

Validating Culture- and Gender-Specific Constructs: A Mixed-Method Approach to Advance Assessment Procedures in Cross-Cultural Settings

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SUMMARY. Despite on-going calls for developing cultural competency among mental health practitioners, few assessment instruments consider cultural variation in psychological constructs. To meet the challenge of developing measures for minority and international students, it is necessary to account for the influence culture may have on the latent constructs that form a given instrument. What complicates matters further is that individual factors (e.g., gender) within a culture necessitate additional refinement of factor structures on which such instruments are based. The current work endeavors to address these concerns by demonstrating a mixed-methods approach utilized to assess construct validation within a specific culture; and in turn develop culturally-specific instruments. Qualitative methods were used to inform the development of a structured self-report by gaining detailed knowledge of the target culture and creating items grounded in interview and observational data. Factor analysis techniques and triangulation with qualitative analyses validated these findings. Previous work (Sarkar, 2003) suggested a number of gender-specific perceptions of mental health constructs within the target culture and these were investigated using additional mixed-method analyses. This article demonstrates an emerging mixed-method technique for developing culturally sound assessment tools, offers guidance on how to incorporate the overall approach in assessment, and provides a basis for thinking critically about the use of existing instruments when working with diverse populations. doi:10.1300/J370v22n02_02 [Article copies available for a fee from The Haworth Document Delivery Service: 1-800-HAWORTH. E-mail address: <docdelivery@haworthpress.com> Website: <<http://www.HaworthPress.com>> © 2006 by The Haworth Press, Inc. All rights reserved.]

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Researchers, policy makers, professional organizations, and mental health practitioners have repeatedly called attention to the lack of culturally appropriate instruments for ethnic minorities, and the need to consider cultural factors in mental health programming (American Psychological Association [APA], 1990, 2003; Hall & Okazaki, 2002; Tanaka, Ebreo, Linn, & Morera, 1998; United States Department of Health and Human Services [USDHHS], 1999, 2001). An example easily demonstrates why such calls are made. Egeland, Hostetter and Eshleman (1983) describe how culture can influence assessment

when describing manic behaviors of Old Order Amish suffering from bipolar disorder. Suppose a client presents some of the heightened psychomotor activities associated with the disorder, but otherwise engages in such behaviors as using pay phones, dresses as a typical American might, is sexually active with more than one partner and uses machinery. Absent knowledge of Amish cultural norms, such behavior might easily be viewed as typical and a critical diagnosis could be missed. In this example, even cursory knowledge of the culture reveals just how suspect these behaviors might be, and such recognition would facilitate proper diagnosis. Unfortunately, however, dealing with cultural factors is almost never this straightforward because cultural variation extends into a myriad number of groups and related effects can be subtle (see Castillo, 1997).

Recognizing the complexities of culture represents a critical component of school psychology practice (Rogers et al., 1999); indeed, an empirical base supports the idea that cultural factors play an important role in influencing mental health (APA 2003; Nastasi, Moore, & Varjas, 2004). One explanation is that mental health constructs can be viewed differently by individuals from varied cultures, and perception is influenced by different agents of socialization (e.g., parents, school, and peers) that shape people's beliefs, motives, attitudes, and behavior via socialization practices and expectations. Other variables such as gender can influence how mental health constructs are formed (Brannon, 2002; Sarkar, 2003).

Clear and well-replicated gender differences in mental illnesses like depression, anxiety or schizophrenia have been reviewed by mental health researchers (Romans, 1998). In addition, researchers have shown that physiological, social, psychological, and environmental factors each predict gender differences in terms of mental health constructs (Anshell, Porter, & Quek, 1998; Bird & Harris, 1990; Block & Robins, 1993; Knox, Funk, Elliott, & Bush, 1998; Ptacek, Smith, & Dodge, 1994). Broader socio-cultural factors also play an important role in influencing mental health of individuals through the process of socialization. For instance, socialization practices within a particular culture influence the process of gender role socialization, and researchers have shown how this socialization process has made women more vulnerable to mental health problems (Das & Kemp, 1997; Das Dasgupta, 1996). Through its various agents of socialization, culture fosters development of gender role attitudes, beliefs/stereotypes, and gender-specific behaviors which contribute to the gender differences in mental health constructs (Sarkar, 2003).

In view of the findings of gender-role socialization, investigating the gender differences in mental health constructs in the context of culture is important in providing appropriate services (Baxter, 1998; USDHHS, 1999; 2001). However, there is a dearth of research exploring the role of culture and particularly gender as a cultural variable influencing mental health of individuals; this is especially true in school psychology (Henning-Stout & Brown-Cheatem, 1999). In culturally diverse settings, it is therefore important to explore if there is variation in the definition of mental health constructs. Because many U.S. public school systems represent multicultural contexts (Rogers et al., 1999), the methods described below have clear applications for practice.

