

# PERCEIVED COMPETENCE OF RURAL SOUTH-AFRICAN AND RURAL AFRICAN-AMERICAN FAMILIES: A CROSS-CULTURAL ASSESSMENT OF STRUCTURAL VALIDITY

The present study explores psychometric differences in baseline data from rural African-American (AA) and rural South-African (SA) adolescents to establish the cross-cultural validity of the Harter Perceived Competence Scale (PCSC). Two versions of the PCSC (one English and one Sepedi) were collected from 223 rural AA families and 157 rural SA families. A multinational research team was assembled to establish content validity of the translated versions of the PCSC. Principle components analysis and multiple group confirmatory factor analysis were used to investigate structural validity. The results have implications for inter-continental research and the theoretical construct of perceived competence. (*Ethn Dis.* 2005;15:379–386)

**Key Words:** Perceived Competence, Rural Families

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## INTRODUCTION

Perceived competency is increasingly becoming an important construct for mental health providers, educators, drug prevention programmers, and evaluators as youth service providers. It has been linked to academic success,<sup>1–5</sup> mental health well-being,<sup>6–8</sup> and drug prevention and risky behaviors.<sup>9–13</sup> The concept emanated from social learning theory<sup>14</sup> and is related to similar concepts of self-concept, self-esteem, and self-efficacy. As service providers rely more upon research-based evidence to make informed decisions in the United States as well as South Africa, the accurate measurement of perceived competency and related concepts underscores its importance.

In this study, the main aim was to investigate the latent structure of item responses derived from a standardized measure of perceived competency in a step toward comparing the structural validity of perceived competency as a psychological construct in samples of rural African-American (AA) and South-African (SA) youth. The potential significance of this research rests in part upon an increased interest in cross-cultural behavioral studies of adolescents in different countries and across continents, including the United States, in Africa generally, and in South Africa specifically.<sup>15</sup>

Among the most important issues in such research involves a set of measurement issues and assumptions. For example, psychological and behavioral scales used with United States populations often have been used to characterize similar SA age groups, but little consideration has been given to differential item response profiles such as might

arise when youth in different places have a different understanding or set of meanings about the concept being measured. Similarly, SA researchers have used scales or instruments validated with samples from the United States, but often with an assumption about the portability of these measurement tools.<sup>16–19</sup> To the extent that proximal and distal contextual and individual-level factors might influence our perceptions of self, competencies, and related concepts, clarifying the underlying latent structure of perceived competency item responses is important to do before making firm assumptions and drawing firm conclusions from comparative studies of perceived competency.

A second important research issue is pertinent to studies of self-concept specifically and to some open questions about the multi-dimensionality of self-concept. For example, the Perceived Competence Scale for Children<sup>20</sup> was developed on the assumption that children may not be equally competent in all areas. Focusing on competencies relevant to elementary school children, Harter elucidated three separate competencies: cognitive, social, and physical. She also decided to designate a general competency subscale. Cognitive competence was defined as school competence, social competence as peer-related, and physical competence as having skills for sports and outdoor games.

In the initial empiric study of perceived competency along these lines, teachers made ratings of individual student competency by using Harter's Perceived Competency Scale for Children.<sup>20</sup> The rating scale was modified to a four-point Likert scale ranging from 1 (not at all) to 4 (always). The scale was divided into two subscales: a seven-item

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*It [perceived competency] has been linked to academic success,<sup>1-5</sup> mental health well-being,<sup>6-8</sup> and drug prevention and risky behaviors.<sup>9-13</sup>*

cognitive subscale and a seven-item social subscale with Cronbach  $\alpha$  of 0.92 and 0.88, respectively.

Since its development by Harter, the PCSC has been used with several rural southern AA adolescent samples in Georgia and Louisiana. Results indicate that specific parenting practices and psychological functioning promote competency in rural AA children.<sup>21-27</sup> Primary single-parent caregivers who demonstrate vigilant parenting, hold developmentally appropriate parent-child discussions, and promote self-regulation are more likely to rate their children as psychosocially competent.<sup>28</sup> Similarly, primary caregivers' psychological functioning, such as self-esteem and optimism, also were associated with higher competency in their children.<sup>22</sup>

In another Georgia sample of single-parent rural AA 12-year-olds, mothers responded to the Harter Global Self-Worth Rating.<sup>20</sup> Ratings of competence for children had a Cronbach  $\alpha$  for self-worth of 0.74.<sup>21</sup> Findings from this study were consistent with the hypothesis that a parent's efficacy might protect children from proximal risk of harm, with concurrent improvements in the children's self worth and social competency.

In a Louisiana sample of rural AA families, 233 primary caregivers and teachers rated children using the Harter Competency Scale. The Cronbach  $\alpha$  for the cognitive and social subscales for primary caregiver responses were 0.82 and 0.68, respectively and 0.91 and 0.74 for teachers' responses, respectively.

