

# Validation of A Brief Sense of Community Scale: Confirmation of the Principal Theory of Sense of Community

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*First-order and second-order models of sense of community (SOC) were tested using confirmatory factor analysis (CFA) of data gathered from a random sample of community residents (n = 293) located in the midwestern United States. An 8-item Brief Sense of Community Scale (BSCS) was developed to represent the SOC dimensions of needs fulfillment, group membership, influence, and shared emotional connection. The CFA results for the BSCS supported both the scale's hypothesized first-order and second-order factor structure. The overall BSCS scale and its subscales were also found to be correlated as expected with community participation, psychological empowerment, mental health, and depression. Findings provide empirical support for the BSCS and its underlying multidimensional theory of SOC. Implications of the study are described and directions for future research discussed. © 2007 Wiley Periodicals, Inc.*

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Sense of community (SOC) is a key theoretical construct for community psychology and other disciplines. Sense of community refers to the fundamental human phenomenon of collective experience, and it has been studied in a variety of contexts such as neighborhoods (Brodsky & Marx, 2001; Colombo, Mosso, & DePiccoli, 2001; Kingston, Mitchell, Florin, & Stevenson, 1999; Perkins, Florin, Rich, Wandersman, & Chavis, 1990), psychosocial rehabilitation programs (Herman, Onaga, Pernice-Duca, Oh, & Ferguson, 2005), community organizations (Hughey, Speer, & Peterson, 1999), workplaces (Pretty & McCarthy, 1991), and faith institutions (Miers & Fisher, 2002), as well as with youth (Bateman, 2002; Pretty, Andrewes, & Collett, 1994; Vieno, Perkins, Smith, & Santinello, 2005), immigrant communities (Sonn, 2002), firefighters (Cowman, Ferrari, & Liao-Troth, 2004), and an international community of interest (Obst, Zinkiewicz, & Smith, 2002). This breadth of application highlights the importance of the construct to a diverse array of settings and populations in community-based research and practice.

Sense of community, often referred to as *psychological sense of community*, has been predominantly associated with the McMillan and Chavis (1986) model, although other conceptual frameworks and several measures have also been proposed (Bishop, Chertok, & Jason, 1997; Buckner, 1988; Cantillon, Davidson, & Schweitzer, 2003; Davidson & Cotter, 1986, 1993; Glynn, 1981; Hughey et al., 1999; Long & Perkins, 2003). Alternative conceptions and measures notwithstanding, the Sense of Community Index (SCI; Perkins et al., 1990; see Long & Perkins, 2003, for a more detailed discussion of the development of the SCI), or some adaptation of it, has been utilized by much of the empirical work that has measured SOC (e.g., Brodsky, O'Campo, & Aronson, 1999; Kingston, et al., 1999; Mahan, Garrard, Lewis, & Newbrough, 2002; Peterson & Hughey, 2004; Peterson & Reid, 2003; Pretty, McCarthy, & Catano, 1992; Pretty, Conroy, Dugay, Fowler, & Williams, 1996; Speer, 2000; Speer, Jackson, & Peterson, 2001). The SCI was intended to be a brief assessment of the four dimensions of SOC as articulated in McMillan and Chavis' (1986) model. These dimensions include needs fulfillment (a perception that members' needs will be met by the community), group membership (a feeling of belonging or a sense of interpersonal relatedness), influence (a sense that one matters, or can make a difference, in a community and that the community matters to its members), and emotional connection (a feeling of attachment or bonding rooted in members' shared history, place or experience).

Although popular, a series of recent studies has raised compelling questions about the validity of the SCI, as well as other existing measures of SOC, and the McMillan and Chavis (1986) model itself (Chipuer & Pretty, 1999; Long & Perkins, 2003; Obst & White, 2004; Proescholdbell, Roosa, & Nemeroff, 2006; Tartaglia, 2006). Chipuer and Pretty (1999) tested the factor structure of the SCI by conducting principal components factor analysis of data from adults and youth using both neighborhoods and workplaces as referents. Chipuer and Pretty reported that SCI items tended to load on different or multiple subscales in different samples, indicating that items generally did not converge as expected based on the McMillan and Chavis (1986) model. In addition, Chipuer and Pretty (1999) reported weak reliabilities for the overall SCI scale as well as for the hypothesized subscales. Rather than revising the SCI or suggesting changes to the McMillan and Chavis (1986) model, Chipuer and Pretty (1999) recommended using the SCI as a one-factor instrument until better items could be developed and validated.

