The Development of the Perceived School Experiences Scale

Dawn Anderson-Butcher[1], Anthony Amorose[2],
Aidyn Iachini[3], and Annahita Ball[1]

Abstract

Objectives: This article describes two studies related to the development of the Perceived School Experiences Scale (PSES). The PSES may be used by social workers to assess youths' perceptions of three school-related protective factors, including school connectedness, academic press, and academic motivation. Method: In Study 1, exploratory and confirmatory analyses were conducted on a calibration ($n = 386$) and cross-validation sample ($n = 387$) of middle and high school students. In Study 2, test–retest reliability and predictive validity were established on a sample of high school students ($n = 97$). Results: The resultant 14-item PSES demonstrated acceptable factorial validity and gender invariance in samples of middle and high school students. The PSES also demonstrated acceptable test–retest reliability, and correlated positively with perceived belonging and social competence. Conclusions: Overall, the PSES has important implications for social workers as they assess important protective factors and document the effectiveness of their interventions for the children and youth they serve.

Enhancing students' social, emotional, and behavioral functioning, along with supporting improvements in students' academic learning, are important priorities for social work practice with children and youth in school settings. Strategies to increase attendance and graduation rates, improve academic achievement and grades, strengthen social competence, and enhance mental health are common goals for social workers working in these settings.

In today's climate of standards-based reform, performance-based budgeting, and school accountabilities, school social workers increasingly must document the effectiveness of their interventions. Cognitive, (i.e., literacy and math improvements) as well as behavioral (i.e., attendance, discipline), indicators are salient priorities. Research in positive youth development, however, proposes that risk and protective factors are proximal indicators that precede changes in behavior and learning (Alfaro, Umana-Taylor, Gonzalez-Backen, Bamaca, & Zeiders, 2009; Durlak, Weissberg, Dymnicki, Taylor, & Schellinger, 2011). Moreover, emergent federal, state, and local policies now focus on enhancing students' perceptions of their school experiences. Priorities related to improving school climate and connectedness, as well as enhancing academic expectations for students, represent new pathways for school improvement in many schools today (Anderson-Butcher, Lawson, et al., 2008; Cohen, McCabe, Michelli, & Pickeral, 2009). In fact, research highlights three salient protective factors related to students' experiences in school that are of special importance. These protective factors include: school connectedness; academic expectations for learning (academic press); and academic motivation.

School Connectedness

While the definitions of school connectedness oftentimes vary, and the terminology used may be inconsistent (i.e., belonging, bonding, connectedness, attachment, etc.; Archambault, Janosz, Fallu, & Pagani, 2009), Libbey (2004) presents one definition for this concept, defining school connectedness as students' general perceptions of their relationship to school. Existing studies of middle and high school students demonstrate that enhanced perceptions of school connectedness relate to improved grades, higher academic performance, and graduation from high school (Battin-Pearson, et al., 2000; Klem & Connell, 2004; Nasir, Jones, & McLaughlin, 2011; Voelkl, 1995; Wentzel, 1995).

Furthermore, research links school connectedness with other important nonacademic outcomes. Middle and high

[1] College of Social Work, Ohio State University, Columbus, OH
[2] School of Kinesiology and Recreation, Illinois State University, Normal, IL
[3] College of Social Work, University of South Carolina, Columbia, SC

Corresponding Author:
Dawn Anderson-Butcher, College of Social Work, Ohio State University, 1947 College Road Columbus, OH 43210, USA
Email: Anderson-butcher.1@osu.edu

school students with higher school connectedness experience fewer suspensions, expulsions, and disciplinary instances (Hawkins, Guo, Hill, Battin-Pearson, & Abbott, 2001); reduced absenteeism (Croninger & Lee, 2001; Klem & Connell, 2004); less disruptive behavior in the classroom (Goodenow, 1993); and less engagement in risky behaviors, including substance use, violence, and sexual activity (Loukas, Suzuki, & Horton, 2006; Resnick et al., 1997; Wilson, 2004). Evidence also indicates that high school students with higher perceptions of school connectedness are less likely to experience depression, anxiety, and stress (McGraw, Moore, Fuller, & Bates, 2008).

Academic Press

Academic press is defined as the extent to which school members, including teachers and students, experience a "normative emphasis on academic success and conformity to specific standards of achievement" (Lee & Smith, 1999, p. 912; McDill, Natriello, & Pallas, 1986). Initial research on this concept identifies academic press as a critical component of effective schools and important for overall student achievement (Bryk, 2010; Murphy, Weil, Hallinger, & Mitman, 1982).

