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Exploratory Factor Analysis of the Strength of Cultural Affiliation Scale

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Abstract

Background—Within the United States there are individuals who retain traditions and beliefs of cultural groups that vary from the general majority population. Both health care providers and researchers have reported that many individuals who live in but are less affiliated with the dominant culture tend to have less positive health outcomes.

Objective—The purpose of this study was to use factor analysis to assess the psychometric properties of Mood's 18-item Strength of Cultural Affiliation Scale (SCAS).

Methods—The SCAS was administered to 604 participants from a randomized clinical trial of cancer patients who were treated with radiotherapy at a large central city hospital located in the Midwest.

Results—Confirmatory Factor Analyses using Principal Component Analysis with Oblimin Rotation indicated a 16-item, 4 factor final solution with the following subscales: Factor 1= Lifestyle (7 items), Factor 2= Language and Cultural Specific Holidays (3 items), Factor 3= Relationships (4 items), and Factor 4= Cultural Health Practices (2 items).

Conclusion—The SCAS demonstrated high reliability, content, construct, discriminant, convergent, divergent and predictive validity.

Implications for Practice—The SCAS appears to be a reliable and valid tool for practitioners to use to assess a patient's strength of cultural affiliation to provide the best culturally-sensitive care possible for the patient.

Keywords

Assessment Tool; Cancer Patients; Clinical Utility; Culture; Cultural Affiliation; Culturally-sensitive Care; Factor Analysis; Reliability; Strength of Cultural Affiliation Scale; Validity

Background

Within the United States, there are individuals who retain traditions and beliefs of cultural groups that vary from the general majority population. For example, much of the research on cultural diversity in the United States has been with Latino, Caucasian, and African Americans¹⁻³ and that, within each of these groups, there are individuals with various cultural affiliations that are not identified by race or language alone. These may include native-born citizens, naturalized citizens, and legalized/illegal immigrants, all of whom may encounter difficulties when interacting with American institutions, including the health care system. Immigrants, in particular, can face a multitude of challenges when entering a host country (e.g. language barriers^{4,5}, separation from family, feelings of loss^{4,6}, alienation⁷, perceived discrimination^{4,8}). The number of residents in the United States today who are foreign-born is at a record high, representing a 313% increase compared to 50 years ago (slightly fewer than 10 million in 1960 versus approximately 40 million in 2010⁹). Immigrants and others with strong cultural affiliations with groups other than the dominant culture can face a multitude of challenges when they have to engage with American institutions, such as the health care system.

Acculturation has been defined as “the dual process of cultural and psychological change that takes place as a result of contact between two or more cultural groups and their individual members”^{10(pp698)}. This process includes modifications in social organizations and institutional entities as well as changes at the individual behavioral level¹⁰. For example, Berry¹¹ proposed that there are four acculturation strategies immigrants use related to cultural identity: (1) *assimilation* is the strategy where individuals give up their cultural identity in favor of the dominant host culture, (2) *separation* is when individuals avoid interactions with others and maintain their heritage culture within the host country, (3) *integration* occurs when individuals maintain their own cultural identity as well as the desire to interact with and seek out cultural experiences from the host culture, and (4) *marginalization* is when individuals display little concern with interacting with the host culture and at the same time are unconcerned with maintaining their own cultural heritage. The impact of acculturation (assimilation, separation, integration, and marginalization) on strongly culturally-affiliated citizens can significantly, and often negatively, affect the health and well-being of these individuals.

Cultural affiliation, as defined by Mood¹², is “the extent to which individuals attribute their behaviors, attitudes, and values of their daily lives to the traditions and involvement with their self-identified cultural group”^(pp110). This definition considers the concept of cultural affiliation generally to be a positive strength and something that contributes positively to health.

Individuals who are less culturally affiliated with the dominant culture, however, tend to have less positive health outcomes. Anxiety, depression, distress, and feelings of loss are common factors noted in individuals who are not assimilated or integrated to their host country^{6,7,13,14}. For example, the Travellers, a historically nomadic cultural group of people residing in Ireland, maintain a strong sense of ethnic identity; their separation from the surrounding dominant Irish culture is considered a primary reason for the increased risk of

substance abuse among this group¹⁵. Poor birth outcomes such as low birth weight, prematurity, and increased neonatal mortality also have been noted at increased rates among people who are less assimilated or integrated. More assimilated individuals tend to access healthcare services more frequently^{16,17} including preventive services¹⁸.