Long and Perkins (2003) described similar problems with the items of the SCI. As a methodological improvement, they applied confirmatory factor analysis (CFA) to test both the 1-factor and hypothesized 4-factor models for the SCI using data from the original Perkins et al. (1990) study. Their goodness of fit indices suggested poor fit for both the 1-factor and 4-factor solutions. Rather than developing and testing new items, Long and Perkins (2003) returned to the original dataset to conduct exploratory factor analysis (EFA) and CFA of SCI items, along with additional items that were not formerly part of the SCI, to find a better fitting model for the Perkins et al. (1990) data. Because of their analyses, Long and Perkins (2003) recommended abandonment of the original SCI in favor of the Brief Sense of Community Index (BSCI)—an 8-item scale combining five original SCI items with three other face-valid items. These eight items were configured to correspond to a new dimensional structure for SOC, which included social connections, mutual concerns, and community values. As noted by Obst and White (2004), however, little theoretical justification was provided by Long and Perkins (2003) for their new dimensional structure.

Obst and White's (2004) study also used CFA to test the SCI. Consistent with Long and Perkins (2003), they found that the hypothesized factor structure of the SCI did not adequately fit their data. Unlike Long and Perkins (2003), however, Obst and White (2004) suggested retaining many of the SCI items with the 4-factor structure of McMillan and Chavis (1986). To preserve the 4-factor model, Obst and White (2004) shifted SCI items to different subscales based on CFA indicators. At issue with their study is whether Obst and White too failed to provide sufficient conceptual justification for their reassignment of SCI items. Methodologists have cautioned that CFA indicators should be used only if the modifications can also be interpreted substantively (Arbuckle & Wothke, 1999; MacCallum, Roznowski, & Necowitz, 1992). Accordingly, it would seem reasonable to expect the content of Obst and White's (2004) reassigned items to fit conceptually with the intended meaning of the underlying dimension. Yet, their shift of many SCI items could not be justified on conceptual grounds. This incongruity between the meaning of Obst and White's reassigned items and the meaning of McMillan and Chavis' (1986) dimensions of SOC calls into question the usefulness of this approach to improve the SCI and fails to provide empirical support for the underlying multidimensional theory of SOC.

Elsewhere, Proescholdbell et al. (2006) conducted a study to develop and test a new multidimensional measure of SOC. They argued that although most researchers consider SOC as a multidimensional construct, most existing measures of SOC, such as the SCI, have been validated only as unidimensional instruments. In a study of SOC among gay men, Proescholdbell et al. (2006) examined new and existing items from several SOC measures, including the SCI, to develop a scale that was intended to assess each of the four dimensions of the McMillan and Chavis (1986) model. Using both EFA and CFA, Proescholdbell et al. (2006) found that a 3-factor model for SOC best fit their data. The model included one factor for the influence dimension, another for emotional connection, and a third factor that combined the two dimensions of needs fulfillment and membership. They concluded that because no quantitative study to date has empirically distinguished the needs fulfillment and membership dimensions, the McMillan and Chavis (1986) model should be revised to collapse these dimensions into one component of SOC. In addition, Proescholdbell et al. (2006) examined whether their three-component measures could be combined to create a single overall measure of SOC. Rather than using CFA procedures to test a second-order model for the scale, however, they pointed to simple correlations between the factors (ranging

from .38 to .61) as evidence supporting the strategy of combining component subscales into a single overall measure of SOC.

Tartaglia (2006) also conducted a study to test the multifactor structure of an existing measure of SOC. Similar to Chipuer and Pretty (1999), Long and Perkins (2003), and Obst and White (2004), Tartaglia (2006) asserted that a good approach to advance SOC research is to examine the multidimensional structure of scales that have already been shown to be useful as unidimensional measures of SOC. Applying both EFA and CFA to examine the structure of the 18-item Italian Sense of Community Scale (ISCS), Tartaglia (2006) found support for a 3-factor model, which included one factor that combined McMillan and Chavis' (1986) concepts of needs fulfillment and influence, another factor that involved the concept of place attachment, and a third factor that was labeled *social bonds*. However, Tartaglia did not provide evidence such as a second-order CFA to demonstrate that the three ISCS factors could be considered as representing one underlying SOC construct.