In a sample of sixth and seventh grade students, academic press positively impacts students' effort and time spent on academic tasks (Lee & Smith, 1999). Similarly, academic press positively predicts middle school students' self-regulation and self-efficacy for learning in math, science, social studies, and language comprehension (Henderson et al., 2005; Middleton & Midgley, 2002). Middleton and Midgley (2002) also found that higher academic press reduces middle school students' avoidance of help-seeking behaviors.

Academic Motivation

Academic motivation, defined as students' general interest, engagement, and enjoyment in learning and school, is another critical factor related to student learning and achievement (Long, Monoi, Harper, Knoblauch, & Murphy, 2007). Evidence from the literature demonstrates that higher levels of academic motivation in middle and high school students relate to improved academic outcomes, including grade point average and standardized test scores (Anderson & Keith, 1997; Eccles, Wong, & Peck, 2006; Ratelle, Guay, Vallerand, Larose, & Senécal, 2007). Increased cognitive engagement also is related to increased levels of academic motivation in high school students (Walker & Greene, 2009). In addition, there is evidence to suggest in a study of elementary students that higher perceptions of academic motivation may relate to reduced feelings of anxiety and enhanced feelings of competence (Gottfried, 1990).

Considered together, school connectedness, academic press, and academic motivation are three critical dimensions of students' experiences in schools. Together, they are essential in promoting positive youth development and overall academic success. School social workers, counselors, teachers, and other student support personnel in schools often target these outcomes within their individual and school-wide intervention strategies. As such, measurement tools that assess needs, establish baseline scores, and monitor progress over time among students on these various indicators are necessary for evaluating these practices.

Some existing measurement tools are available that assess these and related constructs, such as the Child Behavior Checklist (CBC; Achenbach & Rescorla, 2001), the School Success Profile (Bowen, Richman, Bowen, & Broughton, 2003; Bowen, Rose, & Bowen, 2005), and the Developmental Assets Profile (Search Institute, 2004). Many of these are lengthy (with some over 100 items), few comprehensively assess all three of the aforementioned academic-related protective factors, and some also may be costly to implement. Additionally, apart from the CBC, few of these tools have established test–retest reliability that allow for the measurement of changes in students' perceptions over time. User-friendly, less costly, more time efficient and accessible, psychometrically sound tools that measure students' school experiences related to these three constructs are needed (Anderson-Butcher, Iachini, & Amorose, 2008; Beitchman & Corradini, 1988; Danielson & Phelps, 2003; Rydell, Hagekull, & Bohlin, 1997).

Therefore, the purpose of this research is to develop a survey instrument with good psychometric properties that measures these three critical dimensions of students' experiences in schools—school connectedness, academic motivation, and academic press. In Study 1, the Perceived School Experiences Scale (PSES) was developed, and exploratory and confirmatory factor analyses were conducted. Study 2 established the test–retest reliability and predictive validity of the scale. Findings from these two studies, along with overall implications for social work practice in schools, are then discussed.

Study 1

Method

Instrumentation. The PSES was developed using steps of scale development outlined by DeVellis (2003). Following a thorough review of literature, the researchers initially developed 32 items to measure students' perceptions of their experiences in school. More specifically, several critical dimensions of students' school experiences were included in these initial items, including academic press, school connectedness, and academic motivation. Respondents answered on a 5-point Likert-type scale, where 1 = *strongly disagree* and 5 = *strongly agree*.

Procedures. The PSES was administered to middle and high school students in two districts as part of a broader risk and protective factor assessment critical to school improvement planning. The entire risk and protective factor assessment took approximately 30 minutes to complete. All procedures were approved by a human subject's institutional review board.

Participants. Data from each district were combined and then randomly split using SPSS 17.0. The random split resulted in

two comparable subsamples, one subsample was used to conduct an Exploratory Factor Analysis (EFA) and one to conduct a confirmatory factor analysis (CFA). These samples were labeled the calibration sample and cross-validation sample, respectively. Only those with complete data on the PSES were included in the analyses.