What complicates matters is that most psychological instruments do not adequately address the influence of culture on functioning, especially for ethnic minority groups (APA, 2003; Padilla, 2001; USDHHS, 1999, 2001). Some literature suggests that members of a cultural majority tend to be unaware of cultural influences (Sue, Bingham, Porche-Burke & Vasquez, 1999); not surprisingly, researchers often generate instruments with little regard for these factors (Rogler, 1999). Failure to address cultural differences in assessment may therefore lead to problems with construct validity and subsequent efforts to develop interventions based on such assessment.

The objective of this article is, therefore, to address the shortcomings in typical assessment in multicultural settings by demonstrating a mixed-methods approach (see Tashakkori & Teddlie, 2003) for developing and validating culturally specific instruments. The approach combines the use of ethnographic and factor analytic methods to develop and test psychological instruments for students located in Sri Lanka. Some findings presented here will not have immediate relevance outside of Sri Lanka, although the methods can be readily applied to future studies concerned with mental health assessment.

The overall approach entailed several stages: (a) a two-year ethnography conducted in the target culture for the purpose of understanding self-concept issues of adolescents, (b) developing and administering a series of culture-specific instruments that further assess these issues, and (c) demonstrating a mixed-method approach for identifying and validating psychological constructs that are specific to the target culture. An overview of this process can be found in Hitchcock and colleagues (2005). The primary purpose of the earlier publication was to illustrate the methodology with a specific focus on the substantive area of self-concept (as defined by Harter, 1999) and concerns for adolescents in Sri Lanka. This paper extends the previous work through reanalysis of qualitative data (that have not been previously published) and quantitative

analysis of a different dataset. The earlier work focused on students' perceptions of how their parents valued various competencies and behaviors; this article focuses on student perceptions of their competencies, and identifying gender-specific differences of these perceptions.

FOUNDATIONS

The work described herein employed the Ecological-Developmental Model of Mental Health (EDMMH; Nastasi et al., 2005) as the conceptual framework for investigating individual and cultural factors related to mental health. The EDMMH has its foundations in psychology and anthropology (Nastasi & DeZolt, 1994; Nastasi, Varjas, Sarkar, Jayasena, 1998) and has been used to guide the development of culture-specific definitions of key constructs through the integration of cultural factors related to the experiences of participants. An ecological approach to human development involves scientific study of a 'progressive, mutual accommodation' between an individual and the environment, in view of the social, cultural and historical contexts (Bronfenbrenner, 1989; 1999). Reflected in the EDMMH is the conceptualization of individual mental health as an interaction among the personal factors—self-perceptions of culturally valued competencies, personal resources, and personal vulnerability, with the cultural factors—cultural norms, competencies valued within the culture, social-cultural stressors and resources, and socialization agents and practices. The model promotes the idea of developing a sense of normative cultural values and any conflicts in values among groups within a context. This allows for an assessment of deviant behavior given cultural norms and stressors derived from lack of resources and competing group needs, both of which are representative of mental health concerns. EDMHH can help assess what might be culturally deviant, but more importantly, it is a framework that is consistent with well-established conceptions of risk and protective factors related to mental health/illness of individuals and prevalence within communities (e.g., Elias & Branden, 1988), models of stress and coping (e.g., Lazarus & Folkman, 1984) and personal-social competence (Nastasi & DeZolt, 1994). It also is consistent with recent developments in the field of positive psychology (Frydenberg, 2002; Snyder & Lopez, 2002).

QUALITATIVE METHODOLOGY AND CONTEXT

The research involved the combined use of qualitative (e.g., interviews, focus groups) and quantitative (rating scales) data collection

methods to assess the contextual environment of adolescents in Sri Lanka. The study was conducted within the municipality of Kandy, the second largest city in the country with a population of approximately 100,000. Its schools draw students from the urban community and surrounding villages and the socioeconomic status of community members ranges from lower to upper class (Nastasi et al., 2004). The qualitative study was formative in nature and involved the assessment of the mental health needs of adolescents (see Nastasi et al., 2004). This study was conducted with the long-term goal of developing school-based mental health programs in that country. The findings from that work were used to develop and evaluate a culture-specific mental health assessment tool and intervention program for promoting mental health among school-age children in Sri Lanka.