### ***Present Study***

At present, it would seem that SOC research has arrived at a critical juncture. As noted by Vieno et al. (2005), no study to date has empirically confirmed the 4-factor model of SOC as conceptualized by McMillan and Chavis (1986). In addition, as argued by Long and Perkins (2003), research and evaluation studies of SOC are in need of brief, validated measures of the construct that may be conveniently and efficiently administered in applied community contexts. An important direction for future research, therefore, is to develop and test original items for inclusion in a new, brief measure of SOC based on the McMillan and Chavis model. This approach might result in items that better represent the meaning of McMillan and Chavis' dimensions as well as demonstrate expected empirical relationships.

In the current study, we tested a brief measure for SOC that included completely new items that were designed to be consistent with the McMillan and Chavis (1986) model. Both the first and second-order factor structure of the SOC measure was evaluated using CFA. We then further examined the validity of the BSCS by examining its relationship to a set of variables (i.e., community participation, empowerment, mental health, and depression) that might be differentially associated with the dimensions of SOC. We expected, based on previous research, that SOC would be positively related with participation in community groups and activities (Speer, 2000; Speer & Peterson, 2000; Peterson & Reid, 2003), empowerment (Itzhaky & York, 2000), and mental health (Taylor & Taylor, 1996; Bailey & McLaren, 2005), and that SOC would be negatively related with depression (Parker et al., 2001). Because of the influence of the McMillan and Chavis (1986) model, as well as the need for a brief measure of SOC that can be easily applied in community-based research and practice, this research was needed to further address methodological and theoretical issues associated with the study of SOC.

## **METHOD**

### ***Participants***

Participants in this research were interviewed as part of a larger study evaluating a community health promotion initiative in the midwestern United States. Three-hundred eight randomly selected residents participated in the survey (response

rate = 76%). Of these individuals, 293 completed all BSCS items and were included in the present study. This remaining sample ( $n = 293$ ) was 57% female, 1.3% Hispanic, and 98.7% White, non-Hispanic. Approximately 11% were between the ages of 18–35, 32% were between 36–50 years, 20% were between 51–60 years, 19% were between 61–70 years, and 19% were age 71 or older. Thirteen percent reported an annual household income of less than \$20,000, 23% reported income between \$20,000 and less than \$35,000, 22% reported income of \$35,000 to less than \$50,000, 29% reported income \$50,000 to less than \$75,000, and 13% reported income of \$75,000 or more. Educationally, 6% had less than high school, 34% had completed high school, 20% had some college, 13% had earned an associate's degree, 18% had earned a bachelor's degree, and 9% had earned a graduate degree.

### Measures

*Sense of community.* The measure of SOC used in this study was an 8-item scale, henceforth referred to as the Brief Sense of Community Scale (BSCS), designed to assess the dimensions of needs fulfillment, group membership, influence, and emotional connection as defined in the McMillan and Chavis (1986) model. Items of the BSCS were created primarily by the lead author of the scale's underlying theory (i.e., McMillan). Consistent with recommendations in the SOC literature (Peterson, Speer, & Hughey, 2006), only positively worded items were included in the BSCS. In addition, all BSCS items were designed to reference respondents' neighborhood and used a 5-point, Likert-type response option format ranging from *strongly agree* to *strongly disagree*. Cronbach's alpha for the overall BSCS was .92 ( $M = 3.81$ ,  $SD = .79$ ). Alphas among the subscales were .86 for needs fulfillment ( $M = 3.65$ ,  $SD = .98$ ), .94 for group membership ( $M = 4.18$ ,  $SD = .92$ ), .77 for influence ( $M = 3.50$ ,  $SD = .87$ ), and .87 for emotional connection ( $M = 3.91$ ,  $SD = .89$ ). The BSCS items used in this study are shown in the Appendix.