Healthcare practitioners have a certain level of responsibility to provide culturally appropriate care to the individuals they serve. Without some sort of assessment strategy, it is very difficult for healthcare providers to ascertain how culturally affiliated a patient may be. The Strength of Cultural Affiliation tool (SCAS) by Mood is an instrument that was developed to determine how strongly affiliated a person is with one or more cultural or ethnic groups¹⁹. The underlying premise of Mood's cultural affiliation tool is that "the stronger an individual's affiliation with a self-identified cultural group, the more likely the individual is to encounter conflicts in values, beliefs, and behaviors when interacting with institutions of the majority culture, such as the health care system"^{20(pp9)}.

There are many instruments identified as measures of acculturation used to measure cultural affiliation, but what is common to most of the tools examined is that they are culture-specific. In fact, only 1 of the 22 instruments reviewed can measure cultural affiliation levels for any ethnic group. The *General Ethnicity Questionnaire*²¹ assesses an individual's experiences and attitudes with a host culture and evaluates primary language spoken at home or with close friends. In the healthcare setting, a general survey of cultural affiliation for a variety of ethnic groups, such as the *General Ethnicity Questionnaire*, is essential; however the length of this tool is a major constraint—the 47- item instrument could be overly time-consuming to administer to someone who is ill and in a fast-paced healthcare environment. The SCAS differs from other cultural affiliation measures in several important ways. Like the *General Ethnicity Questionnaire*, it is one of the few instruments that provide a general assessment of cultural affiliation that can be administered to a variety of cultural groups. But unlike the longer tool, this instrument is a brief 18-item survey that can be administered quickly in a busy healthcare setting and without excessive demands on an ill patient. In addition, the SCAS addresses more of the specific behaviors and beliefs that can be affected by cultural affiliation.

In conclusion, culture may be defined by a set of shared values, beliefs, attitudes, and behaviors that bind people together with some degree of common identity. Culture is conveyed through learned values, lifestyles, behaviors, and language,²² which are all elements reflected in the SCAS. Moreover, "affiliation" was conceptualized by Mood as a positive characteristic of cultural groups as opposed to terms such as "marginalization," "alienation," and "separation," which tend to have more negative connotations. When cultural accommodation is framed positively, practitioners are more likely to view it as vital to positive patient outcomes, rather than seeing cultural awareness merely as an obstacle to overcome. The purpose of this study was to recommend the clinical utility of the SCAS by using confirmatory factor analysis to examine and establish the psychometric properties of this instrument.

Methods

Development of the Strength of Cultural Affiliation Scale (SCAS)

The SCAS was developed by Mood¹⁹ from a pool of 32 items drawn from a thorough literature review of the attributes and definitions of culture and from an initial qualitative study to evaluate if the themes supported the findings from the literature (e.g. face validity). The items were reviewed and modified by a panel of experts in cultural anthropology, cultural-sensitive nursing care, and test construction, resulting in an initial measure of 19 items. Preliminary studies of two racially (African-American, Asian-American, and White) and socioeconomically diverse samples provided evidence of internal consistency, $\alpha = .76$ and $.75$, as well as diversity in terms of their SCAS scores. The expert panel suggested additional modifications of items. This modified version was reviewed again by the expert panel whose recommendations resulted in the SCAS. This final version, used in the current study, included 18 items with Likert scale responses (0=not at all to 4=very much). It is important to note that the SCAS contains another four questions that are qualitative in format and were not used in scoring the SCAS. The instrument may be self-administered with a pencil and paper or can be administered with the assistance of someone who reads the items orally to the patient. Patients are asked to think about their cultural or ethnic affiliation and then determine with which group or groups they identify. The patients are instructed that the cultural or ethnic groups they identify with may be very broad (e.g., Native American, Hispanic) or more specific (e.g., Cherokee or Navajo; Cuban or Mexican). Additionally they are informed that their cultural affiliation may be determined by language, skin color, tribe, social group, profession, geography and/or religion¹⁹.

Participants

The SCAS was administered to 604 participants from a randomized clinical trial of cancer patients who were treated with radiotherapy at a large central city hospital located in the Midwest. There were 304 (50.3%) female and 300 (49.7%) male participants. The age of patients ranged from 20 to 87 years (mean=58.9, SD=12.2). Ethnic affiliation included the following: African American/Black (n=298, 49.3%), European/White (n=283, 46.8%), Asian American (n=4, 0.7%), Native American (n=4, 0.7%), Latino/Hispanic (n=2, 0.3%), and participants who identified as Other (n=13, 2.2%).