The calibration sample included 386 middle and high school students. Thirty-three participants were in grade 7 (8.5%), 124 in grade 8 (32.1%), 34 in grade 9 (8.8%), 38 in grade 10 (9.8%), 42 in grade 11 (10.95%), 108 in grade 12 (28.0%), and 7 students (1.8%) failed to report their grade level. The majority of participants identified themselves as Caucasian (71.0%), followed by African American (14.0%), and Multiracial (8.8%). Less than 2.5% of the participants reported their race/ethnicity as Latino/a (1.3%) or Asian (1.0%). A total of 15 (3.9%) students did not report their race/ethnicity. Additionally, 205 participants indicated they were female (53.1%) and 175 participants reported being male (45.3%), while the remaining 6 students did not indicate their gender (1.6%).

The cross-validation sample included 387 participants with a similar grade composition as those in the calibration sample: 30 participants were in grade 7 (7.8%); 116 in grade 8 (30.0%); 38 in grade 9 (9.8%); 48 in grade 10 (12.4%); 31 in grade 11 (8.0%); and 107 in grade 12 (27.6%). Again, the majority of this sample was Caucasian (69.3%); 13.4% reported African American as their race/ethnicity, 9.0% reported Multiracial, 1.8% reported Latino/a, 1.0% reported Asian, and 21 (5.4%) did not specify race/ethnicity. Finally, 190 participants indicated they were female (49.1%) and 179 reported being male (46.3%), while the remaining 18 participants did not indicate their gender (4.7%).

Analytical approach. Our approach to establishing initial reliability and validity evidence for the PSES was to first conduct an EFA on the initial version of the scale with data from a random half of the participants—the calibration sample. The goal was to look at the overall factor structure and determine whether any of the items should be removed. We also sought to identify a parsimonious scale with a strong factor structure that we could carry on to the next stage of testing. After determining the factor structure in the calibration sample, we sought to test whether the structure of the scale was robust by conducting a CFA on the other half of the sample—the cross-validation sample. We also tested whether the factor structure was invariant for males and females in the cross-validation sample.

Results

EFA. An EFA using principal axis factoring with a promax rotation was used to examine the factor structure of the PSES in the calibration sample. An oblique rotation was used, given that we expected any underlying dimensions would correlate. The item factor loadings, percentage of variance explained, and theoretical criteria were applied to identify the most parsimonious factor solution (Netemeyer, Bearden, & Sharma, 2003). A factor analysis was deemed appropriate in the calibration

Table 1. EFA: Items and Factor Loadings for the 16-Item Version of the Perceived School Experiences Scale

	Factor		
Item	1	2	3
1. My teachers provide helpful feedback to students about their academic performance.	**.83**	.01	−.08
2. Decisions at my school always focus on what is best for learning.	**.77**	.03	−.02
3. My teachers monitor whether students are learning on a regular basis.	**.77**	−.01	.01
4. My school values students' learning.	**.76**	.06	.05
5. There are teachers at my school I can go to for help if I needed it.	**.74**	.01	.01
6. There are other school staff at my school I can go to for help if I needed it.	**.66**	.02	.06
7. I am confident in my ability to manage my school work.	−.06	**.80**	−.10
8. I feel my school experience is preparing me well for adulthood.	.04	**.78**	.03
9. I have enjoyed my school experience so far.	.03	**.74**	.09
10. I have a positive attitude toward school.	.03	**.71**	.02
11. I like the challenges of learning new things in school.	.02	**.68**	−.10
12. I feel I have made the most of my school experiences so far.	.07	**.60**	.06
13. I am proud to be a student at my school.	−.05	.00	**.94**
14. I feel like I belong to my school.	.03	−.06	**.89**
15. I enjoy coming to my school.	−.08	.08	**.83**
16. I have meaningful relationships with teachers at my school.	.13	−.07	**.66**
Initial Eigenvalue	6.80	2.44	1.54
Percent variance	42.53	15.27	9.61

Note. Pattern matrix from the principal axis factor analysis with promax rotation. The boldface values indicate which items comprise each of the three factors.

sample, given a significant (*p* < .01) Bartlett's (1954) test of Sphericity and a Kaiser–Meyer–Olkin Measure (KMO; Kaiser, 1974) value of .94.