Another important research issue involves characterization of the ethnicity of

the samples under study. For example, in one study of self-concept, SA investigators measured and studied the latent structure of self-concept by using principle component analysis with a sample of 233 male and 330 female SA students.<sup>29</sup> Two factors emerged from the analyses. The first factor was tapped by items pertinent to adolescents' interest and enjoyment in school, relationships with peers, and relationships with family. The second factor was tapped by items on students' perceptions of their physical abilities, physical appearance, emotional stability, and health. The  $\alpha$  coefficients of the two subscales were 0.77 and 0.75, respectively. The investigators indicated that adolescents participating in the study were from five secondary schools in the Eastern Cape and from three secondary schools in the Western Cape. Despite the continued emphasis on ethnic designations of the Blacks, Coloreds, Indians, and Afrikaans in South Africa, Marjoribanks and Mboya<sup>29</sup> do not identify the ethnicity of the students. Omission of ethnic identification makes comparing the results of this study with studies including only Black adolescents, such as the rural AA and SA samples, problematic. Also, no prior comparative study has been done of the latent structure of self-concept item responses based on parallel samples of adolescents, one recruited and assessed in South Africa and the other in the United States.

The most prominent prior contributions to research of this type emerged from social learning theory, with a focus on how individuals perceive, evaluate, and regulate their own behavior to achieve their goals<sup>30</sup> and with linkages of the perceived competency construct to health-related or socially maladaptive behaviors such as drug use, delinquent and aggressive behaviors, and related asocial or antisocial behaviors.<sup>22-27</sup> Findings to date provide some support for an inverse relationship between perceived competency and these socially maladaptive behaviors among adolescents, and longitudinal data link single-

parent, rural AA family processes and children's competence. This linkage appears to result in the protection of youth from dangerous surroundings and involvement in antisocial activities while promoting the development of self-regulation.<sup>22</sup>

Perceived competency might function in the same way or in different ways in a country such as South Africa. At present, no strong evidence guides cross-country comparisons in this regard, and substantively important differences might exist in adolescent concept formation in the domain of a psychological construct such as perceived competency. For instance, Kohlberg asserted the universality of an understandable sequence for moral development that follows the concrete-to-abstract schema of Piagetian theory.<sup>31-32</sup> Findings from empiric investigations supported this claim in the Bahamas, Kenya, Mexico, Nigeria, Taiwan, Turkey, and the Yucatan.<sup>33-38</sup> Nonetheless, in South Africa, whereas the pattern of moral development of White (Afrikaans- and English-speaking) adolescents closely resembled Kohlberg's developmental pattern, this same pattern was not observed for other groups. In specific, Black SA youth (Sotho-, Xhosa- and Zulu-speaking) showed a pattern that differed from the Western-influenced theory.<sup>39</sup>

By way of background to this empiric study, we should note that South Africa is transitioning from an oppressive Apartheid regime that did not always promote individual industriousness, academic achievement, and cognitive development, especially among rural Black SA youth.<sup>40-41</sup> Today's 12-year-old SA youth were born toward the official end of Apartheid. Although today's 12-year-olds were reared after the end of the most oppressive Apartheid society, large numbers of these youth have experienced remnants of oppression such as poverty, unemployment, lack of amenities, overcrowdings, or similar inadequacies. Moreover, rural Black SA youth are more likely to experience these in-

adequacies compared to urban youth.<sup>42</sup> These adverse experiences may dampen the developmental trajectories of rural Black SA youth to the extent that poverty may negatively affect academic and cognitive development.<sup>43-46</sup>

Many differences exist between the contextual factors surrounding rural AA and rural SA youth; nevertheless some similarities exist. For instance, today's 12-year-old rural AA adolescents are only two generations removed from the legalized segregated environments of their grandparents. Currently, rural communities are characterized by high poverty and unemployment rates, illiteracy, and conditions of severe, chronic environmental stress that take a toll on children.<sup>28</sup> These conditions largely result from past policies that may continue to influence adolescents' perceived competencies.

Self-concept is an often used and measured competency construct. In the United States, the Perceived Competence Scale for Children,<sup>20</sup> the Coopersmith Self-Esteem Inventory,<sup>47</sup> the Piers-Harris Self Concept Scale,<sup>48-49</sup> and the Child Behavior Checklist<sup>50</sup> are examples of scales that traditionally have been used to measure an adolescent's self-concept and competencies.

In this study, we sought to assess the latent structure of perceived self-competency in a manner that would illuminate possible differences in the item responses of Black youth recruited and assessed in rural South Africa versus Black youth recruited and assessed in the rural South of the United States. The study aims are: 1) to examine the psychometric properties of a Sepedi (Northern Soto)-translated Perceived Competency Scale with a sample of rural Black SA 12-year-olds; and 2) to compare the mean scores with a comparable sample of rural AA 12-year-olds.

