75	.22	.15	.15	.25
82	Responds to patients' requests	.75	.19	.22	.18	.08
83	Makes helpful and reasonable recommendations	.74	.17	.23	.22	.06
95	Evaluates patients' problems as soon as they come in	.69	.10	.20	.20	.12
88	Is available for patients	.65	.26	.21	.17	.20
119	Is informative to patients	.65	.29	.19	.22	.19
93	Takes time with patients while examining them	.63	.17	.21	.21	.14
94	Is prepared to quickly examine patients	.61	.14	.23	.17	.18
116	Prescribes treatments and medicines that work	.61	.06	.15	.16	.13
49	Makes patients feel like their visits to the clinic were informative or productive	.61	.28	.22	.16	.09
52	Puts patients' minds at ease	.60	.25	-.08	.18	.23
73	Is concerned about patients' situations	.59	.20	.24	.13	.20
51	Makes patients feel at home while at the clinic	.59	.21	-.02	.01	.28
53	Shows patients familiarity with their health	.59	.26	-.11	.17	.20
80	Knows how to make patients feel comfortable	.58	.17	-.03	.12	.30
65	Prepares patients for the next steps	.58	.17	.15	.23	.25
91	Explains prescribed medications	.54	.12	.26	.06	.31
92	Refers patients to a specialist upon request	.51	.05	-.05	.10	.05
100	Uses standard examining procedures	.49	.05	.11	.24	.14
50	Cares more about patients than making money	.41	.24	.16	-.04	.24
70	Refers patients for tests that they think they need	.40	.09	-.14	.04	.01
32	Explains everything he/she does to patients	.38	.16	.15	.23	.24
89	Puts on a fresh pair gloves in front of the patients	.38	.18	.23	.07	.33
<i>Factor 2: interpersonal skills (7 items)</i>						
6	Is friendly to patients	.16	.73	.15	.17	.07
8	Is polite to patients	.31	.70	.13	.13	.01
11	Is compassionate with patients	.28	.64	.11	.16	.19
48	Is nice to patients	.32	.63	.24	.13	.08
37	Talks to patients during their visits	.26	.61	.22	.28	.05
22	Is willing to learn	.18	.41	.13	.27	.07
9	Is relaxed with patients	.22	.39	-.05	.11	.23
<i>Factor 3: disrespect/disempowerment (8 items)</i>						
77	Talks down to some patients	.17	.03	.66	.12	.07
15	Sometimes embarrasses patients	.03	-.01	.58	.15	.12
139	Looks down on some patients	.21	.14	.56	-.08	.27
41	Mistakenly diagnoses patients' problems as psychological	.11	.03	.54	-.09	-.06
129	Brings medical students into the room without patient's permission	.03	.18	.53	.07	.00
117	Makes patients wait long	.03	.01	.50	.21	.10
66	Questions the truth of what patients say	.02	.16	.50	-.09	-.08
55	Assumes patients are just looking for a way to "get high" when they ask for pain medications	.19	.21	.46	-.17	.00
<i>Factor 4: competence (9 items)</i>						
21	Is knowledgeable about the field of medicine	.25	.05	-.01	.66	.01
20	Is well educated	.25	.19	.17	.62	-.03
27	Knows what to do with patients	.06	.13	-.13	.62	.12
1	Is confident in his/her abilities	.16	.13	.08	.59	-.01

Table 3 continued

Item no.	Item summary	Factor loadings				
		1	2	3	4	5
3	Is right about why patients are sick	.07	.06	-.17	.55	.28
26	Has a lot of schooling	.22	.21	.11	.40	.06
35	Is aware of limits in illnesses he/she can treat	.18	.10	.15	.36	.08
107	Correctly diagnose and treat patients' illnesses	.26	.11	-.05	.36	.25
4	Is honest and direct with patients	.30	.25	.19	.30	.08
<i>Factor 5: cultural knowledge/responsiveness (6 items)</i>						
125	Is educated in working with patients of different cultures and social statuses	.21	.02	.11	.16	.64
126	Understands the African American culture	.22	-.01	-.07	.16	.60
130	Works to make the clinic more racially integrated	.20	.06	.01	-.02	.46
19	Is respectful of patients' religious beliefs	.32	.25	.15	.25	.44
134	Understands about the difficulties related to cultural and/or economic differences	.32	.23	.10	.08	.40
127	Understands that people of different cultures believe in different medical practices	.29	.18	.21	.04	.39