Using a combination of the Kaiser–Guttman rule and an examination of the scree plot (see Tabachnick & Fidell, 2007), the initial run of the EFA indicated that the 32 items on the PSES were represented by six underlying factors accounting for 64.88% of the total variance. However, an examination of the factor loadings indicated that a number of items on the scale either failed to meet the minimum criterion loading of .55, which represents 30% of overlapping variance (Tabachnick & Fidell, 2007), or were found to cross-load on multiple factors. Further, two of the factors were not well defined insomuch as only 2 items had sufficiently high loadings on each of the given factors (Brown, 2006). Given our desire to identify the strongest and most parsimonious factor solution, we decided to eliminate these items and run the EFA again.

Using the same criteria, we settled on a 16-item version of the PSES. In this analysis, the 16 items were represented by 3 factors accounting for 67.40% of the variance. The factor loadings from the pattern matrix are shown in Table 1. Factor

Table 2. Summary of CFA Results From the Cross-Validation Sample

Model	df	S-B χ^2	p	RMSEA [90% CI]	CFI	GFI	SDCS (df difference)
Model #1 (16 items)	101	228.20	.00	.057 [.047, .067]	.98	.90	—
Model #2 (15 items)	87	133.44	.00	.037 [.024, .049]	.99	.94	126.02 ($_{14}$)
Model #3 (14 items)	74	107.34	.01	.034 [.018, .048]	.99	.95	26.35 ($_{13}$)

Note. S-B χ^2 = Satorra-Bentler scaled χ^2; RMSEA = root mean square error of approximation; CI = confidence interval; NNFI = non-normed fit index; GFI = goodness-of-fit index; CFI = comparative fit index; SDCS = Satorra-Bentler Scaled Difference in χ^2 test. All SDCS values are significant ($p < .05$).

1 accounted for 42.53% of the variance and included 6 items, conceptually constituting *Academic Press*. The second factor comprised 5 items accounting for 15.27% of the variance. This factor was labeled as *Academic Motivation*, as the items reflect the students' perceptions of a positive attitude, confidence, enjoyment of challenge, and value of their school experience. The third factor, which we labeled *School Connectedness*, accounted for 9.61% of the variance. The 4 items in this factor reflected students' perceptions of their relationships with teachers, belonging, enjoyment, and pride associated with school. As expected, the factors were positively related to each other, with bivariate correlations ranging from .34 to .64. Furthermore, the factors demonstrated strong internal consistency with Cronbach's α coefficients of .89, .88, and .90, for Academic Press, Academic Motivation, and School Connectedness, respectively.

CFA. We next tested whether the factor structure of the 16 item version of the PSES measure was reproducible in the cross-validation sample. The distributional assumptions from the cross-validation sample data were tested using PRELIS 2.20 (Scientific Software International, Inc., Chicago). The univariate skewness and kurtosis values ranged from −.29 to −1.20 and −.98 to −1.01, respectively. While these values suggested a reasonable degree of normality, the tests for both multivariate skewness and multivariate kurtosis were significant ($p < .01$). Thus, following the recommendations of Finney and Distefano (2006), we employed robust maximum likelihood estimation procedures when conducting the CFA using LISREL 8.71 (Scientific Software International, Inc., Chicago).

The initial CFA model tested specified that the 16 items loaded on three latent factors—Academic Press (6 items), Academic Motivation (5 items), and School Connectedness (4 items). The factor loading for a single item in each factor was set equal to 1 to establish a metric for the latent variables. The factor variances, the uniqueness for each item, and the covariances among the 3 latent variables were all freely estimated. No covariances between uniquenesses were modeled. The data were input using the asymptotic covariance matrix.

Multiple fit indices were employed to evaluate the adequacy of the estimated model. Specifically, the significance of Satorra–Bentler Scaled χ^2 (S-B χ^2), the root mean square error of approximation (RMSEA), the comparative fit index (CFI), and the goodness-of-fit index (GFI) were all used to evaluate the overall fit of the model. A nonsignificant ($p > .05$) S-B χ^2 value indicates a good fit of the model to the data, as does a RMSEA < .05. For all other fit indices, a value >.95 indicates

a good fit of the model (Hu & Bentler, 1999). We also examined the modification indices to determine whether any local areas of strain were affecting the adequacy of the model.