*Community participation.* The measure of community participation used in this study was an 8-item scale that assessed civic involvement and participatory behaviors in community-action activities. Items asked respondents to indicate their frequency of participation in a variety of community groups and events (e.g., signed a petition, written a letter to influence local policies, attended a public meeting to pressure for a policy change) over a three-month period. Respondents answered the items using a 4-point scale ranging from *not at all* to *five times or more*. Speer and Peterson (2000) found support for the validity of the community participation scale. Their factor analysis suggested that the scale's items could be considered as representing one underlying participation dimension. In addition, they found that the community participation scale was related as expected with membership in community organizations, perceptions of involvement among institutions in the community, and sense of community. Cronbach's  $\alpha$  for the community participation scale in this study was .80 ( $M = 1.46$ ,  $SD = .51$ ).

*Psychological empowerment.* The revised version of the Sociopolitical Control Scale (SPCS-Revised; Peterson et al., 2006; Zimmerman & Zahniser, 1991) was used to assess the intrapersonal component of psychological empowerment. The 17 items of the SPCS-R were designed to measure self-perceptions of an individual's abilities to organize people and influence policy decisions in a local community. Support for both the content and construct validity of the SPCS-R was found in the Peterson et al.

(2006) study. In that study, factor analysis confirmed the underlying structure of the SPCS-R, and further tests demonstrated that the SPCS-R was related in expected ways with measures of community involvement. For this study, the 17 items were combined to provide a single measure of empowerment. Cronbach's  $\alpha$  for the SPCS-Revised in this study was .92 ( $M = 2.83$ ,  $SD = .78$ ).

*Mental health.* The 12-Item Short-Form Health Survey (SF-12; Ware, Kosinski, & Keller, 1996), a self-report measure of health-related quality of life (HRQoL), was also administered to participants of the study. The SF-12 was designed to examine multidimensional health constructs of well-being and personal evaluation of health for the general population and those with chronic diseases. Two summary subscales may be derived from the SF-12, including a mental health summary subscale and a physical health summary subscale. Both subscales of the SF-12 have been reported as having strong reliability and validity, and they have been applied extensively in health-related studies. In this study, we used the mental health summary subscale of HRQoL for our measure of mental health.

*Depression.* The abbreviated version of the Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977) was included in this study. This 7-item version (Krause, 1986, 1995) of the CES-D was used to assess cognitive aspects of depression, or depressed affect, as well as somatic manifestations of depression. Items referenced how frequently respondents experienced specific depressive symptoms, such as depressed mood and sleep disturbances, during the previous week. The shortened version of the CES-D has been demonstrated to be reliable and valid with adult populations (Krause, 1995).

### **Procedures**

Using multiple sources (e.g., a household telephone directory in electronic format), all residences with phone numbers in the study area were selected as the sampling frame. A simple random sample was then selected. The survey was administered face-to-face by trained surveyors through interviews typically lasting between 45 and 90 minutes.

## **RESULTS**

The objectives of this study were to test the factor structure of a brief measure of SOC (i.e., the BSCS) and examine its relationship with a set of theoretically relevant variables. Two sets of analyses, CFA and partial correlation analysis, were performed. First, a series of CFAs were conducted using AMOS 4.0 (Arbuckle & Wothke, 1999). Two first-order models were tested: (a) Model 1, the 1-factor BSCS, and (b) Model 2, the 4-factor BSCS. In addition, we tested the hypothesized second-order structure of the BSCS (Model 3) in which four dimensions (i.e., needs fulfillment, group membership, influence, and emotional connection) were hypothesized as representing one underlying SOC construct. Second, we computed partial correlations between BSCS subscales and a set of theoretically relevant variables that included community participation, empowerment, mental health, and depression. Demographic variables (i.e., age, gender, education, and income) served as covariates in the partial correlation analysis.