Sri Lanka has experienced advances in education, health and general standard of living (United Nations Development Programme, 2002; The World Bank in Sri Lanka, 2003). However, the last twenty years of Sri Lankan history has been marked by internal tension resulting from high unemployment rates, civil war, ethnic tension and the youth insurrection (1985-1991; Gunaratna, 1990). These factors have contributed to an unstable economy with dwindling per capita income as well as political unrest and mental health problems among the youth. In an effort to gather data on the mental health of students, researchers conducted group interviews with adolescents (33 groups) and teachers (18 groups), and individual interviews with principals from 18 schools to explore the following constructs: (a) cultural definition of mental health/personal-social competence and adjustment difficulties, (b) cultural mechanisms for socialization and development of mental health/personal-social competence, (c) social stressors as viewed by the adolescents, (d) mechanisms/personal resources for coping with those and other everyday life stressors, and (e) existing resources within the schools and community for securing mental health services. The interviews focused on gathering a wide range of data with regard to the definition of key constructs. Interviews were therefore conducted in an open-ended, semi-structured format (Nastasi, Varjas, Sarkar & Jayasena, 1998.)

Interview questions were generated in collaboration with an educational sociologist/teacher educator and a child psychiatrist in Sri Lanka who had experience in schools (Nastasi et al., 1998). Additionally, questions were asked regarding more specific mental health related issues (e.g., stressors the youth face with regard to academics, types of academic adjustment difficulties that are prevalent among adolescents, family problems and related adjustment difficulties in the children, and

the ways in which children and adolescents cope with family problems). Data were coded to identify and define the culture-specific individual and cultural constructs. Efforts were made to understand the educational and psychological concerns of students through their own perspective, as well as those of school professionals. Specific issues noted were high rates of mental health concerns such as substance abuse among peers and parents, stress associated with dating and teacher/parent interest in limiting interaction between the genders, and suicide. A variety of educational concerns associated with a high stakes examination system and limited school resources also were noted. Finally, the data reflected gender differences in several mental health constructs. For example, girls discussed sexual harassment, lack of freedom compared to their male peers and differential expectations for women; whereas boys expressed concern about violence, corruption, and unemployment. [See Nastasi et al., 1998 for full report of methods and initial results.] In view of these findings, a re-analysis of qualitative data was performed to explore the gender differences in the definition of mental health constructs. These analyses formed the basis for a key approach that can combine quantitative and qualitative findings—ethnographic surveys.

QUANTITATIVE METHODOLOGY

Ethnographically informed instruments are designed to reflect the experiences and constructs relevant to the target population (Schensul & LeCompte, 1999), thus yielding culture-specific measures. From the qualitative data, we developed self-report measures designed to assess adolescents' perceived competencies and perceived value of the competencies from their own perspective and that of parents, teachers, and peers. The instruments used the Likert-scale (3-point; 1 = not at all, 2 = some, 3 = a lot) response format. On the perceived competencies measure (the focus of this paper), adolescents were asked to rate themselves on a set of culturally defined competencies. Scale and item construction were designed to reflect the full variation of data across age, gender, ethnicity, and ecological context. After piloting, back translating (e.g., English → Sinhalese → English, to insure accuracy of meaning) and refining via consultation with local experts with knowledge of the target culture, the instrument was administered in written form to students ($n = 611$; 315 males, 296 females), grades 7-12, ages 12-19,

across six schools which represented the range of the student population in terms of ethnicity, religion, and socioeconomic status. For further discussion of instrument development, see Hitchcock and colleagues (2005).

The strategy used for the quantitative analysis included a principal components analysis (PCA) of the items in the survey instrument. Promax (oblique) rotation was used to account for an expected correlation among components. Items loading less than .30 on any scale, as well as complex items (those whose factor loadings across scales differed by less than .20) were removed. Cronbach's alpha, a measure of internal consistency, was computed for all scales for the total sample and by gender. Multivariate analysis of variance (MANOVA) was used to compare first the scale scores resulting from the factor analysis by gender, then the individual items on any scale that demonstrated significant differences between boys and girls.

FINDINGS FROM QUALITATIVE ANALYSES

Formative qualitative data were collected by asking students and teachers to describe characteristics of socially-acceptable and unacceptable behavior patterns for boys and girls. Analysis of these data provided evidence of (1) socially-acceptable "suitable" behavior, (2) socially-unacceptable "unsuitable" behavior and (3) behavior that reflected attention to the personal and interpersonal needs of adolescents (see Table 1). Overall, gender differences in how unsuitable behavior is defined were noted. That is, both males and females recognized a broader unsuitable behavior construct but differed when defining it. In terms of suitable behavior, both genders defined it the same way but differences were noted in the degree of expected compliance, with girls generally reporting that they were expected to engage in socially-acceptable behaviors more so than boys. In the area of personal/interpersonal needs, minor gender differences were reflected in the restricted movement and lack of independence and freedom of girls. Following is an overview of each construct.