The overall fit of the initial model to the data was slightly less than ideal, S-B χ^2 = 228.20, df = 101, p = .00, RMSEA = .057 (90% CI = [.047, .067]), CFI = .98, GFI = .90. Examination of the modification indices revealed that item #6 from the Academic Press factor (see Table 2) was problematic. We therefore deleted this item and conducted the CFA again. Based on the Satorra–Bentler Scaled Difference in χ^2 Test (SDCS; see Brown, 2006), the removal of this item resulted in a significant improvement in fit from the initial model (SDCS = 126.02, df = 14, p < .01). The overall fit of second model was fairly good, S-B χ^2 = 133.44, df = 87, p = .00, RMSEA = .037 (90% CI = [.024, .049]), CFI = .99, GFI = .94; however, once again the modification indices indicated a single item was resulting in some local area of strain. Thus, we deleted this item (item #5) and ran the CFA once again.

The SDCS revealed that the removal of this item resulted in a significant improvement in fit (SDCS = 26.35, df = 13, p < .01). Furthermore, the overall fit of the third modified model was quite good, S-B χ^2 = 107.34, df = 74, p = .01, RMSEA = .034 (90% CI = [.018, .048]), CFI = .99, GFI = .95. No further areas of strain were apparent in the modification indices. Thus, we concluded that this model was the best representation of the data.

Table 3 presents the parameter estimates for this final model. All items significantly ($p < .05$) loaded on their respective latent factors, with completely standardized coefficients ranging from .73 to .82 (M = .79, SD = .04) for the Academic Press factor, .57 to .80 (M = .70, SD = .09) for the Academic Motivation factor, and .65 to .90 (M = .80, SD = .11) for the School Connectedness factor. Squared multiple correlations averaged .62 (SD = .06) for the Academic Press factor, .50 (SD = .12) for the Academic Motivation factor, and .65 (SD = .17) for the School Connectedness factor. Although not presented in Table 3, correlations among the factors were all significant ($p < .05$) as well. Specifically, the completely standardized estimates were .71 for Academic Press and Academic Motivation, .50 for Academic Press and School Connectedness, and .57 for Academic Motivation and School Connectedness.

The cross-validation sample was comprised of both boys (n = 179) and girls (n = 190). To assure measurement equivalence (i.e., invariance) between these groups, we conducted a multiple group analysis. We started by testing a model specifying configural invariance between males and females. This model specifies that the items load on the same factors across

Table 3. Completely Standardized Factor Loadings and Uniqueness From Final CFA Model

Item	Academic Press	Academic Motivation	School Connectedness	Uniqueness
1. My teachers provide helpful feedback to students about their academic performance.	.82	—	—	.33
2. Decisions at my school always focus on what is best for learning.	.73	—	—	.46
3. My teachers monitor whether students are learning on a regular basis.	.78	—	—	.39
4. My school values students' learning.	.81	—	—	.34
5. I am confident in my ability to manage my school work	—	.69	—	.53
6. I feel my school experience is preparing me well for adulthood	—	.76	—	.42
7. I have enjoyed my school experience so far	—	.80	—	.36
8. I have a positive attitude toward school	—	.77	—	.40
9. I like the challenges of learning new things in school	—	.63	—	.60
10. I feel I have made the most of my school experiences so far	—	.57	—	.67
11. I am proud to be a student at my school.	—	—	.90	.18
12. I feel like I belong to my school.	—	—	.83	.31
13. I enjoy coming to my school.	—	—	.82	.33
14. I have meaningful relationships with teachers at my school.	—	—	.65	.58

Note. All parameter estimates are significant ($p < .05$). — indicates a parameter that was not estimated.

groups but all factor loadings, factor variances, factor covariances, and item uniquenesses are freely estimated across groups. The overall fit of this model was good, S-B $\chi^2 = 180.26$, $df = 151$, $p < .01$, RMSEA = .032 (90% CI = [.000, .049]), CFI = .99, GFI = .92. We then compared this model to one that specified complete invariance between males and females. Specifically, we constrained the factor loadings, factor variances, factor covariances, and item uniquenesses to be equal across groups. The overall fit of this model was still reasonably good, S-B $\chi^2 = 221.21$, $df = 179$, $p < .01$, RMSEA = .036 (90% CI = [.016, .051]), CFI = .99, GFI = .90. A comparison of the model fit using the SDCS indicated a nonsignificant decrease in fit when constraining invariance in parameter estimates across groups (SDCS = 41.45, $df = 28$, $p = .05$). Given this, along with the overall fit of the completely invariant model, our results provide reasonable evidence that the 14-item PSES functions similarly for males and females.