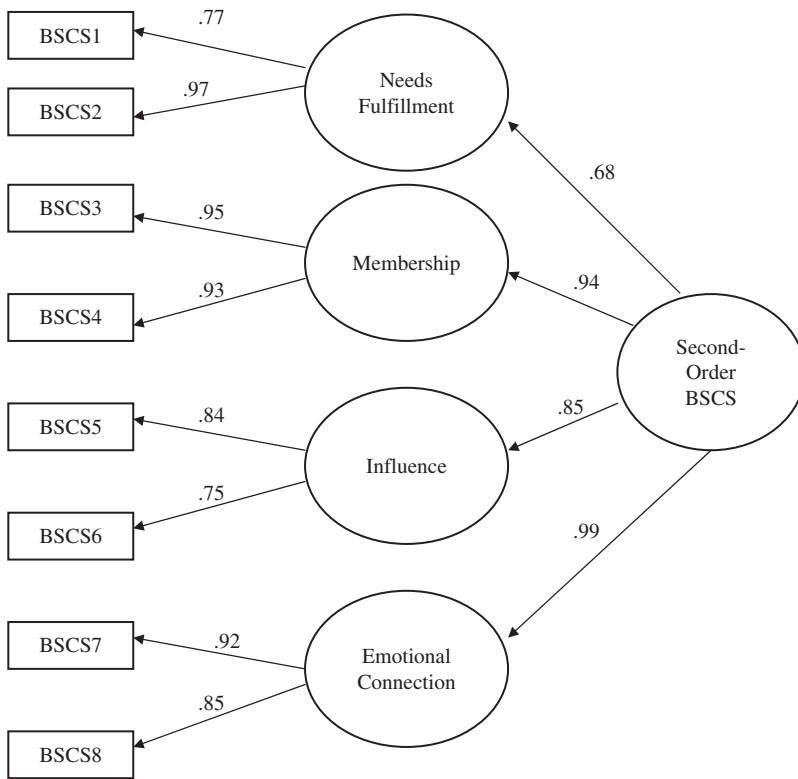
**Table 1. Overall Fit Statistics for Brief Sense of Community Scale (BSCS) Confirmatory Factor Analyses**

Measures of fit	Models		
	1-Factor BSCS	4-Factor BSCS	Second-order BSCS
Discrepancy $\chi^2$	249.405	25.946	28.032
<i>df</i>	20	14	16
<i>p</i> -value	< .001	.026	.031
Discrepancy/ <i>df</i>	12.470	1.853	1.752
GFI	.834	.979	.977
AGFI	.702	.945	.949
TLI	.825	.987	.989
CFI	.875	.993	.993
RMSEA	.198	.054	.051
BIC	340.288	150.910	141.636
AIC model	281.405	69.946	68.032
AIC saturated	72.000	72.000	72.000

Table 1 presents fit indices for the CFAs performed in our study. The 1-factor solution for the BSCS (Model 1) provided a poor fit to the data from the sample. As can be seen in Table 1, the discrepancy  $\chi^2$  for Model 1 was statistically significant; the discrepancy-to-*df* ratio value was greater than 2.0; and the values for the Goodness-of-Fit Index (GFI), Tucker-Lewis Index (TLI), and Comparative Fit Index (CFI) were below .90, indicating poor fit for the 1-factor solution. In addition, the root mean square of error approximation (RMSEA) for Model 1 was well beyond the .08 threshold for acceptable model-to-data fit. Contrary to the 1-factor solution, the 4-factor solution for the BSCS (Model 2) provided a good fit to the data. As shown in Table 1, the discrepancy  $\chi^2$  for Model 2 was not statistically significant at the .01 level; the discrepancy-to-*df* ratio value was less than 2.0; and the values for the GFI, TLI, and CFI were all above .90, indicating good fit for the 4-factor solution. In addition, the RMSEA for Model 2 was within the threshold for acceptable fit.

The values for the Bayes Information Criterion (BIC) and Aikake Information Criterion (AIC) shown in Table 1 are useful to compare the fit of single-factor versus multifactorial models. As can be seen in Table 1, there was a large difference in BIC values between Models 1 and 2 (BIC difference = 189.378), with Model 2 having the lower BIC value. Accordingly to Raferty (1993), a BIC difference greater than 9.2 may be considered as conclusive evidence in support of the model with the lower BIC value. Thus, these results show that the multifactorial model (Model 2) provided a better fit to the data than the single-factor model (Model 1). The AIC results showed a similar pattern. When interpreting the AIC, however, the solution in which the AIC model value closest to the AIC saturated value is considered as providing the better fit to the data. Table 1 shows that the model AIC value was closest to saturated AIC value for the multifactorial solution (Model 2), indicating that this 4-factor model provided a better fit to the data than the 1-factor model.