## MATERIALS AND METHODS

The study samples comprise 223 African-American youth and 157 South

**Table 1. Demographics**

	African American	South African
Number of participants	223	157
Age	38 years	37 years
<i>Primary caregiver relationship</i>		
Mom	79.1%	68.1%
Dad	6.1%	2.7%
Other	14%	29.2%
<i>Primary caregiver's education</i>		
Elementary to 8th grade	4%	26.1%
Did not graduate from H.S.	21%	51.6%
Graduated from high school	27%	1.9%
Some college or trade school	25%	5.7%
Trade school or associate	16.0%	
B.S. degree	7.0%	
Graduate training	2.0%	—
Master's degree	6.0%	3.8%
Doctorate or professional	1.0%	1.8%
<i>Employed</i>	81%	28.1%
<i>Youths' demographics</i>		
Male	47%	38%
Female	53%	62%
Age	11.8	13.4

African youth, as well as the primary caregivers for these youth, who were assessed by standardized methods in calendar year (CY) 2002 and CY2003 (Table 1). Moms represented a larger percentage of primary caregivers from the United States (79.1%) compared to moms in SA (68.1%). Primary caregivers are more likely to be "other" in the SA sample (29.2%) compared to the US sample (14.0%). The distribution of social status differed considerably across the two samples. For example, 81% of the American youth had primary caregivers who were working for pay; the corresponding value for the SA youth was 28%. In addition, 26% of the American youth had primary caregivers who had not graduated from high school. The corresponding value for the SA youth was 78%. Also, the youth in the SA sample were somewhat older (13.4 years) and more likely to be male (62%) than the youth in the US sample (11.8 years and 53%, respectively).

The study sample originated with a prevention program designed by the authors of this report, with assistance of

Gene Brody at the University of Georgia at Athens. In brief, the SA study population was designated to include a target goal of 200 12-year-old first-born learners enrolled at 12 primary schools of a single school system during the 2003 summer semester. All of these 12-year-olds were residents of a rural area within the catchment area of this school system, which is located in the Limpopo Province of South Africa. Similarly, the rural AA study population target goal was 200 12-year-old firstborns enrolled in schools in three Louisiana parishes in 2002.

The sampling approach for the South African participants involved a random selection of 200 families with 12-year-old firstborns from 12 primary schools in the Greater Mankweng District in the rural Limpopo Province. Schools were selected based on their proximity to the University of the North and their rural location. The resulting sample consists of 157 firstborn 12-year-olds. Interviewers from the University of the North were trained in English by trainers from the United States.

Sepedi or Northern Soto was the mother tongue for most of the interviewers; all were knowledgeable about the language. All baseline data were collected at local schools. The number of families selected at each school was proportionate to the numbers available. The purpose for the data collection was explained to the primary caregivers and targets in Sepedi and all instruments were translated into Sepedi. After the introduction, the assigned interviewers escorted the primary caregiver and target to separate classrooms or to opposite ends of the same classrooms depending upon space availability. Participants responded to the same instruments as the rural AA families. Families received 50 Rands for their participation (roughly \$6 US dollars).

The sampling approach for the rural AA participants involved a random selection of 400 families with a 12-year-old firstborn residing in six rural parishes in Louisiana and enrolled in school. The resulting sample consists of 223 AA primary caregivers and their 12-year-old patient. Sample size was reduced because of incomplete survey responses and families failing to participate in a prevention program. The prevention program was composed of six concurrent sessions with five to six primary caregivers in separate sessions from their 12-year-olds. Three sessions included family sessions with primary caregivers and the 12-year-olds. Sessions focused on topics such as setting goals, communication, establishing rules and consequences, substance use, and peer influences. Assignments and home family sessions were encouraged. Only baseline data collected prior to the training sessions are included in this study. The study protocols for the United States and South Africa were reviewed and approved by the cognizant institutional review boards.

Rural AA families were identified by school principals or local community liaisons who were knowledgeable about area families. The names of families

with 12-year-old firstborns were submitted to the project office and randomly selected for participation. Interviews were scheduled for the primary caregiver and the targeted youth in the home. Two interviewers collected the data on laptop computers with the primary caregiver and youth in either separate rooms or at opposite ends of the room to protect confidentiality of responses.