Next, we were interested in examining whether it was reasonable to conclude that a single higher order factor could account for the covariation of the three latent variables. In other words, we wanted to test whether the Academic Press, Academic Motivation, and School Connectedness factors were represented by an Overall Perceived School Experiences factor. With three latent variables, testing a model with a single second-order factor is just identified, and therefore the overall fit of the model is identical to the third model where the three first-order factors were allowed to covary. However, it is still meaningful to examine the magnitude and significance of the higher order factor loadings (Brown, 2006). The results of this model testing revealed that each first order factor significantly and positively loaded on the second order, Overall Perceived School Experiences factor. Specifically, the completely standardized factor loading estimates were .79, .90, and .64 for Academic Press, Academic Motivation, and School Connectedness factors, respectively. The completely standardized disturbances indicate that the second-order factor accounted for 62%, 81%, and 49% of the variance in Academic

Press, Academic Motivation, and School Connectedness, respectively. This suggests that an Overall School Experience Score can be calculated and used.

Finally, means and standard deviations for the Overall PSES ($M = 3.55$, $SD = .77$), the Academic Press Scale ($M = 3.48$, $SD = .92$), the Academic Motivation Scale ($M = 3.71$, $SD = .84$), and the School Connectedness Scale ($M = 3.38$, $SD = 1.06$) were calculated. These scores indicate that the students in the sample had relatively positive views of their school experiences with mean scores all above the scale midpoint. Nevertheless, there was a fair degree of variability in the scores suggesting that both positive and negative views were reported. We also examined the internal consistency estimates for the three factors using Cronbach's α coefficients. Each factor demonstrated adequate reliability ($\alpha = .87$ for Academic Press, .86 for Academic Motivation, and .88 for School Connectedness).

Study 2

Overall, the results from Study 1 provide evidence that the PSES possesses a reasonable degree of factorial validity. Our goal in Study 2 was to expand on the demonstration of the scale's overall construct validity. Specifically, the purpose of this study was to establish the test–retest reliability and predictive validity of the scale.

Method

Instrumentation. The 14-item PSES developed in Study 1 was used in this study. Again, respondents answered on a 5-point Likert-type scale, where 1 = *strongly disagree* and 5 = *strongly agree*. A modified version of Anderson-Butcher and Conroy's (2002) 5-item Belonging Scale was used in this study to establish predictive validity. Items in the scale were modified so that the point of reference was the school. Original scale

Table 4. Descriptive Statistics for the Overall Perceived School Experiences Scale and the Three Subscales in the Time 1 and Time 2 Samples

Scale	Study 1 CFA		Study 2 Time 1/Time 2		
	M (SD)	α	M	SD	α
Overall Perceived School Experiences Scale	3.55 (.77)	.90	4.25/4.26	62/.68	.94/.96
School Connectedness Scale	3.38 (1.06)	.88	4.29/4.31	.68/.83	.85/.95
Academic Motivation Scale	3.71 (.84)	.86	4.24/4.27	.66/.66	.89/.92
Academic Press Scale	3.48 (.92)	.87	4.19/4.19	.75/.83	.91/.95

Table 5. Test–Retest Reliability for the Perceived School Experiences Scale and the Three Subscales

Scale	r
Perceived School Experiences Scale	.89
School Connectedness Scale	.84
Academic Motivation Scale	.83
Academic Press Scale	.83

Note. All correlations were significant at $p < .01$.

items referenced an individual program. An example of one modified item for this study was "I am accepted at my school." Respondents answered items in the Belonging Scale on a 5-point rating scale, where 1 = *Not at all true* and 5 = *Really true*. We also used the 4-item Perceived Social Competence Scale (PSCS; Anderson-Butcher, Iachini, et al., 2008) to establish predictive validity. Respondents answered the PSCS on a 5-point rating scale, where 1 = *Not at all* and 5 = *Very much*.

Procedures. The PSES, the Belonging Scale, and the PSCS were administered to students in an alternative high school as part of a broader risk and protective factor assessment. Researchers visited the school to recruit participants during a school assembly. Potential participants under 18 years old were given parent permission forms to take home. Those over 18 years old also were given consent forms. As part of the recruitment process, students who returned their parent permission or consent forms were entered into a drawing to win one of 20 $5 gift cards to a local department store. Researchers returned to the school on two separate occasions to administer the survey. On the first occasion (Time 1), students completed the entire risk and protective factor assessment. The second data collection occasion (Time 2) occurred 3 days after Time 1. At that time, the same students completed the entire assessment again. Participants received a $5 gift card incentive on each occasion of data collection. All procedures were approved by a human subject's institutional review board.