Data Analysis

The Statistical Package for the Social Sciences (SPSS) program (version 17.0) was used as the primary means for all data analyses. There were four main components used in this analysis plan. (1) *Suitability of the data*: A sample size of 500 to 999 participants is considered sufficient or a good sample size for factor analysis according to Comrey and Lee²³; the Mood data set fell in that range. In addition, Nunnally²⁴ stated that an overall sample size of 10 cases is needed for each item to be factor analyzed (18 items). The strength of the inter-correlations among the items was determined to be adequate. (2) *Factor extraction*: was conducted using principal components analysis, Kaiser's criterion, Scree testing, and parallel analysis. (3) *Factor rotation and interpretation*: Principle Component Analysis (PCA) and Principle Axis Factoring (PAF) were the two main approaches used in this analysis. (4) *Further validity testing*: In addition to factor analysis (construct validity),

the following types of validity testing were conducted: discriminant, convergent, divergent, and predictive validity. Test-retest reliability has been previously established by Mood *et al.*²⁰

Results

Suitability of Data

Data appeared to be normally distributed and also were checked for linearity, outliers, and multicollinearity with no violations of distribution. There was one item in the data set that appeared to have been miscoded as a participant was coded as answering a “5”(not on the scale) which was deleted and replaced with the SPSS-missing value.

Descriptive Statistics

The SCAS has 18 items for factor analysis with a 5-point Likert-type scale ranging from 0=never to 4=always. Therefore, total scores could range from 0 (no cultural affiliation) to 72 (strongest cultural affiliation). Scores on the SCAS ranged from 0 to 53, with a mean of 20 (SD=12) and median of 19. The distribution appeared normal.

Exploratory Factor Analysis

Data were further assessed for the appropriateness for factor analysis by conducting the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy, which resulted in a value of .84 and a significant Bartlett's Test of Sphericity ($P<.0001$). The results from these tests indicated an adequate sample for factor analysis. Factor analysis was conducted in stages. Initial models resulted in four- and five-factor solutions, and the final model resulted in a four-factor solution.

Initial models—Principal Component Analysis (PCA) on 18 variables revealed Kaiser Criterion eigenvalues where five components had eigenvalues above one, explaining 63.9% of the variance. Parallel Analysis using the Monte Carlo PCA program for Parallel Analysis²⁵ revealed the number of components with eigenvalues exceeding the criterion value was four. This was further supported by the scree plot, which exhibited a break after the fourth component. Direct Oblimin rotation was performed as it was initially expected that the factors would correlate. The Pattern Matrix and the Structure Matrix (see Table 1) displayed a five-factor solution with major factor items loading above .58. It was desirable, however, to have at least three items load above .35 per factor. While all of the factors loaded above .35, two factors only contained two items rather than the desired three. Therefore, PCA was repeated with a forced four-factor solution based on parallel analysis and scree plot results as well as consideration for increasing item loadings per factor.

A four-factor solution explained 57.7% of the variance (component 1=31.3%, component 2=10.4%, component 3= 8.5%, and component 4= 7.5%). Oblimin rotation revealed relatively strong loadings for all four components (see Table 2). Component 3 only had two strong item loadings; e.g., “how men and women relate” and “how parent/child relate.” A reliability analysis revealed a Cronbach's alpha value of .77 indicating a relationship between the items. Upon further analysis of these items, it was noted that Questions 11 and 14 ask the

patient to evaluate men-women relationships and parent-child relationships in terms of whether the patient's culture treats these relationships similarly to, or different than, the dominant culture. Questions 13 and 16 then ask patients about the degree to which they personally adhere to their own culture's practices in their man-woman and parent-child relationships. Since this tool is concerned with cultural affiliation from an individual perspective and because there were only two items that loaded on the third factor, items 11 and 14 were deleted from further analysis.