Suitable Behavior

In group interviews, both male and female adolescents described suitable behavior to include "good" behavior and obedience (see Table 1). For example, suitable behavior entails following school rules and lis-

TABLE 1. Definition of Suitable and Unsuitable Behavior with Gender Differences Highlighted

Cross-Gender Definitions of Suitable Behavior	
Well behaved, Obedient, Disciplined, Humble, Respect elders, Helpful, Loyal, Trustworthy, Supportive, Guides others (e.g., to correct path), Makes effort for best performance in academics	
Male-Specific Responses	Female-Specific Responses
Obey laws of the country, Leader, Possesses the ability to address and solve problems, Avoids trouble	Follows rules, Talks and behaves nicely with people, Loves the country—protects it, Performs community services, Sets example for others, Treats and loves everyone equally—irrespective of ethnic origin
Cross-Gender Definitions of Unsuitable Behavior	
Ill behaved (e.g., rude, tease girls), Abusive (e.g., use abusive/foul languages), Disruptive (e.g., interrupt others' work), Noncompliance, School truancy, Neglects responsibilities and/or obligations, Not helpful (e.g., do not help friends in trouble)	
Male-Specific Responses	Female-Specific Responses
Throws tantrum, Pouts, Runs away from home, Betrays friends, Aggressive (e.g., fights, argues; Abusive), Abuses alcohol, drugs, Steals or robs, Joins the gang, carries weapons	Does not follow etiquette, Lies, Stubborn, Interfering, Disruptive, Mistreats others, Slanders, Does not love the country, Having romantic relationship with boys, Acts like a boy

tening to adults. Both male and female students in Sri Lanka argued that respect for elders is a major attribute of culturally valued suitable behaviors. Suitable behavior also was characterized as conducting oneself well, such as by being well disciplined, humble, loyal, and trustworthy. Respondents from both genders revealed that culturally acceptable suitable behavior also included being performance-oriented (e.g., performs well and assumes leadership in extracurricular and competitive activities).

As previously noted, there were differences between boys and girls in terms of suitable behavior that focused on degree of compliance expectations. That is, females were expected to exhibit more of these behaviors than boys. Female students described a girl showing suitable behavior as one who listens to what parents and teachers say, and observes the rules and regulations. Examples of such behaviors might be trying to avoid troubling others, giving up a seat to a teacher when they are on the bus, and observing customs and tradition of the country. Girls indicated that such an individual talks nicely with others, sets a good example for others, performs community services, and loves the country. Male students also indicated that such a person obeys the law and does not harm others, but focused more on avoiding disruptive behavior, as opposed to following a broad set of expectations.

Unsuitable Behavior

Both males and females referred to unsuitable behavior as being “ill behaved” (e.g., gets drunk and misbehaves with girls), aggressive (e.g., fights with other people), abusive (e.g., uses foul languages), and/or disruptive (e.g., disrupts the classroom). Noncompliance (e.g., refuses to comply with rules; does not obey elders) and school truancy were other attributes of unsuitable behavior among adolescents. Overall, descriptions of unsuitable behavior appeared to be readily identifiable in interview responses. Despite this finding, the qualitative data indicated important gender differences in how the construct is defined. Unsuitable behavior among Sri Lankan girls was described in terms of dishonesty (e.g., lying to parents), stubbornness, not following etiquette, and engaging in romantic relationships or love affairs. Furthermore, girls did not approve of cross-gender behavior. They indicated that “girls who act or speak like boys or dress like boys” have behavioral problems. Males described the construct in different terms. They focused on behaviors such as delinquency (e.g., substance abuse, stealing, running away from home, joining gangs) and aggression (e.g., fighting, quarrelling with adults or peers, assaulting others).

Personal/Interpersonal Needs

Students provided information about personal and interpersonal needs during their interviews. Although few gender differences were found in terms of this construct, it does provide an interesting perspective of some of the pressures adolescents report. Respondents indicated that poverty limits their access to basic necessities of life such as proper food, clothing, housing and education. They also indicated that family support, both material and emotional, was very important for them to thrive. Meanwhile, several respondents, particularly girls, indicated that many mothers leave to work in the Middle East (e.g., Saudi Arabia, Jordan, Kuwait, Qatar, United Arab Emirates) for financial reasons. They find jobs as household workers or maids and send money to their families in Sri Lanka, leaving children to assume several domestic responsibilities without maternal support.