Participants. The sample for Study 2 included 97 students from an alternative high school located in a rural area of a large Midwestern state. Three participants were in grade 9 (3.1%), 9 in grade 10 (9.3%), 17 in grade 11 (17.5%), and 68 in grade 12. In relationship to age, 1.0% of students reported being 15 years old, 4.1% reported being 16 years old, 24.7% reported being 17 years old, 45.4% reported being 18 years old, and 20.6%

reported being 19 years old. Four students reported being 20 years old or older. The majority of participants identified themselves as Caucasian (79.4%), followed by African American (9.3%), Mixed Race (9.3%), Latino/Latina (1.0%), and Other (1.0%). Of the students, 49 students reported as male (50.5%) and 48 reported as female (49.5%). Over half of the students (52.5%) reported living in a single-parent home, while 22.7% reported living with both parents and 24.7% reported living with someone other than a parent.

Analytical approach. Correlational analyses were used to examine the test–retest reliability of the PSES. In addition, predictive validity was established by exploring the relationship between the Overall Perceived School Experiences measure and each of the three individual subscales with two different outcome variables, perceived belonging and perceived social competence.

Results

Test–retest reliability. The Overall PSES, and each of the three subscales, demonstrated stability over time. Means and standard deviations for all three subscales and the Overall Perceived School Experience Scale in both the Time 1 and Time 2 samples are presented in Table 4. Table 5 presents the correlations between Time 1 and Time 2 scores on each of the measures. These test–retest correlations, all of which were greater than or equal to .83, indicate that the scores on the PSES are fairly stable over a short period of time.

Predictive validity. We also sought to establish initial evidence of the predictive validity of the Overall PSES and each of the three individual subscales using the Time 2 sample. To do this, we correlated the Overall PSES mean and each of the three individual subscale means with perceived belonging ($M = 4.24$, $SD = .87$) and perceived social competence ($M = 3.91$, $SD = .91$). We expected the PSES to correlate positively with perceptions of belonging, particularly as students' enhanced perceptions of their school experiences would likely relate to whether they felt a sense of belonging to the overall school (Archambault et al., 2009). We also expected a positive relationship between the PSES and perceived social competence, particularly as research suggests that increased student perceptions regarding their school experiences are related to fewer discipline occurrences (Hawkins et al., 2001), reduced engagement in risky behaviors (Loukas et al., 2006; Resnick et al.,

1997; Wilson, 2004), and decreased perceptions of anxiety (Gottfried, 1990). As expected, the Overall PSES, the School Connectedness scale, the Academic Motivation scale, and the Academic Press scale means positively and significantly ($p < .01*$, $p < .05**$) correlated with participants' perceptions of belonging ($r = .58*$, $r = .56*$, $r = .46*$, $r = .59*$, respectively) and perceptions of social competence ($r = .33**$, $r = .24*$, $r = .33**$, $r = .28**$, respectively).

Discussion

The purpose of these two studies was to develop an empirically sound, easily administered measurement tool that assesses students' perceptions of their school experiences for use in social work practice. Factorial validity for the Overall PSES and each of its three subscales (academic press, academic motivation, and school connectedness) were established. Additionally, tests for gender invariance indicated that the scale worked equally well for males and females.

Resultant items for the three factors and overall scale are presented in Table 3. In the end, the School Connectedness scale is comprised of 4 items; the Academic Motivation Scale includes 6 items; and the Academic Press Scale has 4 items. Each of the subscales may be used individually to monitor progress and student need. (See Table 4 for descriptive statistics of all components of Study 1 and Study 2.) Another benefit of this tool is that the three individual subscales together create an Overall PSES. Specifically, findings from this research support an overall, higher-order factor comprised of 14 items representing overall school experiences.

Additionally, test–retest reliability was established, indicating the relative stability of the overall tool and the three individual subscales over time. The Overall Perceived School Experience Scale and its subscales also demonstrated good initial predictive validity, correlating positively with perceived belonging and social competence.