The final model—The final four-factor solution utilized PCA with Oblimin rotation and revealed 60.4% of the total variance explained (Factor 1=33.2%, Factor 2= 11.4%, Factor 3= 8.8%, and Factor 4= 7.0%). The Oblimin Rotation Structure Matrix displayed relatively clear loadings for the four-factor solution (see Table 3). Factor loadings range from .57 to .86 with a mean of .74. The overall reliability using Cronbach's alpha coefficient for the entire 16 items was .88 with Cronbach alphas for Factors 1 to 4 of .88, .64, .73, and .46 respectively, indicating good internal consistency except for Factor 4²⁶. The inter-item correlation for factor 4 was .30. The factor subscales were labeled as indicated based on the questions that loaded on each factor: Factor 1—Lifestyle, Factor 2— Language and Cultural Specific Holidays, Factor 3— Relationships, and Factor 4— Cultural Health Practices. Varimax rotation also was performed with the same factor loadings on each component.

Additional Validity Results

Discriminant validity—Discriminant validity was assessed using a one-way, between-groups analysis of variance (ANOVA) to investigate the impact of cultural groups on strength of cultural affiliation as measured by the SCAS. There were six cultural group categories assessed: African American, White, Asian American, Latino, Native American, and those participants who chose the Other category. There was a statistically significant difference in SCAS scores for the six groups: $F(5, 490) = 18.6, P < .001$. The effect size, calculated using η^2 was .16, indicating a large effect size according to Cohen²⁷. Post-hoc comparisons using the Tukey Honestly Significant Difference test indicated that the mean scores for African Americans ($M=24.0, SD=10.7$) were significantly different from Whites ($M=14.8, SD=11.1$). In addition, Whites were significantly different from participants who identified themselves in the Other category ($M=25.5, SD=12.6$). The remainder of the groups did not differ significantly from each other.

Independent-samples t-tests were conducted to compare the SCAS scores for the various subcultures surveyed (British Isles [English and Scottish], German, Irish, Jewish, Mediterranean [Italian, Greek, Maltese], Native American, and Polish (see Table 4). The η^2 effect size for independent-samples t-test indicated a large effect for German and Irish (16%), German and Jewish (16%), and German and Mediterranean (16%). The effect size was moderate for German and Native Americans (10%)²⁷.

Convergent validity—Convergent validity relates to the notion that constructs that should be related are indeed related²⁸. The relationship between the SCAS total score and item 23, which asks patients to rate how strongly they feel that are affiliated with their cultural group (0= not at all to 4= very much), was investigated using Pearson product-moment correlation

coefficient. There was a strong positive correlation noted between the two variables, $r=.63$, $r^2=.39$, $P<.01$. It should be noted that item 23 was not included in factor analysis because it was used in the scored questionnaire to serve as a global assessment of cultural affiliation against which to check the scores on the SCAS.

Divergent validity—Divergent validity relates to the notion that constructs that should not be related are indeed not related²⁸. The relationship between strength of cultural affiliation and patient emotional well-being was investigated using Pearson product-moment correlation coefficient by comparing the SCAS with The Functional Assessment of Cancer Therapy- General (FACT-G)²⁹. The FACT-G contains 14 items related to emotional well-being with a 5 point Likert type scale ranging from 0=not at all to 4=extremely. Preliminary analysis was performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity. The correlation between the two scales was $r=.007$, $P=.90$ with r^2 explaining none of the variance.

Predictive validity—Predictive validity was utilized to examine the relationship between each of the four strength of cultural affiliation subscales and the total cultural affiliation scale with the emotional well-being subscale (EWB) of the FACT-G²⁹ using Pearson product-moment correlation coefficient. Preliminary analysis was performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity. Weak, but significant correlations were noted between the emotional well-being subscale and Factor 1—Lifestyle, $r=.11$, $r^2=.01$, $n=567$, $p=.02$ and between the emotional well-being subscale and Factor 4—Cultural Health Practices, $r=.08$, $r^2=.01$, $n=563$, $P=.048$. A weak correlation also was noted between the emotional well-being subscale and the total cultural affiliation scale, $r=.10$, $r^2=.01$, $n=493$, $P=.02$.

The relationship between strength of cultural affiliation and global well-being (“how do you feel about your life as a whole?”) was examined using Pearson product-moment correlation. There was a small negative correlation noted between the two variables, $r=-.12$, $n=496$, $P<.006$. Additionally, the four SCAS subscales were compared with global well-being. There was a small correlation noted between the Lifestyle subscale and global well-being, $r=-.13$, $n=570$, $P<.002$.

Reliability

Test-retest reliability—Test-retest reliability was conducted on a subset population of study participants ($n=50$) who were randomly selected to re-take the SCAS. Two weeks after the participants completed the baseline SCAS, they were asked to re-take the test. The results indicated a moderately high correlation of $r=.80$, $P<.001$.