The primary response variable in this study is the construct of perceived competency, described below. Perceived competency is a subjective construct based upon the perceptions of the respondents; no gold standard objective criterion for self-competency exists. Parents, teachers, and the targeted youth served as respondents providing information about perceived competency. As adapted for this study, the Perceived Competence Scale for Children<sup>20</sup> consists of 13 items rated on a 4-point scale. The response values for items of the scale ranged from 1–4 with one representing not at all, two representing a little bit, three representing quite a bit, and four representing always. Harter's competence scale used two subscales to measure competence, social and cognitive. Examples of the items in the parent rating form for the Harter scale are: 1) my child is very good at his/her school work; 2) my child finds it hard to make friends; 3) my child is just as smart as other kids his/her age; 4) my child has a lot of friends; 5) my child is pretty slow at finishing his/her school work. In both the US sample and the SA sample, the assessment was completed by the primary caregiver about the targeted youth.

The statistical analysis plan for this study included estimation of internal consistency measures of scale reliability, as gauged by the Cronbach  $\alpha$ . Thereafter, the principle components approach to latent structure analysis was used to examine the latent structure of the Harter scale item responses. Implementing software was SPSS, Version 10.0 (SPSS Inc., Chicago, Ill., USA) and Amos, Version 4.0.

With respect to the issue of sample size, Hatcher's "rule of 100" suggests that this study should have ample statistical precision. With respect to the number of subjects relative to the number of items, the study qualifies for Hatcher's rule, which suggests that the number of subjects should be the larger of five times the number of items, or should equal 100, whichever is larger.<sup>51</sup>

## RESULTS

Using scoring algorithms provided by Harter,<sup>20</sup> scale scores were calculated for each group. Estimates of internal consistency reliability were stronger for the American sample as compared to the SA sample. With respect to the total Harter summary score, the estimated Cronbach  $\alpha$  for the US sample was 0.79 as compared to 0.52 for the SA sample. With respect to the cognitive competence Harter subscale, the  $\alpha$  estimates for the two samples were 0.81 for the United States and 0.30 for South Africa. With respect to the social competence subscale, the  $\alpha$  estimates were 0.57 for the United States and 0.46 for South Africa.

As shown in Table 2, estimates from one-way analysis of variance (ANOVA) are consistent with differences on all scale scores under study. For example, for the Harter cognitive competence subscale,<sup>20</sup> the estimated mean for the US sample of 12-year-olds was 22.2 vs 20.4 for the SA sample of 12-year-olds, indicating a small but statistically significant difference with higher values seen for the American youth ( $P < .001$ ). Scores also were higher in the US-SA contrast for the social competency subscale and for the total scale score (Table 2).

Two independent principle components analyses were completed with varimax rotation; these results are based on responses to the 13 PCSC items, as rated by the AA and SA parents. Both the Karsner-Guttman rule and the Cattell's



**Table 2. Estimated means, standard deviations, and ANOVA F-tests in a contrast of Harter total scale score and subscale scores for the rural US and rural South African samples of adolescents. Data from surveys of 12 year olds in the US (n = 223) and in South Africa (n = 157), CY2002–2003.**

	Mean		Std. Deviation		F	Sig.
	South African	African American	South African	African American		
Cognitive Competence	20.4	22.2	3.4	3.84	21.9	<0.001
Social Competence	14.2	15.2	2.4	2.25	20.2	<0.001
Total Score	37.7	42.8	4.8	5.38	88.3	<0.001

scree test were consistent with a three-factor solution, not only in the AA sample but also the SA sample. In total, these three factors accounted for 55% and 53% of the observed variance, respectively.

For each group, the final rotated solution was found to be parsimonious, had good simple structure, and could be meaningfully interpreted (Table 3). The factor loadings were similar to the two-factor solution found by Harter,<sup>20</sup> except all reverse-coded items clustered together on a third factor. The factor solution was almost identical between African Americans and South Africans, with the exception of two differences: 1) Item 2 loaded on Factor 3 for African

Americans but did not load on any factors for South Africans; and 2) Item 7 loaded on Factor 1 for African Americans, but on Factor 2 for South Africans.

The final solution was consistent with a latent structure and three underlying dimensions. Factor 1 was labeled “Perceived Cognitive Competency”; Factor 2 was labeled “Perceived Social Competency”; and Factor 3 was labeled “Perceived Lack of Competency.” Table 3 provides a summary of the estimated factor loadings for each group.

### Confirmatory Factor Analysis

Multiple group confirmatory factor analyses have been used to evaluate the

original scale constructs<sup>20</sup> as indicated by the measurement model in Figure 1. The estimates of parameters in the model were adjusted for missing data, using full-information maximum likelihood.<sup>52,53</sup> Authors assessed model fitness with chi-square statistics ( $\chi^2$ ), root mean square error of approximation (RMSEA),<sup>54</sup> comparative fit index (CFI),<sup>55</sup> and Bentler-Bonett normed fit index (NFI).<sup>56</sup> Because exploratory factor analyses (EFA) results showed similar loading patterns for the reverse-coded items, covariances between error terms on all reverse-coded items were specified in the model before testing (see Table 3).