Implications

For those working with children and youth in school settings, the PSES and its three subscales may help school social workers, educators, and other student support personnel begin to more strategically target interventions aimed at the enhancement of school experiences among the children and youth they serve (Brooks, 2006). For example, increasing emphasis on Response to Intervention (RtI; Clark & Alvarez, 2010) points to specific uses of the PSES. RtI's focus on data-based decision making highlights the importance of appropriate screening mechanisms and tools to identify students who might be at risk of poor academic outcomes. The PSES is a screening tool that school social workers and others may use to determine baseline levels of students' school experiences to identify those at risk, and guide individual- or group-level interventions. The PSES also may be used to track progress-over-time, therefore serving as an important tool useful for progress monitoring.

Additionally, school social workers and other leaders may use aggregate data across the student population to design classroom, group, and school-wide interventions that specifically target areas in need of improvement. Likewise, district and school improvement teams may deepen their priorities by addressing broader needs identified by the PSES and tracking changes in these areas over time. Research clearly points to the importance of these constructs and their relationship to positive youth development and academic achievement.

School social workers and others also may use this tool to measure outcomes associated with interventions, as changes in perceptions of school connectedness, academic motivations, academic press, and overall school experiences are examined over time from baseline to post-intervention. Indeed, documentation of student perceptual changes in school experiences will be increasingly important for establishing the contributions of school social work practice to student learning and development.

Administrators and policymakers also may have an interest in this tool. Movement in federal policy encourages schools to examine the "other side of the report card." In other words, schools are encouraged not to just focus on academic and behavioral indicators. Future policy may indeed hold schools accountable for creating safe, supportive learning environments. Schools will need to have accessible measurement tools available to establish their effectiveness in this area. The PSES will likely serve as a useful, reliable, and valid tool, as schools and districts continue to implement decision-making frameworks focused on data and continuous improvement, such as RtI.

Limitations

Although this tool may be useful in the field, several limitations exist in relation to its applicability and development. The PSES measures students' self-reported perceptions of school experiences. The use of self-report by children and youth to report on experiences is supported by Danielson and Phelps (2003). Some argue, however, that parent/guardian, teacher, and/or practitioner reports are valuable because they provide an outsider perspective. Adult ratings may, however, involve reporting biases (Danielson & Phelps, 2003; Youngstrom, Loeber, & Stouthamer-Loeber, 2000). Ideally, tools would be created that measure multiple stakeholder perspectives. Also in relation to applicability, this tool may have a limitation in regard to external validity. Although both the calibration and the cross-validation sample are relatively similar in demographics, the test–rest reliability and predictive validity was conducted on a sample of students from an alternative school setting. Further research will be needed to confirm the applicability of the PSES and the generalization of these findings to other demographic settings.

Furthermore, the PSES is brief in nature. Researchers suggest that the constructs measured by the tool are actually quite complex (Lee & Smith, 1999; Shouse, 1996) and may call for a more comprehensive assessment of students' experiences and perceptions. Other variables central to school experiences

(such as teacher expectations or sense of community) are not included in the PSES.

Finally, some caution should be noted in terms of the test–retest reliability of the PSES. The scores from Study 2 were found to be quite stable over time; however, there remains the possibility that this was potentially due to a carryover effect, given the short time interval used in our design (i.e., a 3-day interval). While the short interval helped to minimize the chance of any real change in the students' perceptions of their school from occurring, our results should be interpreted with some caution and future research with a longer time interval between administrations would be desirable in terms of further establishing the reliability of the scale over time.

Conclusion

Future research related to the ongoing establishment of the psychometric properties will help further demonstrate the utility of the PSES. It will be important to examine the scale's properties in different environments and school settings, to ensure the validity of the tool across diverse student populations. In addition, more research is needed to assess the use of the PSES to measure change over time. There also may be benefits in providing further predictive validity evidence by determining how perceived school experiences as measured by the PSES is related to other important outcomes associated with healthy youth development, such as school attendance, number of referrals for behavioral challenges, and other youth problem behaviors (i.e., academic failure, substance use, etc.).

Nonetheless, it is important for school social workers and other school leaders to have easily administered, accessible, and inexpensive tools available to measure students' perceptions of their school experiences. The PSES represents a brief tool (consisting of 14 items) with established psychometrically sound properties. It is useful for supporting school social workers and others as they develop goals for treatment and interventions. The PSES also measures outcomes associated with practice, helping to establish the contributions of school social work practice to the overall school.

Declaration of Conflicting Interests

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