Fit indices for the second-order CFA of the BSCS (Model 3) are also presented in Table 1, whereas both first-order and second-order standardized regression weights are shown in Fig. 1. As can be seen in Table 1, the discrepancy  $\chi^2$  for Model 3 was not statistically significant at the .01 level; the discrepancy-to-*df* ratio value was less than 2.0; and the values for the GFI, TLI, and CFI were all above .90, indicating good fit for



**Figure 1.** Second-order confirmatory factor analysis of the Brief Sense of Community Scale (BSCS).

**Table 2. Correlations Between Demographics and the Overall Brief Sense of Community Scale (BSCS) and BSCS Subscales**

Variables	Age	Gender	Education	Income
Overall BSCS	.19*	-.06	.03	.01
Needs fulfillment	.17*	-.07	-.02	-.04
Group membership	.19*	-.08	.01	.00
Influence	.06	-.02	.09	.07
Emotional connection	.21*	-.03	.04	.00

Note. Gender, 1 = male; 2 = female.

\* $p < .01$ .

Model 3. The RMSEA for Model 3 was also within the threshold for acceptable fit. Furthermore, the standardized regression weights in Fig. 1 indicate that each of the BSCS items had strong loadings for the hypothesized dimension, and that each dimension had strong loadings on the hypothesized second-order SOC construct. All first and second-order loadings were significant at the .01 level. As can be seen in Fig. 1, the first-order standardized regression weights were .75 or greater as aligned with the BSCS's hypothesized multidimensional framework, whereas the second-order standardized regression weights were .68 or greater. These results provide support for the hypothesized structure of the BSCS in which the scale's items were thought to



**Table 3. Partial Correlations Between Overall Brief Sense of Community Scale (BSCS), BSCS Subscales, Community Participation, Empowerment, Mental Health, and Depression**

Variables	1	2	3	4	5	6	7	8	9
1. Overall BSCS	—	.79*	.91*	.84*	.90*	.16*	.22*	.32*	-.25*
2. Needs fulfillment		—	.59*	.51*	.56*	.02	.09	.20*	-.18*
3. Group membership			—	.69*	.84*	.14	.18*	.33*	-.24*
4. Influence				—	.73*	.22*	.24*	.27*	-.21*
5. Emotional connection					—	.19*	.25*	.30*	-.23*
6. Community participation						—	.35*	.04	-.01
7. Empowerment							—	.01	-.04
8. Mental health								—	-.72*
9. Depression									—

Note. Demographic variables (i.e., age, gender, education, and income) served as covariates.

\* $p < .01$ .

assess four SOC dimensions (i.e., needs fulfillment, group membership, influence, and emotional connection) representing one underlying SOC construct.

Table 2 shows correlations between demographic variables (i.e., age, gender, education, and annual household income) and the BSCS; Table 3 presents partial correlations between the BSCS and the set of theoretically relevant variables of community participation, psychological empowerment, mental health, and depression. Demographics served as covariates in the partial correlation analysis. Bivariate results shown in Table 2 indicate that only age was significantly associated with the overall BSCS scale ( $r = .19, p < .01$ ), and with the subscales of needs fulfillment ( $r = .17, p < .01$ ), group membership ( $r = .19, p < .01$ ), and emotional connection ( $r = .21, p < .01$ ). The partial correlations shown in Table 3 indicate strong relationships between the BSCS subscales after controlling for demographics. Partial correlations between the BSCS subscales ranged from .51 to .84.

Table 3 also shows that the overall BSCS was positively related with community participation ( $r = .16, p < .01$ ), the intrapersonal component of psychological empowerment ( $r = .22, p < .01$ ), and mental health ( $r = .32, p < .01$ ), and negatively related with depression ( $r = -.25, p < .01$ ). In addition, BSCS subscales were generally found to relate differently to each of the conceptually relevant variables. Community participation was significantly associated with the SOC dimensions of emotional connection ( $r = .19, p < .01$ ) and influence ( $r = .22, p < .01$ ), but community participation was not related with group membership nor needs fulfillment. Empowerment was found to be significantly associated with emotional connection ( $r = .25, p < .01$ ), influence ( $r = .24, p < .01$ ), and group membership ( $r = .18, p < .01$ ), but it was not significantly related with needs fulfillment. Furthermore, all four SOC dimensions were significantly associated with mental health and depression, with the strongest relationships between mental health and group membership ( $r = .33, p < .01$ ) and emotional connection ( $r = .30, p < .01$ ).