Respondents were vocal about their academic needs in terms of instructional support, guidance, and emotional support that they received from parents, teachers, peers, relatives, and private tutors. They particularly emphasized the importance of effective teaching in the classroom and the support from teachers to meet their academic needs (recall Sri

Lanka uses a high stakes examination system). They also described the lack of mental health services in school. They indicated that such services were only available through psychiatric centers at hospitals, which are often not readily accessible. Furthermore, mental illness is stigmatized in the culture and this is thought to reduce the likelihood that services will be accessed.

Respondents spoke about their need for extracurricular activities. In particular, they expressed the need for recreation and complained about lack of recreational opportunities due to academic pressure from parents. Sample quotes include:

[Our] worst stress is tuition [private tutoring; additional instruction outside of the school context] . . . here all girls get tuition. We finish school at 2 p.m. and go home and grab a snack and go to tuition [meaning class] . . . we need other things like sports. But we don't have the time. [Female respondent]

[There is] so much competition. We don't have lots of time to do extracurricular activities. There is not time to do things kids are supposed to do. No hobbies. We do not have time to do such things . . . we have little time, we get tired from going to classes. [Male respondent]

Students expressed a desire to go out with their friends, party, go on vacations, and watch sports and television. Interview data from adolescents and adults indicated that indulging in recreational activities is typically not permitted by parents because of the strong emphasis on academic preparation.

Several students mentioned interest in interacting with opposite-sex friends; meanwhile, Sri Lankan society does not encourage free interaction of males and females. For example, boys and girls mentioned that they were not allowed by their parents to interact with the opposite gender or have any relationship with them. Many students thought that this practice needs to be changed. They also indicated the importance of romantic relationships during adolescence and how their parents, relatives and the society did not approve of such relationships. Female respondents also indicated the lack of freedom and independence for girls in Sri Lankan society. They suggested that girls enjoyed much less freedom and independence in contrast with the boys. Their activities were restricted and supervised by parents and other elders. The girls expressed the need for more freedom and removal of restrictions that

would allow them to function independently and would promote self-efficacy and self-confidence in girls.

Although adults emphasized the importance of suitable and unsuitable behaviors as critical to definitions of culturally-valued competencies, adolescents also emphasized behaviors that related to their personal and interpersonal needs. For this reason, when developing the perceived competence instrument, we included items related to effective engagement in recreational activities and interpersonal relationships (i.e., reflecting a more “well-rounded” adolescent or, as described in the culture, the “all-rounder”).

FINDINGS FROM QUANTITATIVE ANALYSES

Principal Components Analysis (PCA). Recall that qualitative data were used to develop surveys. Analysis of survey responses yielded an initial scale structure that was congruent with the qualitative findings. Three factors were identified. *Unsuitable Behavior (socially unacceptable behavior)* [$\alpha = .94$; $\alpha = .95$ (*Female*); $\alpha = .93$ (*Male*)] consisted of fifteen items (see Table 2). These items described behaviors viewed to be inappropriate within this culture (e.g., drug use, stealing, and fighting). *Suitable Behavior (socially acceptable behavior)* [$\alpha = .76$; $\alpha = .72$ (*Female*); $\alpha = .78$ (*Male*)] consisted of thirteen items. This scale described desirable adolescent behaviors within this culture, including studying, following school rules, and remaining clean in appearance. The final factor, *Personal/Interpersonal Needs* (i.e., behaviors/competencies related to fulfilling personal and social needs of Sri Lankan adolescents) [$\alpha = .72$; $\alpha = .67$ (*Female*); $\alpha = .76$ (*Male*)], consisted of nine items that described behaviors/competencies for meeting these needs. These needs included spending the day with friends and going to parties. These factor structures were expected both because of the qualitative analyses but also because they have been previously established with a similar survey (student perceptions of the degree to which parents value the behaviors) using the same sample (Hitchcock et al., 2005). Note, however, that the previous work did not examine the data for gender differences. Table 2 contains factor loadings for males and females as well as for the total sample.