Based upon results from AMOS 4.0 computational software,<sup>56</sup> AA and SA data did not yield an interpretable model when first analyzed with unconstrained parameters and correlations (ie, a two-factor model composed of Cognitive and Social Competence subscales). Thereafter, we constrained the model to force equal factor loadings for all items. The results for the constrained model were as follows:  $\chi^2$  (64)=113.03, RMSEA=.04, NFI=.99, and CFI=.99. All fitness indices were consistent with good model fit.

In the second step, we tested model invariance between the two samples. Testing for invariance entailed comparing the model in which parameters were constrained to be equal across groups and then comparing this model with a noninvariant model in which these parameters are free to take any value. No significant  $\chi^2$  values were used to indicate invariance. The results of the model comparison ( $\chi^2=9.88$  with 1 degree of freedom,  $P=.002$ ) suggested that imposing additional constraints on the factor loadings across the two locations statistically changed the overall model fit. In other words, AA and SA samples yielded statistically different in factor loading patterns on the physical component summary.

Standardized regression estimates were used to estimate the relationship between each item and the correspond-

**Table 3. Estimated factor loadings for Harter items assessed in the rural US and rural South African samples of adolescents. Data from surveys of 12 year olds in the US (n = 223) and in South Africa (n = 157), CY2002–2003**

Item	African American			South African		
	1	2	3	1	2	3
1. Is very good at his/her school work	.76			.78		
2. Finds it hard to make friends.			.73*			
3. Is just as smart as other kids his/her age	.64			.48		
4. Has a lot of friends		.70			.54	
5. Is pretty slow at finishing school work.			.53			.71
6. Can remember things easily.	.63			.65		
7. Usually does things by his/her self.	.60*				.49*	
8. Does well in class.	.80			.76		
9. Is liked by very many others.		.70			.72	
10. Has difficulty understanding what his/her reads.			.77			.79
11. Is popular with others his/her age.		.70			.72	
12. Has trouble figuring out the answers in school.			.65			.53
13. Is really easy to like.		.63			.51	

\* Factor loadings smaller than 0.40 have been omitted from this table.

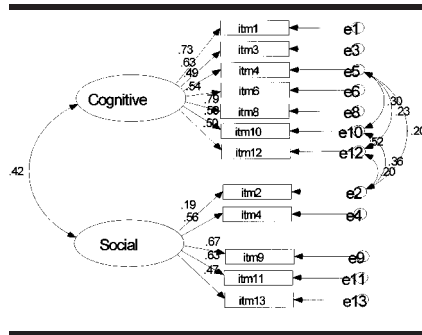


Fig 1. Standardized estimates of African-American samples

ing factors. That is, for this analysis, the arrows in Figure 1 and Figure 2 represent the relationship between the observed indicator variables and the latent dimensions (factors). Double-headed arrows indicate the relationship between latent dimensions and the error between indicator variable with negative values. Results of this analysis yielded similar loading patterns between samples on the Cognitive; however the Social factor appeared to be unspecified for the SA sample. Based on scoring algorithms provided by Harter,<sup>20</sup> Item 7 is not associated with either factor.

## DISCUSSION

As noted in the introduction, this study is the first to investigate the cross-cultural validity of perceived competency by using rural AA and rural SA populations. The study protocols were roughly the same in both the United States and South Africa, and this feature of the research design lends credence to the resulting evidence. The Perceived Competence Scale for Children was administered to rural AA and rural SA primary caregivers in an effort to assess whether perceived competence was processed similarly across two cultures. Mental health providers, researchers, educators, and drug prevention programmers and evaluators often use scales across continents and cultures without consideration of portability of these in-

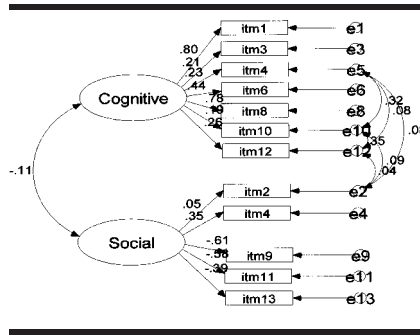


Fig 2. Standardized estimates of South African samples

struments. The present study was designed to help fill this void.

Reliability analysis using Cronbach  $\alpha$  indicated that the PCSC has stronger internal consistency for AA adolescents compared to SA youth. The estimated Cronbach  $\alpha$  coefficients for the Harter total score and for the Harter subscale scores were larger for the rural AA sample compared to the rural SA sample. Analysis of variance results were consistent with between-sample differences, with subscore and total score means observed to be modestly larger in the results for the US sample of youth as compared to results for the SA sample of youth.

