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Sense of Community Among Individuals in Substance Abuse Recovery

Edward B. Stevens,
DePaul University

Leonard A. Jason,
DePaul University

Joseph R. Ferrari,
DePaul University

Bradley Olson, and
National-Louis University

Ray Legler
DePaul University

Edward B. Stevens: esteven5@depaul.edu; Leonard A. Jason: ljason@depaul.edu; Joseph R. Ferrari: jferrari@depaul.edu; Bradley Olson: bradley.olson@nl.edu; Ray Legler: rlegler@nl.edu

Abstract

This study assessed the psychometric properties of the *Psychological Sense of Community Scale* (PSCS). Psychological sense of community is a construct that has been developed primarily in the field of community psychology and deals with the feelings of connectedness, group membership, and need fulfillment that members of small groups or larger communities may have toward other members. The current research explores this concept in the evaluation of Oxford Houses, residential homes designed to provide mutual support to individuals recovering from substance abuse dependence, through the use of the PSCS. Overall, the PSCS was a multidimensional scale exhibiting a cluster of negatively phrased items with a large number of highly loading items. With a three factor structure, two factors were nearly perfectly correlated and neither sex nor race bias affected the initial formulation. However, sex and race were significant (but of small magnitude) covariates in a later sample, and highly reliable subscales were formulated with five items. Taken together, the PSCS was capable of performing as an acceptable measurement model in latent analysis.

Sense of Community Among Individuals in Substance Abuse Recovery The nature of an individual's connectedness with broader social contexts has been of interest within community psychology since Sarason (1974) noted a pattern of loneliness and alienation characterized as a waning *psychological sense of community* (p. viii). These relationships between individuals and their communities of interest encompass myriad possible institutions, organizational interests, and groups (Sarason, 1974). Within this complexity,

some sense of an individual's position within a community of individuals develops. However, the multidimensionality of sense of community increases the difficulty of operationally defining and measuring it.

This paper examines the Psychological Sense of Community Scale (PSCS) in the context of research on Oxford Houses. In the following paragraphs we present a brief introduction to Oxford Houses and the research on these community-based recovery homes. We then discuss the role of psychological sense of community in Oxford Houses and the efforts that have been made to measure this construct. The paper then discusses our evaluation of the PSCS, including factor analysis aimed at improving the reliability and validity of the scale.

The main purpose of an Oxford House is to provide safe, affordable, substance-free housing where residents may offer mutual support in remaining abstinent (Ferrari et al, 2004; 2006). Research suggests that being a resident at an Oxford House for 6 months or more has a positive influence on both abstinence self-efficacy and the likelihood of maintaining abstinence (Jason, Davis, Ferrari, & Anderson, 2007). In a randomized study comparing people entering usual aftercare or an Oxford House residence (Jason, Olson, et al. 2006), individuals who stayed in an Oxford House for at least six months demonstrated, on average, better outcomes related to relapse, employment, criminal charges and self-regulation than non-residents.

At present, more than 1,400 Oxford Houses are in operation across the United States. Each Oxford House is a communal residence that is a rented, single-family house for same-sex adults (averaging 8 residents) recovering from substance abuse (Jason, Olson, Ferrari, & Lo Sasso, 2006). The houses are resident-funded, democratically governed, without restrictions on length of stay, and operate with minimal rules other than economic sufficiency and a zero tolerance for substance usage (see Ferrari, Jason, Davis, Olson & Alvarez, 2004; Ferrari, Jason, Sasser, Davis, & Olson, 2006).

One of the key aspects of the Oxford House model is the social support that is gained from being part of the community of residents in the house. Several studies have documented the links between social support, psychological sense of community, and substance abuse recovery in Oxford Houses (Bishop, Chertok, & Jason, 1997; Ferrari, Jason, Olson, Davis, & Alvarez, 2002; Graham, Jason, & Ferrari, 2009). Given the roles that social support and psychological sense of community can play in the recovery of individuals who have had problems with substance abuse, proper measurement of psychological sense of community is essential. If we can improve our measurement of this construct, we will be better able to understand its relationship to social support and substance abuse recovery. This will be valuable in recovery settings other than Oxford Houses as well. In addition, a better measure of psychological sense of community will be useful in other research that explores the relationship between individuals and their social environments.