Discussion

Understanding a patient's cultural affiliation is important information for healthcare practitioners to ascertain so that they can anticipate and plan for culturally-sensitive care. While many researchers attempt to measure acculturation and cultural affiliation, the instruments used to measure these concepts are not ideal for use in a healthcare setting (e.g. long length of instruments). Additionally, the SCAS contains cultural health practice-related

questions that are tailored for use in a healthcare setting. The answers to the questions posed in the SCAS can alert healthcare practitioners to a patient at risk for cultural clash related to dominant culture healthcare traditions and practices.

This study also provides strong evidence that the SCAS is a reliable and valid tool that practitioners can use when developing care plans in conversation with patients and family members while considering the patient's culturally-specific needs. This instrument also appears to have high reliability and validity across multiple racial, ethnic, and cultural groups. Another strength of the scale is that it can be translated to other languages and maintain its factor structure (e.g., Yu *et al.*¹² developed a Chinese version; Crist and Mood³⁰ developed a Spanish version. Both maintained similar internal consistency reliability and predictive validity of the SCAS). Another strength of the SCAS is that the instrument allows practitioners to capture when cultural affiliation is not the result of heritage, birth, ethnicity, or language from their background or visible features. Finally, it is important to note that each of the subscales from the full instrument can be used as stand-alone assessment tools. For example, a practitioner may have concerns that a patient (who is a new immigrant) may be experiencing isolation and loneliness, which would put the patient at increased risk for depression. The practitioner could simply ask the questions on the relationship subscale to obtain a better idea of the patient's social support network.

Despite the aforementioned strengths, there are nonetheless limitations to consider with this newly psychometrically-analyzed instrument. Since all the results of the current study are based on a sample of cancer patients receiving radiation therapy, additional research is needed to address the effectiveness of the SCAS in other patient populations. Other researchers who have used the SCAS^{12,30} in other language translations with non-cancer patient groups showed similar psychometric properties in their results. These findings give credence to the likelihood that the measure may be suitable for other adult patient populations. Another area of caution relates to Factor 4 which relates to cultural health practices. This factor contains only 2 items with a Cronbach alpha value of .46 which indicates low reliability. Another limitation of the SCAS is that it was not tested in children, and the Asian, Latino/Hispanic, and Native American populations are underrepresented in this study when comparing these populations to the general United States populace. Additionally, the tests of predictive validity with emotional and global well-being in relation to the SCAS, showed very small correlations that were highly statistically significant. This is probably accounted for by the very large sample size. Note the amounts of variance accounted for, i.e., r^2 , are minimal and may be better indicators of the relationships between these convergent/divergent validity comparisons with the SCAS. They also may have been affected by the subsets of participants who affiliated with the host culture or who were not strongly affiliated with any non-dominant cultural group.

Considering that this is the first full psychometric examination of the SCAS, further modification, testing, and research related to the instrument is prudent. One area that may warrant attention is aligning the SCAS with Berry's framework for acculturation, at least at a theoretical level. This alignment could help practitioners plan even more effective, culturally specific interventions. In addition, the results of the factor analysis support adding additional scorable items to Factor 4, Cultural Health Practices, which currently contains only 2 items.

Additional items may increase the reliability of this subscale, making it more useful to clinicians.

Conclusion and Implications for Practice

Factor analysis provided a useful framework to examine the construct validity of the SCAS. The final factor solution utilized PCA with Oblimin rotation and revealed four components: Factor 1—Lifestyle, Factor 2—Language and Cultural Specific Holidays, Factor 3—Relationships, and Factor 4—Cultural Health Practices. Reliability and validity testing also strengthens the utility of this instrument.

The SCAS may prove to be a useful research tool for clinical practice because the more a patient is affiliated with his/her self-identified cultural group, the more probable it is that the patient may experience differences in values and beliefs from the dominant culture¹². Information obtained from this instrument may prepare members of the healthcare team for patients who may experience cultural misunderstanding or discomfort. More importantly, the SCAS is a tool that is suitable for use in clinical settings and that provides practitioners with practical information to deliver culturally-sensitive care.