Latent structure analyses disclosed a three-factor solution somewhat different from the two-factor solution implied in Harter's original results. Whereas Harter found one dimension tapped by items about cognitive competency and a second dimension tapped by items on social competency, in this analysis we found evidence in support of a third dimension. We might interpret this third dimension as a subscale pertinent to competence inadequacies; however, we cannot rule out the possibility that this third factor is due to methods-related scaling effects in that all of the items loading on the third dimension are plaintive in nature. That is, all of them represent a negative evaluation of the youth's competencies. This type of methods-related dimension has appeared in prior latent structure analyses of psychometric test items.<sup>57</sup>

*Reliability analysis using Cronbach  $\alpha$  indicated that the Perceived Competency Scale for Children has stronger internal consistency for AA adolescents compared to SA youth.*

The higher Cronbach  $\alpha$ s on both subscales and the total score of the PCSC were for rural AA youth compared to the rural SA youth.

Several of the more important study limitations merit attention. The Harter scale has been used in some prior studies with rural AA youth. However, we are not aware of its prior use in Sepedi-language samples, and the observed differences (eg, in terms of reliability) may be a function of mistakes in the translation, back-translation, and harmonization process that guided conversion from an English-language instrument to a Sepedi-language instrument. The factor loading estimates reported in Table 2 indicate a potential problem with the Harter item about the youth's "being smart." That is, as shown in Table 2, the estimated lambda (discrimination) parameter has a much larger value in the US sample as compared to the value estimated for the SA sample. As such, for each unit increase on the underlying dimension of cognitive competence, the primary caregiver of an American youth is more likely to assert that the youth is smart, and the primary caregiver of a Sepedi-language youth is less likely to assert that the youth is smart. It will be necessary to probe into this issue of "smartness" if we are to calibrate measures of cognitive competency in the United States with measures of cognitive competency in South Africa. An analogous inspection of results from the items that tap the social competency dimen-

sion draws our attention to the Harter question about the number of friends. One possibility is that having a lot of friends is not a particularly discriminating indicator of social competency among Sepedi-language families (i.e. not as discriminating as being liked by others, whether they are friends or not).

With respect to the sampling approach, a possible limitation is some differentiation in the roles of primary caregivers in the two samples for this comparative study. For both samples, primary caregivers were selected based upon the child's being a first born. However, primary caregivers, in some instances, were grandparents or other relatives in both samples. Primary caregivers were more likely to be mothers in the rural AA sample, compared to the percentage of mothers in the SA sample. Similarly, rural AA fathers were more likely to serve as primary caregivers (6.1%) compared to SA fathers (2.7%).

Another limitation relates to the study sample obtained in each place. Sample sizes were roughly equivalent, but broad educational and other social status differentials were observed. The rural AA primary caregivers received higher levels of education compared to the rural SA sample. Financial resources are difficult to interpret for the SA sample because of differences in kinds of benefits received from the government in the two samples. Similarly, compensation for work performed occurs differently. However, it would seem important to make social status differences a more prominent potential source of response validity in future research.

With respect to assessment of the key response variable, we already have noted the possibility that some indicators do not translate well or might not have had the same meaning in both samples. Another aspect of assessment merits attention in the planning of future US-SA comparative research. Namely, despite the fact that the PCSC was translated and explained in Sepedi, the SA sample may not have been as

familiar with the rating scale of 1–4 (not at all to always) as was the AA sample, which had had more education, on average, and presumably more contact with standardized tests and responses to PSCS-like scale items. Also, it is possible that the SA primary caregivers do not give as much attention to some characteristics, such as being smart or having a lot of friends. Lastly, because of the number of grandmothers serving as primary caregivers for the SA sample, they may not have been as knowledgeable about the child's school or social behaviors.

Notwithstanding limitations such as these, the results from this study may be a warning when we and other investigators contemplate comparative research with US and overseas samples. As noted by others,<sup>31,32</sup> the most parsimonious assumption of measurement equivalence may not hold in this comparative research, and including methodologic calibration of construct measurements would be useful before strong inferences are warranted with respect to between-country differences.

In future research that builds on this study, it may be possible to draw upon the experience in this study may strengthen future work. Researchers generally are mindful that differences can exist when they import a survey method from one place and apply it to another place. In this instance, it may prove useful to apply measurement fidelity and calibration techniques used to reduce the influence of gender-biased and race-biased items in standardized tests, part and parcel with the investigation of suspected substantive differences across samples. In the present context, now that we have identified some measurement differences, our next step is to attempt a calibration of the measurements in order to achieve a more complete perspective on the adolescent experiences of youth growing up and going to school in rural South Africa as compared to youth growing up and going to school in the rural South of the

United States. This calibration will be done so that researchers can be cognizant of these potential differences before making assumptions or drawing conclusions from findings based on culturally different samples.