McMillan and Chavis (1986) provided the following definition as an operational construct: "Sense of Community is a feeling that members have of belonging, a feeling that members matter to one another and to the group, and a shared faith that members' needs will be met through their commitment to be together" (p. 9). From a clinician perspective, sense of

community may be a critical characteristic for group effectiveness. Groups with a low sense of community may lack a feeling of shared purpose and outcomes, less reciprocity of mutual support and helping behaviors, and an increase in conflict due to perceived individual independence and uniqueness.

The theoretical composition of sense of community includes four constructs: 1) membership, 2) influence, 3) integration and fulfillment of needs, and 4) shared emotional connection (McMillan and Chavis, 1986). Each of these four elements consists of a number of attributes which serve to define the construct. For example, membership encompasses characteristics of a common symbol system, personal investment, belonging, security, and boundaries. Influence includes components of power, resources, conformity, and cohesiveness. Fulfillment of needs addresses the benefits or rewards of being a member. Included in this category are shared values and interdependent motivations. Shared emotional connection encompasses components such as interaction, contact, shared events, and investment (McMillan & Chavis, 1986).

In a comprehensive, grounded approach to developing a sense of community measure, Glynn (1981) focused on developing a key list of factors defining communities and creating contrasts between ideal and current assessments among samples of current residents. Research then produced empirical evidence that higher levels of sense of community and satisfaction were positively related and that measurable attitudes were predictive of sense of community. The most powerful predictor of *sense of community* (SOC) consisted of an individual's assessment of how many incremental years they lived within a specific neighborhood (Glynn, 1981). Interestingly, although the expectancy of future residency was the strongest predictor, number years at current address and SOC were not related.

Another early study utilized a subset of Glynn's SOC instrument to measure the impact of a civic intervention where Boy Scouts were matched with local parks to reduce litter and identify repair or maintenance opportunities (Bogat, 1984). This analysis resulted in a 22-item measure consisting of five subscales: community livability, community attractiveness, community support, feelings about community, and community resources. While the intervention itself did not suggest a significant difference in SOC, some significant associations were related to demographic variables including age and residence stability which differed from the results of Glynn's study of adults.

A different approach towards understanding sense of community not bounded by specific place resulted in the *Perceived Sense of Community Scale* (PSCS: Bishop, Chertok, & Jason, 1997). The purpose of this scale was to measure the psychological state of sense of community across a broad definition of community (a group acting on some shared interest, e.g. a self-help group). In its theoretical configuration the scale was divided into three constructs: Mission, Connections, and Reciprocal Responsibility. While not directly translatable to the four constructs (membership, influence, fulfillment of needs, and shared emotional connection) of McMillan and Chavis (1986), these subscales captured the essence of a shared purpose with common action, an interdependence of roles and outcomes, and an emotional bond.

The PSCS, after empirical testing, consisted of a three factor model comprising Mission, Reciprocal Responsibility, and Disharmony. This measure was utilized in several studies of adults in recovery from substance abuse and living in communal living arrangements (Bishop et al., 1997; Bishop, Jason, Ferrari, & Huang, 1998; Graham, Jason, & Ferrari, 2009). The PSCS also was validated with adults from the Slovak Republic differing in profiles (religious, work, student, and social groups: Halamova, 2001) and with adult volunteers in Tasmania, AU, working with the elderly (Kapoor & Ferrari, 2007).

Sense of Community among Adults in Substance Abuse Recovery

Generally the PSCS has been used in research on Oxford House residents. Bishop, Jason, Ferrari, and Huang (1998; see also Bishop, Chertok, & Jason, 1997) explored predictors of length of stay in Oxford Houses. Overall, an individual's age and their age difference with their average cohort were significant predictors. Results also found that pessimism was significantly related to length of stay. PSCS subscale scores were not significantly related to length of stay in the initial analysis. However, at a follow up interview with individuals still in residence PSCS scores significantly increased in mission and reciprocal responsibility scores, and significantly decreased in disharmony - suggesting for these individuals that continued residence in Oxford House was associated with an increased sense of community.