MANOVA analyses were performed to test for gender differences. In the first MANOVA, gender was used as the independent variable, and the three scale scores were used as dependent variables. The overall MANOVA was significant, Wilks Lambda = .96, $F(3, 606) = 8.77$, $p <$

TABLE 2. Factor Loadings Resulting from Principal Components Analysis (PCA) and Differences of Scale Scores and Individual Items by Gender

Scale/Item		Factor Loadings			Overall	Male	Female
		Overall	Female	Male	Mean (SE)	Mean(SE)	Mean(SE)
Suitable Behaviors	Cronbach Alpha(α)	.94	.95	.93	2.75 (.23)	2.70 (.25)	2.79 (.19)***
	I am honest.	.62	.59	.61	2.81 (.41)	2.75 (.45)	2.87 (.35)***
	I obey school and classroom rules.	.60	.54	.60	2.87 (.35)	2.80 (.42)	2.92 (.26)***
	When somebody shows me a mistake, I like to accept it and correct myself.	.58	.45	.64	2.84 (.38)	2.77 (.44)	2.90 (.31)***
	I like to look after others who are sick or hurt.	.57	.54	.53	2.73 (.47)	2.64 (.53)	2.83 (.39)***
	I study regularly.	.55	.53	.55	2.58 (.51)	2.53 (.53)	2.64 (.49)**
	I pay attention to the studies in the school.	.55	.49	.60	2.94 (.24)	2.92 (.27)	2.95 (.21)
	I persevere even when faced with a difficult task.	.48	.48	.63	2.66 (.52)	2.60 (.56)	2.72 (.47)**
	I help the poor through good works.	.47	.45	.44	2.62 (.49)	2.53 (.51)	2.70 (.46)***
	I interact well with my teachers.	.47	.48	.46	2.85 (.37)	2.83 (.40)	2.88 (.35)
	I move with respectable peers.	.45	.31	.55	2.72 (.53)	2.68 (.56)	2.75 (.51)
	I follow rules and expectations according to the situation.	.44	.41	.44	2.83 (.39)	2.80 (.42)	2.85 (.37)
	I observe customs and traditions of the country.	.43	.52	.43	2.71 (.47)	2.67 (.49)	2.75 (.43)*
	I am clever (intelligent).	.42	.47	.37	2.63 (.50)	2.67 (.50)	2.60 (.50)
Unsuitable Behaviors	Cronbach Alpha (α)	.76	.72	.78	1.06 (.22)	1.08 (.23)	1.05 (.21)
	I use drugs.	.91	.92	.91	1.03 (.21)	1.03 (.23)	1.02 (.20)
	I drink alcohol.	.91	.94	.89	1.03 (.23)	1.04 (.24)	1.03 (.23)
	I steal.	.90	.94	.86	1.03 (.23)	1.04 (.24)	1.03 (.23)
	I carry weapons.	.85	.93	.75	1.04 (.26)	1.06 (.27)	1.04 (.25)
	I smoke cigarettes.	.85	.89	.81	1.03 (.23)	1.03 (.25)	1.03 (.22)
	I persuade others to join a gang.	.82	.84	.81	1.03 (.24)	1.03 (.25)	1.03 (.24)

TABLE 2 (continued)

Scale/Item		Factor Loadings			Overall	Male	Female
		Overall	Female	Male	Mean (SE)	Mean(SE)	Mean(SE)
Unsuitable Behaviors	Cronbach Alpha(α)	.76	.72	.78	1.06 (.22)	1.08 (.23)	1.05 (.21)
	I persuade others to engage in bad habits.	.79	.75	.83	1.04 (.25)	1.04 (.25)	1.03 (.24)
	I insult others.	.73	.86	.59	1.09 (.32)	1.12 (.35)	1.05 (.29)
	I use profane language	.71	.77	.68	1.09 (.33)	1.13 (.28)	1.05 (.27)
	I scold or criticize teachers.	.72	.80	.65	1.09 (.33)	1.13 (.38)	1.06 (.27)
	I interrupt others' work.	.72	.74	.70	1.09 (.23)	1.10 (.23)	1.07 (.23)
	I associate with bad peers.	.69	.86	.57	1.08 (.31)	1.14 (.37)	1.04 (.23)
	I am a member of a gang.	.70	.71	.71	1.07 (.32)	1.06 (.28)	1.07 (.35)
	I waste time.	.60	.57	.64	1.10 (.37)	1.12 (.40)	1.08 (.34)
	I don't carry out my responsibilities.	.45	.53	.36	1.17 (.46)	1.17 (.46)	1.17 (.29)
Personal/Interpersonal Needs	Cronbach Alpha (α)	.72	.67	.76	2.50 (.34)	2.48 (.36)	2.52 (.31)
	I like to spend the day with friends.	.69	.65	.71	2.42 (.63)	2.38 (.65)	2.46 (.62)
	I like to have fun with others.	.62	.61	.64	2.56 (.59)	2.56 (.59)	2.56 (.60)
	I listen to others' problems.	.61	.48	.70	2.21 (.76)	2.19 (.74)	2.22 (.77)
	I like to listen to music or sing.	.53	.50	.55	2.70 (.49)	2.65 (.51)	2.75 (.46)
	I like to go on trips.	.53	.54	.53	2.64 (.53)	2.67 (.53)	2.61 (.53)
	I help others to solve their problems.	.49	.41	.53	2.55 (.57)	2.52 (.60)	2.58 (.55)
	I am sensitive to others' feelings and needs.	.48	.40	.53	2.41 (.59)	2.39 (.59)	2.43 (.60)
	I like to go to parties.	.49	.49	.49	2.40 (.58)	2.42 (.61)	2.39 (.55)
	I safeguard others' secrets.	.40	.41	.40	2.61 (.64)	2.54 (.66)	2.67 (.63)