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#### REFERENCES

1. Cole DA. Reflected self-appraisals: strength and structure of the relation of teacher, peer, and parent ratings to children's self-perceived competencies. *J Educ Psychol.* 1997;89(1):55–70.
2. Woods RW, Lindsey JD. Perceived and actual mathematical competencies of children with visual impairments and learning disabilities. *Psychol Rep.* 1999;74(1):238.
3. Miserandino M, Beaver C. Children who do well in school: individual differences in perceived competence and autonomy in above-average children. *J Educ Psychol.* 1996;88(2):203–214.
4. Alva SA. Psychosocial stress, internalized symptoms, and the academic achievement of Hispanic adolescents. *J Adolesc Res.* 1999;14(3):343–358.
5. Tucker CM, Zayco RA, Herman KC, et al. Teacher and child variables as predictors of academic engagement among low-income African-American children. *Psychol Schools.* 2002;39(4):477–488.
6. Wilf-Miron R, Silron F, Glasser S, Barell V. Community-based adolescent health services in Israel: from theory to practice. *Int J Adolesc Med Health.* 2002;14(2):139–144.
7. King C, Akiyama MM. Self-perceived competencies and depression among middle school students in Japan and the United States. *J Early Adolesc.* 1996;16(2):192.
8. Fantuzzo JW, DePaula LM. Effects of interparental violence on the psychological adjustment and competencies of young children. *J Consult Clin Psychol.* 1991;59(2):258.
9. Gable RJ. *Social Competence, Coping Skills, and Youth Crime: A Pragmatic and Theory-Based Approach.* New York, NY: Pergamon Press; 1986:160–167.
10. Ruch-Ross HS. The Child and Family Options program: primary drug and alcohol prevention for young children. *J Community Psychol.* 1992;39–54.