Studies by Olson, Curtis, Jason, Ferrari, Horin, and Davis (2003) and d'Arlach, Olson, Jason, and Ferrari (2006) found average PSCS scores were higher among women who lived in Oxford Houses. A study by Alvarez, Adebango, Davidson, Jason, and Davis (2006) found that a matched sample of deaf and hearing participants scored similarly on PSCS scores. In an analysis of PSCS aggregates, Graham, Jason, Ferrari, and Davis (2009) found that age and income heterogeneity (as measured by house standard deviations) were positively associated with the harmony (complement of disharmony) dimension of the PCSC.

In an overview of the Oxford House model and its relationship with sense of community, Ferrari, Jason, Olson, Davis, and Alvarez (2002) documented the Oxford House system and reported results of previous research relevant to PSOC. Prior research with the PSCS assumed continuous multivariate normality and in the case of the PSCS, utilized principal components analysis as the exploratory factor analysis methodology, thus incorporating the measurement error associated with individual observed indicators and inflating loadings (Bishop et al., 1997). Measurement invariance has critical significance in the assessment of the usability of a psychometric instrument. An instrument that cannot maintain even simple configural invariance has little validity on either a theoretical basis or in generalization. The lack of reliability inherent in instruments with weak measurement properties minimizes statistical power, limits between experiment comparisons, and generally, leads to violations of assumptions required for inferential conclusions (Vandenberg & Lance, 2000). This study investigated using both exploratory and confirmatory methods to test the first two levels of measurement invariance with respect to both an empirically derived and theoretically constructed measurement models for the PSCS.

The present study of the measurement invariance characteristics of the PSCS utilized data collected from adult participants who were in recovery from substance abuse and were

Oxford House residents at the initiation of a larger, longitudinal study. Our research may contribute findings to a process of measurement that has been in a continual state of development. More specifically, in the present study we utilized statistical methods which provided different insights on psychometric properties for scale improvement. We used a unique adult population with sufficient sample size and repeated observations for acceptable power (residents of Oxford House from across the USA). We did not expect race or sex to provide a group bias in the measurement model at the configural and factor loading structure levels of the PSCS. Overall, this exploratory and confirmatory analysis focused on the measurement properties of the PSCS to ascertain whether criteria for configural and metric invariance were met with an adult sample population.

Method

Participants

Participants in the present study were adults residing in Oxford Houses (length of stay at study initiation, $M = 10.9$ months, $SD = 15.0$ months, $range = 1$ day to 10.17 years). Of 897 initial participants, 32.7% were female ($n = 293$) and 67.3% were male ($n = 604$), with an average age of 38.4 years ($SD = 9.2$, $range = 18.25$ years to 69 years old). Most participants ($n = 524$, 58.4%) were Caucasian followed by African American representation ($n = 305$, 34.0%). Nearly half of the respondents were never married ($n = 437$, 49.0% of those reporting), followed by divorced/widowed ($n = 283$, 31.8%), separated ($n = 128$, 14.4 %), and married ($n = 43$, 4.8%). Most participants also were employed full time (69.4%), with another 14.2% working part-time, 4.3% retired or disabled, and 12.0% unemployed. A large majority (75.8%) had 12 or more years of education and 27.9% had 14 or more years. The average length of alcohol sobriety was 2.6 years ($SD = 2.9$ years) and the average time abstinent with drugs was 2.8 years ($SD = 3.1$ years).

These participants were surveyed a total of 4 times in sequential waves each separated by 4 months or a total of 12 months between Waves 1 and 4 (the PSCS was administered during Waves 1 and 3). For this study, the samples were restricted to individuals who were either African American or White and who fully completed the survey instrument on sense of community. For this analysis the sample sizes by sex and race reflected this reduced sample set (see Table 1). The larger sample sizes were used except when *race* was used as either a grouping variable or as a covariate. In addition, Wave 1 was split into exploratory and confirmatory sample sets by random assignment of cases.