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References

1. Enguidanos SM, Deliema M, Aguilar I, et al. Multicultural voices: Attitudes of older adults in the United States of America about elder mistreatment. *Ageing Soc.* 2014; 34(5):877–903. [PubMed: 25364064]
2. Gorman BK, Fiestas CE, Peña ED, et al. Creative and stylistic devices employed by children during a storybook narrative task: A cross-cultural Study. *Lang Speech Hear Ser.* 2011; 42(2):167–181.
3. Kayser K, Acquati C, Tran TV. No patients left behind: A systematic review of the Cultural Equivalence of Distress Screening Instruments. *J Psychosoc Oncol.* 2012; 30(6):679–93. [PubMed: 23101551]
4. Ding D, Hofstetter RC, Norman GJ, et al. Measuring immigration stress of first-generation female Korean immigrants in California: Psychometric evaluation of Demand of Immigration Scale. *Ethnic Health.* 2011; 16(1):11–24.
5. Jafari S, Bahariou S, Mathias R. Knowledge of determinants of mental health among Iranian Immigrants of BC, Canada: A qualitative study. *J Immigr Minor Health.* 2010; 12(1):100–106. [PubMed: 18351470]
6. Coffman MJ, Norton CK. Demands of immigration, health literacy, and depression in recent Latino immigrants. *Home Health Care Manage Pract.* 2010; 22(2):116–122.
7. Miller AM, Sorokin O, Fogg L. Individual, family, social, and cultural predictors of depressed mood in former Soviet immigrant couples. *Res NursHealth.* 2013; 36(3):271–283.
8. Kessler T, Mummendey A, Funke F, et al. We all live in Germany but ... Ingroup projection, group-based emotions and prejudice against immigrants. *Eur J Soc Psychol.* 2010; 40(6):985–997.
9. Kandel, WA. [Accessed June 4, 2015] CRS Report for Congress. Prepared for Members and Committees of Congress, Congressional Research Service. US immigration policy: Chart book of key trends. Dec 17. 2014 <https://fas.org/sgp/crs/homesecc/R42988.pdf>

10. Berry JW. Acculturation: Living successfully in two cultures. *Int J Intercult Rel.* 2005; 29:697–712.
11. Berry JW. Integration and multiculturalism: Ways towards social solidarity. *Pap Soc Represent.* 2011; 20:2.1–2.21.
12. Yu M, Wu T, Mood D. Cultural affiliation and mammography screening of Chinese women in an urban county in Michigan. *J Transcult Nurs.* 2005(16):107–116. [PubMed: 15764633]
13. Knipscheer JW, Kleber RJ. Acculturation and mental health among Ghanaians in the Netherlands. *Int J Soc Psychiatr.* 2007; 53(4):369–383.
14. Steel Z, Momartin S, Silove D, et al. Two year psychosocial and mental health outcomes for refugees subjected to restrictive or supportive immigration policies. *Soc SciMed.* 2011; 72(7): 1149–1156.
15. van Hout M. Assimilation, habitus and drug use among Irish Travellers. *Crit Public Health.* 2011; 21(2):203–220.
16. Lara M, Gamboa C, Kahramanian MI, Morales LS, Bautista DEH. Acculturation and Latino health in the United States: A review of the literature and its sociopolitical context. *Annu Rev Publ Health.* 2005; 26:367–397.
17. O'Mahony JM, Donnelly TT. How does gender influence immigrant and refugee women's postpartum depression help-seeking experiences? *J Psychiat Ment Health Nurs.* 2013; 20(8):714–725.
18. Kinsler JJ, Lee SJ, Sayles JS, et al. The impact of acculturation on utilization of HIV prevention services and access to care among an at-risk Hispanic population. *J Health Care Poor U.* 2009; 20(4):996–1011.
19. Mood DW. Strength of cultural affiliation scale [Measurement instrument]. 1996
20. Mood, DW.; Magnan, MA.; Northouse, LM. Strength of cultural affiliation scale: Utility of a psychometrically sound measure for oncology nursing. Paper presented at: The 7th Conference on Cancer Nursing Research; February 6-8, 2003; San Diego, CA.
21. Levenson, RW. General ethnicity questionnaire. Berkeley: University of California, Department of Psychology; 1994.
22. Zane, N.; Mak, W. Major approaches to the measurement of acculturation among ethnic minority populations: A content analysis and an alternative empirical strategy. In: Chun, KM.; Organista, PB.; Marin, G., editors. *Acculturation: Advances in theory, measurement, and applied research.* Vol. 2003. Baltimore, MD: United Press; p. 39-60.
23. Comrey, AL.; Lee, HB. *A first course in factor analysis.* Hillsdale, NJ: Erlbaum; 1992.
24. Nunnally, JC. *Psychometric Theory.* 2nd. New York, NY: McGraw Hill; 1978.
25. Watkins, M. Monte Carlo PCA for Parallel Analysis. State College, PA: Ed & Psych Associates; 2000. [Computer program]
26. Pallant, J. *SPSS survival manual.* 3rd. New York, NY: McGraw-Hill; 2007.
27. Cohen, JW. *Statistical power analysis for the behavioral sciences.* 2nd. Hillsdale, NJ: Lawrence Erlbaum Associates; 1988.
28. Trochim, W.; Donnelly, J. *Research methods knowledge base.* 3rd. Mason, OH: Atomic Dog Publishing; 2006.
29. Cella DF, Tulsky DS, Gray G, et al. The Functional Assessment of Cancer Therapy (FACT) scale: development and validation of the general measure. *J Clin Oncol.* 1993; 11(3):570–579. [PubMed: 8445433]
30. Crist J, Mood DW. Final report. Mexican-American elders use of home care services. 1R15R341850-01, National Institute of Nursing Research, National Institutes of Health (PI: J. Crist); 2008.