11. Dolcini MM. Perceived competencies, peer group affiliation, and risk behavior among early adolescents. *Health Psychol.* 1994;13(6): 496–506.
12. Lifrak PD, McKay JR. Relationship of perceived competencies, perceived social support, and gender to substance use in young adolescents. *J Am Acad Child Adolesc Psychiatry.* 1997;36(7):933.
13. Kuther TL. Moral reasoning, perceived competence, and adolescent engagement in risky activity. *J Adolesc.* 2000;23(5):599.
14. Bandura A. Self-efficacy toward a unifying theory of behavioral change. *Psychol Rev.* 1977;191–215.
15. Barbarin OA. Social risks and psychological adjustment: a comparison of African-American and South African children. *Child Dev.* 1999;70:1348–1359.
16. Grobler AC, Grobler AA, Esterhuysen KGF. Some predictors of mathematics achievement among Black secondary school learners. *S Afr J Psychol.* 2001;31(4):176–185.
17. Barbarin OA, Richter L. Adversity and psychosocial competence of South African children. *Am J Orthopsychiatry.* 1999;69(3):319–327.
18. Stevens G, Lockhart R. “Coca-Cola Kids”—reflections on Black adolescents identity development in post-apartheid South Africa. *S Afr J Psychol.* 1997;27(4):171–187.
19. Myburgh CPH, Niehaus L, Poggenpoel M. Showing the work ethics of South African Black adolescents is determined by parent involvement, their time concept and efficacy. *Education.* 2002;122(3):531, 576.
20. Harter S. The perceived competence scale for children. *Child Dev.* 1982;53:87–97.
21. Murry VM, Brody GH. Self-regulation and self-worth of Black children reared in economically stressed, rural, single-mother-headed families: the contribution of risk and protective factors. *J Fam Issues.* 1999;20:458–484.
22. Brody GH, Murry VM, Kim S, Brown A. Longitudinal pathways to competence and psychological adjustment among African-American children living in rural single-parent households. *Child Dev.* 2002;73:1505–1516.
23. Brody GH, Flor DL. Maternal psychological functioning, family processes, and child adjustment in rural, single parent, African-American families. *Dev Psychol.* 1997;33: 1001–1011.
24. Brody GH, Flor DL. Maternal resources parenting practices, and child competence in rural, single-parent African-American families. *Child Dev.* 1998;69:803–816.
25. Brody GH, Flor DL, Newbaum E. Co-parenting processes and child competence among rural African-American families. In: Lewis M, Feiring C, eds. *Families, Risk, and Competence.* Mahwah, NJ: Erlbaum; 1998:227–243.
26. Brody GH, Ge X. Linking parenting processes and self-regulation to psychological functioning and alcohol use during early adolescence. *J Fam Psychol.* 2001;15:82–94.
27. Brody GH, Stoneman Z, Flor D, McCrary C, Hastings L, Conyers O. Financial resources, parent psychological functioning, parent co-caregiving, and early adolescent competence in rural two-parent African-American families. *Child Dev.* 1994;65:590–605.
28. Brody GH, Flor DL, Gibson NM. Linking maternal efficacy beliefs, developmental goals, parenting practices, and child competence in rural, single-parent, African-American families. *Child Dev.* 1999;70:1197–1208.
29. Marjoribanks K, Mboya M. Family capital, goal orientations and South African adolescents’ self-concept: a moderation-mediation model. *Educ Psychol.* 2001;21:333–351.
30. Bandura A. Self-efficacy: toward a unifying theory of behavioral change. *Psychol Rev.* 1977;84(2):191–215.
31. Kohlberg L. *Stages in the Development of Moral Thought and Action.* New York, NY: Holt, Rinehart, and Winston; 1969.
32. Kohlberg L. From is to ought. In: Mischel T, ed. *Cognitive Development and Epistemology.* New York, NY: Academic Press; 1971:151–235.
33. Edwards P. Social experience and moral development: a Kenyan study. *Ethics.* 1975;3: 505–527.
34. Edwards P. Social experience and moral judgment in Kenyan young adults. *J Genet Psychol.* 1978;133:19–20.
35. Maqsood M. Locus of control and stages of moral reasoning. *Psychol Rep.* 1980;46:1243–1248.
36. Rest JR. *Development in Judging Moral Issues.* Minneapolis, Minn: University of Minnesota Press; 1979.
37. White C. Moral development in Bahamian school children: a cross-cultural examination of Kohlberg’s stage of moral reasoning. *Dev Psychol.* 1975;14:58–65.
38. Wilson FL. The effects of age, gender, and ethnic/cultural background on moral reasoning. *J Soc Behav Pers.* 1995;10(5):67–78.
39. Ferns I, Thom DP. Moral development of Black and White South African adolescents: evidence against cultural universality in Kohlberg’s theory. *S Afr J Psychol.* 2001;31(4):38–47.
40. Graham SB. Career development of Black South African adolescents: a developmental-contextual perspective. *J Couns Dev.* 1996; 74(3):270–276.
41. Marjoribanks K. Family contexts, immediate settings, and adolescents’ aspirations. *J Appl Dev Psychol.* 1997;18:119–132.
42. Pillay AL, Naidoo P, Lockhart MR. Psychopathology in urban and rural/peri-urban children seeking mental health care. *S Afr J Psychol.* 1999;29(4):178–183.
43. Mackner LM, Black MM, Starr RH Jr. Cognitive development of children in poverty with failure to thrive: a prospective study through age 6. *J Child Psychol Psychiatry.* 2003;44:743–751.
44. Peterson SM, Albers AB. Effects of poverty and maternal depression on early child development. *Child Dev.* 2001;72(6):1794–1813.
45. Yeung WJ, Linver MR, Brooks-Gunn J. How money matters for young children’s development: parental investment and family process. *Child Dev.* 2002;73(6):1861–1879.
46. Brooks-Gunn J, Duncan GJ. The effects of poverty on children. *Future Child.* 1997;7: 55–71.
47. Coopesmith S. *The Antecedents of Self-Esteem.* San Francisco, Calif: W. H. Freeman; 1967.
48. Piers EV, Harris D. *Manual for the Piers-Harris Children’s Self-Concept Scale.* Nashville, Tenn: Counselor Recording and Tests; 1969.
49. Piers EV, Harris DB. Age and other correlates of self-concept in children. *J Educ Psychol.* 1964;55:91–95.
50. Achenbach TM, Edelbrock C. *Manual for the Behavior Checklist and Revised Child Behavior Profile.* Burlington, Vt: University of Vermont; 1983.
51. Hatcher L. *A Step-by-Step Approach to Using the SAS System for Factor Analysis and Structural Equation Modeling.* Cary, NC: SAS Institute; 1994.
52. Arbuckle JL, Wothke W. *AMOS 4.0 Programming Reference Guide.* Chicago, Ill: Small Waters; 1999.
53. Graham JW, Hofer SM, Piccinin AM. Analysis with missing data in drug prevention research. In: Collins LM, Seitz LA, eds. *Advances in Data Analysis for Prevention Intervention Research.* Washington, DC: US Govt. Printing Office; 1994. NIH Publication No. 94–3599.
54. Browne MW, Cudeck R. Alternative ways of assessing model fit. In: Bollen KA, Long JS, eds. *Testing Structural Equation Models.* Newbury Park, Calif: Sage; 1993:136–162.
55. Bentler PM. Comparative fit indexes in structural models. *Psychol Bull.* 1990;107:238–246.
56. Bentler PM, Bonett DG. Significance tests and goodness of fit in the analysis of covariance structures. *Psychol Bull.* 1980;88:588–606.
57. Muthén B. Latent variable structural equation modeling with categorical data. *J Econometrics.* 1983;22:43–65.

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