Psychometric Measures

Perceived Sense of Community Scale (Bishop et al., 1997) consisted of 30 items that were empirically factored into 3 subscales—*common mission*, *reciprocal responsibility*, and *disharmony*. Examples of items on the *common mission* subscale included *there is a sense of common purpose in this group* and *the goals of this group are important to members*. *Reciprocal responsibility* items included *people can depend on each other in this group* and *members are willing to help each other*. Sample items from *disharmony* included *members do not feel comfortable asking for assistance from the group* and *in this group there is the feeling that people should not get too friendly*. Scoring was on a 5 point Likert-type scale.

These subscales exhibited good to excellent reliability (For Wave 1 participants, *common mission* $\alpha = 0.93$, *reciprocal responsibility* $\alpha = 0.96$, *disharmony* $\alpha = 0.76$, and overall $\alpha = 0.95$).

Procedure

Recruitment was accomplished by advertising in an Oxford House newsletter and by personal solicitation to Oxford House presidents in 5 major geographic areas (Oregon/Washington, Illinois, Texas, North Carolina, and New Jersey/Pennsylvania). In addition approximately 100 individuals were initially surveyed at a National Convention for Oxford House. Overall, individuals from 214 houses (an average of 4.7 participants per house) took part in the first wave of recruitment and data collection. Participants were fully informed about the nature and duration of the study, signed consent forms prior to any data collection, and were advised they could end an interview or drop out of the study at any time. For their time, individuals were compensated a modest amount (\$15 per survey). Information was collected in person and over the telephone. For a full description of the recruitment process see Jason, Davis, Ferrari, and Anderson (2007).

Results

Perceived Sense of Community Scale (PSCS)

Exploratory factor analysis of a 50% randomized sample ($n = 443$) produced results that were not clear-cut (see Table 2). When assessing the extent to which various factor models fit the data, good fit is indicated by a discrepancy χ^2 that is not statistically significant (i.e., $p > .01$). Other indicators of good fit include the Goodness of Fit Index (GFI) and similar indicators (e.g., TLI and CFI) above .90 and root mean square error approximation (RMSEA) below .08. This exploratory factor analysis utilized maximum likelihood estimation with oblique rotation (Geomin). Estimation with WLSMV was also performed but produced significantly higher average error measures (e.g. for 3 factor model, $CFI = .901$, $RMSEA = .107$). Simply using goodness of fit measures suggested models greater than a two factor model. However, the factor determinacies and an inspection of the factor loadings (see Table 3) suggested a two dimensional model that was largely clustered on the basis of the valence of question phrasing. This lack of measurement adequacy at the initial exploratory level led to the removal of Items 13 and 29 for confirmatory purposes. Overall, the instrument was largely behaving as a two dimensional model that clustered between positively and negatively phrased items.

Confirmatory analysis was conducted which compared the 3 factor model as derived in the literature with one-dimensional and two-dimensional formulations. These results supported a two dimensional view of this sample population's usage of the instrument (see Table 4). These model comparisons indicated model inadequacy for both the earlier derived 3 dimensional model and a one-dimensional formulation. The two-factor model exhibited adequate goodness of fit characteristics for both configuration and equivalent factor loadings when applied to the second 50% randomized sample.

The difficulty of achieving a third dimension in this sample was also illustrated by the strong correlation between factors when separately constructed. Using observed data to construct the three factors indicated in the literature (the factors are Mission, Reciprocal Responsibility and Disharmony), the correlation between Mission and Reciprocal Responsibility was nearly perfect ($r = .909, p < .001$). The correlation for these factors at the latent level was even more extreme ($r = .995, p < .001$). For this sample, the results did not support a more complicated model, however, the two dimensional model did provide sufficient measurement model adequacy to test for sex or race bias.