Table 1
Initial Factor Loadings for Exploratory Factor Analysis: Principal Component Analysis With Oblimin Rotation of Strength of Cultural Affiliation Scale (Structure Matrix) (n=604)

Items	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
To what extent does your cultural affiliation affect <i>insert items below</i> compared to the surrounding community as a whole?					
1. ...the clothing you wear	.857	-.300	.169	.221	.058
2. ...your hair style	.847	-.291	.205	.208	.199
3. ...the jewelry you prefer	.799	-.166	.159	.273	.131
4. ...your home decorations	.793	-.292	.237	.270	-.002
5. ...your choices of food & drink	.656	-.310	.453	.320	-.015
6. ...how you celebrate holidays in general	.648	-.324	.392	.309	.013
7. ...if, or how, you celebrate culturally specific holidays	.301	-.180	.250	.583	-.064
8. ...the language(s) you speak at home	.251	-.050	.137	.872	.080
9. ...the language(s) you speak outside your home	.190	.032	.106	.866	.061
10. ...the TV & music you prefer	.685	-.373	.442	.286	.193
11. ...how men and women typically relate to each other in your cultural group (same or different)	.278	-.007	.814	.234	.170
12. ^a Please describe in what ways the relationships between men and women are different within your cultural group(s).	–	–	–	–	–
13. ...how you follow your cultural group's way to behave in your man/woman relationships	.385	-.607	.510	.115	-.255
14. ...how parents in your cultural group typically relate to their children	.251	-.165	.838	.204	-.175
15. ^a Describe how parents raise and/or treat children differently within your cultural group.	–	–	–	–	–
16. ...how you follow your cultural group's way to behave in your parent/child relationships	.397	-.679	.477	.220	-.161
17. ...how many people in neighborhood share your cultural affiliation	.258	-.783	-.019	-.032	.306
18. ...how many of your friends share your cultural affiliation	.280	-.840	-.008	.111	.224
19. ...how often you see a Folk healer from your cultural group	.165	-.194	.168	.060	.745
20. ^a Please describe the person from whom you would seek help for health/illness matters.	–	–	–	–	–
21. ...how often you use special herbs or medicines that are common in your cultural group	.280	-.235	.293	.159	.591
22. ^a What kinds of medicines, herbs, roots, or special foods do you use?	–	–	–	–	–

Note: Bolded items indicate major loadings for each item.

^a A qualitative question (unscored) from the SCAS.

Table 2
Four Factor Solution for Exploratory Factor Analysis: Principal Component Analysis With Oblimin Rotation of Strength of Cultural Affiliation Scale (Structure Matrix) (n=604)