Items presented in this table are abbreviations of the actual T-CSHCI-Provider Form items

Table 4 Descriptive information for the T-CSHCI-Provider Form factors/subscales

T-CSHCI-provider form factor/subscale	N	Minimum	Maximum	Mean	SD
1 Patient-centeredness	216	2.57	4.00	3.30	.37
2 Interpersonal skills	216	2.71	4.00	3.65	.34
3 Disrespect/disempowerment	216	1.00	3.50	2.01	.44
4 Competence	216	2.33	4.00	3.28	.31
5 Cultural knowledge/responsiveness	216	2.17	4.00	3.18	.41

The ratings for factor 3 (disrespect/disempowerment) are reverse-scored; thus, high scores indicate low levels of patient-centered culturally sensitive health care

to and at the end of courses and other training experiences designed to promote cultural sensitivity/competence of medical students. Additionally, data obtained from administration of the T-CSHCI-Provider Form to medical students in a particular medical school can be used to design courses and learning experiences to better train these students for providing patient-centered culturally sensitive health care to their patients.

Table 5 Pearson correlations between the T-CSHCI-Provider Form Factors/subscales and the CCSAQ

T-CSHCI-Provider form Factor/Subscale	CCSAQ-service delivery
1 Patient-centeredness	352(**)
2 Interpersonal skills	245(**)
3 Disrespect/disempowerment	-.092
4 Competence	315(**)
5 Cultural knowledge/responsiveness	501(**)

Correlations marked ** are significant at the 0.01 level (2-tailed)

Subscale scores of the T-CSHCI-Provider Form (versus a global score) present the advantage of providing more detailed information about specific components of patient-centered culturally sensitive health care, which in turn can facilitate the development of effective training content modules (e.g., interpersonal skills, patient-centeredness skills, etc.) and training methods (e.g., providing specific feed-back to medical student trainees). The factors/subscales of the T-CSHCI-Provider Form can also facilitate health-related research (e.g., determining which patient-centered culturally sensitive health care components are associated with specific health outcomes).

One limitation of the present study is that it relied on only one measure of cultural competence to validate the T-CSHCI-Provider Form. Another limitation of the present study is that the overwhelming majority of the medical student participants in it self-reported as being non-Hispanic White students. Future similar studies should include much more racially/ethnically diverse samples of medical students who are from different regions of our nation.

The limitations of the present study do not overshadow its important strengths. First, the T-CSHCI–Patient Form that was investigated in this study is the first measure of its kind that specifically includes patient perspectives of culturally sensitive health care. Second, the present study showed this measure to be reliable and valid for use with medical students like those in the present study, and thus holds promise for use in training and evaluation of diverse samples of medical students. Third, the factor analysis of the T-CSHCI data obtained from the relatively large sample of medical students in the present study yielded a robust factor structure.

Conclusions

The results of the present study suggest that the T-CSHCI–Provider Form is a reliable and valid self-assessment inventory for assessing level of engagement in patient-centered culturally sensitive health care by medical students similar to those in the present study. If these findings are supported in future similar research with larger and more culturally and racially/ethnically diverse samples of medical students, the T-CSHCI–Provider Form will be useful in structuring and assessing the effectiveness of patient-centered culturally sensitive health care training for medical students. In addition, the T-CUSHCI-Provider Form has potential for promoting needed research to determine if there are measurable links between patient-centered culturally sensitive health care as defined by ethnic minority patients and the costly and unjust health disparities that exist between majority and minority Americans.

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