Group analysis (see Table 5) resulted in model performance deterioration on a goodness-of-fit basis for both sex and race covariates. In addition to inadequate fit, the test of the factor means did not result in any significant differences. This analysis indicated that sex or race was not statistically biasing the measurement model.

In a replication of this group analysis to a subsequent sample of PSCS instruments that were administered approximately 8 months later, this result did not hold (see Table 6). Using the derived 2 factor measurement model and using sex, race, and sex and race interaction term, sex and race had significant but relatively small beta coefficients in an SEM regression utilizing Wave 3 data. In the Wave 3 results, African Americans were likely to score slightly higher on positive items and women were likely to score slightly lower on positive items. The interaction of race and sex was not significant. These results suggested possible instability of the instrument relative to sex and race covariates. This difference might also be a result of a systemic change that occurred between Wave 1 and Wave 3. This single test could not differentiate between the two possible phenomena, either measurement instability or real differences between groups. Overall, however, except for these slight differences, the measurement model performed well on this second sample with respect to measurement invariance.

Discussion

Overall, the PSCS performed with acceptable goodness-of-fit characteristics for use in latent modeling. The original configuration as derived by Bishop et al. (1997) utilized a significantly smaller sample size and principal components methodology. This investigation was largely focused on latent measurement model properties. The two factor model exhibited relatively stable measurement characteristics after several small modifications to drop the two lowest loading items and allow for serial correlation among two sets of two items (e.g. items 1 and 2). This measurement in group confirmatory tests did not result in significant factor mean differences on the basis of sex (female/male) or race (African American/White). Overall, the measurement model was adequate.

The lack of replication to a historical configuration may have been due to insufficient sample variance and the high average correlation among all positively phrased items. The number of items wasn't essential to the measurement model and the analyses of observed subscale reliabilities suggested dramatic reductions in item counts (to 5 per subscale) could be made without materially reducing reliability. For example, simple scale analysis on the observed variables showed that scales consisting of 5 items (e.g. 1,4,7,10,16 or 2,5,8,11,14

—which are the first 5 items for the 1997 Mission and Reciprocal Responsibility subscales) resulted in Cronbach's $\alpha = .884$ and $.900$ respectively. The strengths of this instrument within this analysis included measurement stability, the potential opportunity to evaluate improvement opportunities due to item counts and high average correlations, and the absence of any strong biases related to sex or race. This instrument also had excellent observed reliability. This evidence suggested that a brief version of the PSCS should be attainable and that opportunities would be available to also increase its dimensionality without increasing the overall size.

In a structural equation model where the two factor measurement model was regressed on the independent variables of sex, race (African American/White) and an interaction term of sex and race, a subsequent sample resulted in significant results, although of relatively small effect sizes. On average, females scored slightly lower on the factor of positively phrased items and African Americans scored slightly higher. The interaction term was non-significant. This change from initial sample to subsequent sample suggested possible further research opportunities including whether this finding was correlated by house. Overall, the evidence for sex and race covariates was mixed.

Improvements to this scale indicated by the results of these analyses include 1) a clearer definition of the theoretical model, 2) developing lower inter-class correlations among positively phrased, theoretical subscales, 3) rephrasing negatively phrased items, and 4) reducing item counts per subscale. For the PSOC, the high degrees of correlation among items and theoretical constructs that were exhibited by this sample data would appear to support using a reduced item count for a one-dimensional construct measure in an observed form. In other words, utilization of a single subscale (e.g. *Reciprocal Responsibility*) or a reduced number of items would provide a sufficiently reliable measure of psychological sense of community. Revisiting the theoretical basis for the measurement would be a crucial step to implementing an improved model. Overall, the findings supported achievable means for measurement improvement.

The findings presented here confirm the problems with negatively-worded items discussed in research on the Brief Sense of Community Scale by Peterson, Speer, and Hughey (2006). That study found that the use of both positively and negatively worded items lead to factor instability and poor internal consistency. The results of the current study suggests that future research involving the PSOC scale should be done without including negatively-worded items, and supports the findings of Peterson, et. al. that negatively-worded items should be dropped from the BSCS as well.