Note: * $p < .05$; ** $p < .01$; *** $p < .001$

.001. The follow-up analysis indicated that one of the scales, *Suitable Behaviors*, was different by gender [$F(3,606) = 25.3, p < .001$], with girls scoring higher than boys. The other two factors were not statistically significant at the .05 level (*Unsuitable Behaviors*— $F(3,606) = 3.07, p = .08$; *Personal/Interpersonal Needs*— $F(3,606) = 2.45, p = .12$). Subsequent analyses were performed to examine the individual items in the *Suitable Behaviors* factor by gender. The overall MANOVA, as expected, was statistically significant (Wilks Lambda = .90, $F(13, 582) = 4.80, p < .001$). Table 2 contains more detailed information of the analysis, including the items in each factor, the factor loading on the individual factor, the means and standard errors for each factor and item by gender, and significant differences (determined by the MANOVA) by gender. To summarize, results of the factor analyses provided construct validation of perceived competencies consistent with cultural concepts reflected in the qualitative data. A key finding is that the suitable behavior construct differs by gender; in general, girls reported more suitable behaviors.

Examination of the factor loadings for boys and for girls indicated that there might be differences in factor structure. Such differences can illuminate ways in which boys and girls interpret items within a construct differently. Tests for factor (construct) invariance using structural equation modeling can be used to help locate such statistical differences that can then be compared to qualitative findings (see Byrne, 1994). Hypotheses are developed that test the equivalence of factor loadings across groups (levels of gender, in this case). While the details of the analysis are beyond the scope of this paper, we conducted preliminary analyses using this technique.¹ Table 3 contains a summary of the analyses. The strategy is to initially test the equivalence of the factor structure across groups; then, successively restrictive equality constraints are imposed on the models. For example, the constraints of interest here are the factors loadings. If item factor loadings are constrained to be equal across models, and the change in the degrees of freedom and chi-square are examined, a statistically significant chi-square statistic suggests differences in structure. The results of Table 3 show that, while *Suitable Behaviors* and *Personal & Interpersonal Needs* factor items load equivalently for boys and girls, there are differences in the factor structure of *Unsuitable Behaviors*.

This finding is supported by the qualitative data which indicated that several behaviors such as joining gangs, robbing, carrying weapons, assaulting people, alcohol and drug abuse were described only by male respondents and viewed as only relevant to males. This occurrence may

TABLE 3. Constrained Models CFA Tests Summary of Analyses

Model	χ^2	Df	$\Delta\chi^2$	Δdf	CFI	RMSEA
Full, 3 Factor Model, no constraints	4246.637	1252			.964	.06
Full, 3 Factor Model, Factor loadings, variance, covariances constrained to be equal	4493.456	1326	246.82	74*	.962	.06
Full, 3 Factor Model, Factor loadings only for all three factors constrained	4334.142	1286	87.51	34*	.963	.06
Unsuitable Behaviors only constrained	4306.790	1266	60.15	14*	.963	.06
Suitable Behaviors only constrained	4265.249	1264	18.62	12	.964	.06
P & IP Needs only constrained	4255.381	1260	8.744	8	.964	.06

* $p < .05$

Note. Models were compared to the full models with no constraints. The results suggest (and are consistent with exploratory analysis) that structures for Unsuitable Behaviors are different for boys and girls.

be explained by the cultural emphasis on gender-appropriate behavior which is comparatively more rigid and less permissive for women. Some caution is needed to avoid over-interpretation. The assessment tool used for quantitative data collection was a self-report instrument and the female respondents may have included only the socially desirable responses to conform to the cultural expectations. These differences in definition and interpretation of unsuitable behavior do, however, require further examination.