## DISCUSSION

This study developed a brief measure of SOC (i.e., the BSCS), which was congruent with the McMillan and Chavis (1986) theory, and tested the validity of that measure. Results of our study confirmed the first-order and second-order factor structure of the

BSCS, thus providing empirical support for the underlying multidimensional model of SOC as proposed by McMillan and Chavis (1986). Our analysis of the first-order factor structure of the BSCS showed that the 4-factor model provided a better fit to the data in our study than the 1-factor model. In addition, our analysis of the hypothesized second-order structure of the BSCS indicated that the four dimensions of SOC (i.e., needs fulfillment, group membership, influence, and emotional connection) could be considered as representing one underlying SOC construct. Further analysis showed evidence of the measure's construct validity. The overall BSCS scale and its subscales were found to be correlated as expected with community participation, psychological empowerment, mental health, and depression. These results demonstrate robust empirical support for the validity of the BSCS and its underlying multidimensional theory of SOC.

Our findings have critical implications for the field of community psychology. First, they suggest that questions about the McMillan and Chavis theory (1986), which has held important sway within the discipline for many years, may be based on measurement weaknesses rather than theoretical shortcomings. Much effort has recently been made by researchers to salvage a widely used measure of SOC (i.e., the SCI), but at this point we have more confidence in flaws attributable to measurement error (Peterson et al., 2006) than uncertainty in the theory. A second implication of our findings is that SOC is indeed a multidimensional construct. Taken together, these implications contradict the notion that a one-dimensional SCI can be considered a valid measure of SOC (Chipuer & Pretty, 1999). They also refute the idea that through modifying SCI items, via recombining items into new subscales or supplementing subscales with new items, researchers can create an alternative number of dimensions that better describe SOC (Proescholdbell et al., 2006; Long & Perkins, 2003; Obst & White, 2004; Tartaglia, 2006).

We assert that, over time, known measurement weaknesses have resulted in the frequent use of SOC as a one-dimensional construct, and the cumulative effects of these efforts to salvage the flawed SCI has served to undermine scholars' confidence in the multidimensional nature of this theory. Instead of another attempt at recouping the SCI, this study started with acknowledging known measurement flaws and involved the theory's primary author in item development. In addition, this study represents one of the most thoroughly executed tests of measurement of SOC as theorized by McMillan and Chavis (1986). Not only was a first-order model tested, but also a second-order model to determine the scale's congruence with theory, and further tests of construct validity found that the scale converged and diverged with other measures in expected ways. Our findings suggest a fundamental cause for the inconsistent findings of recent SOC studies is rooted in measurement rather than theoretical problems. We advocate that use of a measure that better fits the construct can help determine whether the theory is valid or in need of revision or replacement.

Despite the robust findings of our study, more work is needed to test SOC theory by examining the extent to which these underlying constructs are found with different referents and in different contexts. Similarly, the BSCS itself needs to be tested with new populations and settings to assure generalizability of both the measure and the theory. We assert that specific operational definitions of SOC will depend on the context in which SOC is measured. The BSCS was applied in this study to midwestern neighborhood residents; therefore, modifications may be necessary to make this measure applicable to youth in Western Australia or elderly on the east coast of the

United States. Sense of community, as one of the defining phenomena of interest in our field, still holds much promise for community psychology and other disciplines. We hope that immediate attention to measurement issues concerning McMillan and Chavis' (1986) orienting model of SOC will advance both theory and practice in community psychology.

### APPENDIX. BRIEF SENSE OF COMMUNITY SCALE (BSCS) ITEMS<sup>a</sup>

<i>Concept</i>	<i>Item</i>	<i>Item wording</i>
NF	BSCS1	I can get what I need in this neighborhood.
NF	BSCS2	This neighborhood helps me fulfill my needs.
MB	BSCS3	I feel like a member of this neighborhood.
MB	BSCS4	I belong in this neighborhood.
IN	BSCS5	I have a say about what goes on in my neighborhood.
IN	BSCS6	People in this neighborhood are good at influencing each another.
EC	BSCS7	I feel connected to this neighborhood.
EC	BSCS8	I have a good bond with others in this neighborhood.

<sup>a</sup>Concepts based on McMillan and Chavis (1986): NF = Needs fulfillment; B = membership; IN = influence; EC = emotional connection.

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