The implication of this study for the treatment of people recovering from substance abuse is that this scale can be used to assess the psychological sense of community among members of group settings without regard to place or community. While research on the Brief Sense of Community Scale has led to the development and refinement of this scale (Chavis & Pretty, 1999; Peterson, Speer, & McMillan, 2008;), the BSCS has typically been used to assess PSOC in place-specific contexts such as research on neighborhoods. The BSCS discussed here can be used to measure PSOC in groups, such as those in recovery in Oxford Houses or other settings, regardless of physical place or community. This can be valuable to

the professional and non-professional recovery fields when the need arises to measure PSOC as it relates to treatment effectiveness and recovery attainment. As discussed previously, a more positive psychological sense of community among group members working to recover from substance abuse is related to better recovery outcomes. Assessment of the PSOC among groups can provide valuable information to professionals or self-help-group members as they work to improve group cohesion and maximize recovery success.

Possible future research opportunities for this construct of perceived sense of community (e.g. significantly broader in scope than a sense of community anchored to place) indicated by these analyses included 1) a more structured approach to measuring and evaluating sense of community characteristics at multiple ecological levels, 2) the “system” variance and personal variance contributions to sense of community, 3) the unstable component of an individual’s perception to sense of community, and 4) other possible significant covariates across groups and settings. An example of an ecological question would be the issue of influence. A distinction between organizational influence, members’ influence, and personal influence might result in differences in scoring and stability with respect to sense of community. An example of system and personal variance might be whether a sense of community score varied more in relation to perceptions of organizational characteristics or more in relation to assessments of personal characteristics. Overall, the multidimensionality of sense of community appears to provide significant opportunities for research and for method improvements.

A major limitation of this study concerned the sample population and the strategies to formulate a split sample design for exploratory and confirmatory analyses. The participants in the overall sample were self-presented and were current residents of an Oxford House. They, therefore, represented a non-random sample with a grouping characteristic related to substance abuse recovery. The split samples were randomized but were still subject to these overall characteristics of self-selection and substance abuse recovery. In addition to not being randomized as individuals, these individuals did not originate from a randomized sample of Oxford Houses. The sample population of houses was the result of a targeted recruiting strategy. This sample was, however, of sufficient size to exceed recommended sample sizes for exploratory analysis, confirmatory analysis, and structural equation modeling. In addition, this overall sample represented significant subpopulation diversity related to sex, race, age, and education level. A second limitation of the study was that it involved no systematic manipulations to stress a measurement model. The relative stability of the models might not replicate under conditions intended to change the underlying sense of community constructs. These analyses, therefore, were not in place to measure differences but to simply reduce and replicate correlation matrices from data taken at two different time points.

Our present investigation of a sense of community instrument tested the theoretical and empirically derived latent measurement models for configural and metric measurement invariance. Overall, the hypotheses expecting deviations from theoretical bases were mostly supported. Generally, the instrument did not have significant biases correlated with sex or race (African American/Caucasian). The instrument exhibited better measurement

invariance than anticipated and the results indicated opportunities for measure improvement as well as future research opportunities for sense of community.

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Table 1

Sample Sizes by Sex, Race, and Wave

Wave	Total Sex n	Female n	%	Total Race n	African American n	%
1	831	280	33.7	769	278	36.2
2	642	210	32.7	589	213	36.2
3	548	174	31.8	505	183	36.2
4	565	177	31.3	522	205	39.3

Note: For exploratory and confirmatory analysis purposes Waves 1 and 2 were further randomized into 50% samples.