DISCUSSION

When dealing with populations with distinct cultural variables, researchers typically employ preexisting clinical or research instruments developed for mainstream American children and adolescents, in some instances with minimal modifications (e.g., language translation) and without re-validation. This is problematic because of the likelihood that such instruments will miss nuanced issues important to a target population. The work described here provides an alternative and represents theoretical and methodological approaches for investigating the role of individual and cultural factors in mental health of a distinct culture, par-

ticularly the combined use of ethnographic and factor analytic techniques. As a result of this effort, a culturally specific instrument that measures self-concept issues in Sri Lanka was developed and yielded insights into the culture. There is compelling data that show girls report that they endeavor to follow societal expectations for culturally-defined suitable behavior when compared to boys. This could be attributed to the cultural emphasis on a traditional gender role behavior that encourages submissiveness, tolerance and a caring attitude in women (Das Dasgupta, 1996).

The findings dealing with girls' perceptions of suitable and unsuitable behavior may prove useful when engaged in future work in the culture. Should a girl appear to not be following expectations, we can now recognize that follow-up may be important. The girl may simply be unusually independent, or she might be reacting to some difficult life circumstances. Whatever the case, these analyses provide a basis for recognizing the behavior as unusual and follow-up may be warranted. This work also suggests a need to revisit the unsuitable behavior construct in light of gender-specificity. As noted above, the items that form the factor structure for the construct load differently by gender. This is a subtle difference from the MANOVA results indicating differences in suitable behavior. In this latter construct, the data do not suggest the genders define the construct differently; girls simply scored higher than boys. For Unsuitable Behavior, however, Table 2 shows the factor loadings for some items were higher for girls than boys (e.g., I carry weapons, I insult others, I scold or criticize others, I associate with bad peers, and I don't carry out my responsibilities). This suggests greater variability in how males responded to these items and the issue can be further explored in future studies. The Personal/Interpersonal Needs construct appeared in the factor analysis, but this was not gender-specific. These findings were congruent with qualitative data; there was no reason to suspect there would be gender differences on this factor. The identification of this third factor can also inform future intervention work. The data suggest that Sri Lankan students recognize a need for recreational time with friends, yet this is generally not allowed by parents and educators. Communicating this finding to stakeholders may alone be beneficial as allowing for more recreation may reduce stress among adolescents (a long-term goal of this research program). More generally, the psychological constructs presented here have been validated by qualitative and factor analytic data analyses, so researchers can proceed with confidence using this instrument for wider research projects within the country.

One limitation of the present study is that our data did not completely capture indicators of socioeconomic status (SES); qualitative work did not highlight this as an important factor. Ancillary analyses (not shown) including mother and father education as SES indicators as covariates did not change any of the conclusions made here, and gender did not interact with SES variables. However, the results of those analyses suggested that SES indicators may offer important ways to understand elements of students' self-concept in Sri Lanka; this issue should be explored in future research.

We opened with a discussion as to why having knowledge of a target culture facilitates assessment. A specific example was provided using Old Order Amish and the data here further demonstrate the point. Now suppose that, in Sri Lanka, an interventionist meets a girl who reports she is rejecting behavior expectations imposed upon her by parents by actively seeking out recreational activity in lieu of studying and engaging in cross-gender behavior (e.g., acting or dressing like a boy). In the United States this behavior would not be considered unusual and possibly even be encouraged; in Sri Lanka, such behavior would be non-normative and a caregiver would do well to pay closer attention to the girl's circumstances. This raises the issue of whether it is better to change the local culture to facilitate such independence or to get the girls to conform. This represents a complex debate, but the importance of intervening on the girl's behalf at some level would be clear and the caregiver should not dismiss the behavior. The point is that, as with the case of the Old Order Amish, knowledge of cultural variation would solicit very different behaviors among practitioners. In other words, detailed knowledge of a culture facilitates assessment and the development of sensitive interventions, which is very much in-line with calls for developing cultural competency. As a side note, we have confidence in these findings because there is cross-method consistency (i.e., triangulation) that supports their validity. In-depth qualitative findings, obtained from smaller groups, were consistent with the results of the various quantitative analyses described above, using a large sample.

Finally, these findings should not be of interest only to those with interests in mixed-methods and cross-cultural work; there are implications here for school psychologists. Psychologists are being pushed to develop cultural competencies and the methods described above support this endeavor. When working in a multicultural setting, the qualitative procedures can serve as models for service planning and identifying relevant cultural issues, and the development of a survey from this information can be used to quantify such information in the event a large

enough sample warrants the additional effort. These skills can help school psychologists understand the idiosyncratic needs of a local culture, develop nuanced assessment skills and in turn develop highly targeted interventions.

NOTE

1. More detailed findings can be obtained from the first author.

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