Items	Factor 1	Factor 2	Factor 3	Factor 4
To what extent does your cultural affiliation affect <i>insert items below</i> compared to the surrounding community as a whole?				
1. ...the clothing you wear	.856	.220	.164	.291
2. ...your hair style	.842	.215	.225	.312
3. ...the jewelry you prefer	.794	.277	.167	.178
4. ...your home decorations	.795	.266	.222	.273
5. ...your choices of food & drink	.663	.313	.434	.291
6. ...how you celebrate holidays in general	.653	.304	.381	.309
7. ...if, or how, you celebrate culturally specific holidays	.308	.576	.235	.161
8. ...the language(s) you speak at home	.251	.874	.152	.069
9. ...the language(s) you speak outside your home	.190	.868	.118	-.014
10. ...the TV & music you prefer	.685	.291	.464	.395
11. ...how men and women typically relate to each other in your cultural group (same or different)	.280	.238	.823	.046
12. ^a Please describe in what ways the relationships between men and women are different within your cultural group(s).	–	–	–	–
13. ...how you follow your cultural group's way to behave in your man/woman relationships	.405	.093	.458	.529
14. ...how parents in your cultural group typically relate to their children	.257	.207	.852	.200
15. ^a Describe how parents raise and/or treat children differently within your cultural group.	–	–	–	–
16. ...how you follow your cultural group's way to behave in your parent/child relationships	.415	.203	.446	.619
17. ...how many people in neighborhood share your cultural affiliation	.257	-.021	.051	.816
18. ...how many of your friends share your cultural affiliation	.283	.117	.049	.854
19. ...how often you see a Folk healer from your cultural group	.146	.099	.303	.345
20. ^a Please describe the person from whom you would seek help for health/illness matters.	–	–	–	–
21. ...how often you use special herbs or medicines that are common in your cultural group	.267	.187	.397	.351
22. ^a What kinds of medicines, herbs, roots, or special foods do you use?	–	–	–	–

Note: Bolded items indicate major loadings for each item.

^a A qualitative question (unscored) from the SCAS.

Table 3
Final Factor Loadings for Exploratory Factor Analysis: Principal Component Analysis With Oblimin Rotation of Strength of Cultural Affiliation Scale (n=604)

Items	Factor 1 Lifestyle	Factor 2 Language & Cultural Specific Holidays	Factor 3 Relationships	Factor 4 Cultural Health Practices
To what extent does your cultural affiliation affect <i>insert items below</i> compared to the surrounding community as a whole?				
1. ...the clothing you wear	.848	.184	.300	.152
2. ...your hair style	.842	.170	.265	.271
3. ...the jewelry you prefer	.793	.255	.167	.176
4. ...your home decorations	.789	.247	.332	.080
5. ...your choices of food & drink	.677	.333	.394	.062
6. ...how you celebrate holidays in general	.657	.324	.404	.095
7. ...if, or how, you celebrate culturally specific holidays	.299	.573	.234	.007
8. ...the language(s) you speak at home	.250	.851	.065	.113
9. ...the language(s) you speak outside your home	.187	.860	-.006	.066
10. ...the TV & music you prefer	.697	.282	.412	.272
12. ^a Please describe in what ways the relationships between men and women are different within your cultural group(s).	—	—	—	—
13. ...how you follow your cultural group's way to behave in your man/woman relationships	.403	.150	.748	-.081
15. ^a Describe how parents raise and/or treat children differently within your cultural group.	—	—	—	—
16. ...how you follow your cultural group's way to behave in your parent/child relationships?	.393	.252	.794	.040
17. ...people in neighborhood share your cultural affiliation	.243	-.124	.636	.545
18. ...how many of your friends share your cultural affiliation	.254	.022	.708	.496
19. ...how often you see a Folk healer from your cultural group	.167	.075	.085	.733
20. ^a Please describe the person from whom you would seek help for health/illness matters.	—	—	—	—
21. ...how often you use special herbs or medicines that are common in your cultural group	.287	.189	.186	.597
22. ^a What kinds of medicines, herbs, roots, or special foods do you use?	—	—	—	—

Note: Bolded items indicate major loadings for each item. Also, the following 2 items were removed from the final solution: 11. how men and women typically relate to each other in your cultural group (same or different) and 14. how parents in your cultural group typically relate to their children.

^a A qualitative question (unscored) from the SCAS.

Table 4
Validity Testing: Independent-Samples T-tests Comparing SCAS Scores for Various Subcultures (n=604)

Comparison of Cultural Groups	Mean	Standard Deviation	t	Significance (two-tailed)	Difference in Means	Eta Squared	Percent Variance
German	8.4	8.0	(33) -2.7	.011	-8.2	.17	17%
Irish	16.6	10.0					
German	8.4	8.0	(29) -2.4	.023	-7.5	.16	16%
Jewish	15.8	9.3					
German	8.4	8.0	(31) -3.2	.003	-9.1	.25	25%
Mediterranean	17.4	8.3					
German	8.4	8.0	(17) -2.3	.037	-10.8	.14	10%
Native American	19.2	15.7					