Table 2

Perceived Sense of Community Scale Exploratory Factor Analysis

<u>Measure of Fit</u>	<u>1 Factor Model</u>	<u>2 Factor Model</u>	<u>3 Factor Model</u>	<u>4 Factor Model</u>
TLI	.823	.879	.912	.925
CFI	.835	.895	.929	.944
RMSEA	.089	.074	.063	.058
SRMR	.068	.039	.031	.027
FD	.99	.99, .91	.82, .98, .91	.97, .90, .98, .77

Note. TLI—Tucker Lewis Index, CFI—Comparative Fit Index, RMSEA—Root Mean Square Error of Approximation, SRMR—Standardized Root Mean Residual, FD—Factor Determinacies

Table 3

Perceived Sense of Community Scale (PSCS) Factor Loadings

Item	Factor 1	Factor 2	Factor 3
Q24— <i>when something needs to be done, group gets behind it</i>	.840		
Q21— <i>members feel like they belong</i>	.835		
Q16— <i>members put effort into what they do for the group</i>	.829		
Q20— <i>members work appreciated</i>	.828		
Q23— <i>group makes use of everyone</i>	.803		
Q27— <i>members share common values</i>	.782		
Q28— <i>members are like group of friends</i>	.753		
Q26— <i>members share control</i>	.747		
Q14— <i>members willing to help</i>	.735		
Q10— <i>goals important to members</i>	.734		
Q11— <i>group makes you feel good for helping</i>	.721		
Q8— <i>group looks out for members</i>	.715		
Q22— <i>atmosphere at meetings is relaxed and friendly</i>	.709		
Q5— <i>members can depend on each other</i>	.703		
Q4— <i>goals are meaningful</i>	.692		.350
Q1— <i>clear sense of mission</i>	.684		
Q25— <i>group goals are meaningful to larger community</i>	.684		
Q17— <i>feeling fellowship among members</i>	.680		
Q2— <i>members know they can get help from group</i>	.676		.325
Q7— <i>there is a sense of common purpose</i>	.661		.344
Q19— <i>you know when you are a member</i>	.646		
Q30— <i>there is a sense of camaraderie</i>	.608		
Q29— <i>members are often asked to take more responsibility</i>	.547		
Q13— <i>goals of the group are challenging</i>	.348		
Q12— <i>atmosphere is impersonal</i>		.678	
Q15— <i>there are in and out groups</i>		.639	
Q9— <i>members don't know goals</i>		.635	
Q6— <i>members not comfortable asking for help</i>		.629	
Q18— <i>some people feel like outsiders</i>		.570	
Q3— <i>there is a feeling that members shouldn't get to friendly</i>		.561	

Note: Loadings less than |.32| are suppressed

Table 4
Perceived Sense of Community Scale (PSCS) Confirmatory Factor Analysis—Measurement Model Comparisons

<u>Model</u>	<u>CFI</u>	<u>TLI</u>	<u>RMSEA</u>	<u>SRMR</u>	<u>Comments</u>
Empirical 1997 3 Factor	.880	.878	.073	.106	Based upon 1997 derivation
Unidimensional	.891	.881	.076	.055	
Two Factor—Configural Invariance	.930	.924	.061	.039	Factor loadings are free to vary
Two Factor—Metric Invariance	.926	.924	.061	.060	Factor loadings are equivalent

Table 5
Perceived Sense of Community Scale (PSCS) Confirmatory Factor Analysis—Measurement Model Comparisons

Model	CFI	TLI	RMSEA	SRMR	Comments
Two Factor--Sex as a Group	.891	.893	.074	.084	Factor means are not significantly different between groups
Two Factor--Race as a Group	.896	.897	.073	.079	Factor means are not significantly different between groups

Table 6
Perceived Sense of Community Scale Structural Equation Modeling—Supplementary Analysis

Wave	Model	CFI	TLI	RMSEA	SRMR	Comments
1	Measurement Model: Two Factor—Sex, Race, and Sex X Race as independent variables	.926	.923	.056	.056	No Significant Coefficients
3	Measurement Model: Two Factor—Sex, Race, and Sex X Race as independent variables	.946	.941	.052	.054	Significant coefficients F1 (positive items) on: Race, $\beta = .159$, $t_{(538)} = 2.54$, $p < .01$ Sex, $\beta = -.132$, $t_{(538)} = -3.073$, $p < .01$