The Role of Sociability Self-Concept in the Relationship between Exposure to and Concern about Aggression in Middle School

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Abstract

This study examined middle grades students' sociability self-concept and their perceptions about feeling safe at school. Participants' ($N = 420$) exposure to school aggression and concern about the potential for violence at school were measured across four critical areas: fighting, bullying, stealing, and seeing weapons. Results indicated a limited exposure to school aggression for these young adolescents. However, students who did report seeing more aggression at school also tended to be more concerned about aggressive incidents occurring. The prediction of concern by exposure was stronger among students low in sociability self-concept and weaker for those high in sociability self-concept. Sociability self-concept, thus, appeared to be a protective factor, in that sociability self-concept buffered the effect of exposure to aggression on concern about violence at school. These results highlight the importance of attending to sociability self-concept during early adolescence in our efforts to reduce concern about aggression in the middle grades school environment.

School violence appears to be on the decline. Mayer (2010) reported that violent incidents have leveled off, while the Centers for Disease Control data from the *Youth Risk Behavior Survey* revealed a significant decrease in school violence from 1993 to 2005 (Dinkes, Kemp, & Braum, 2009). These reports indicate that schools have become safer places in which school crime is relatively stable (DeVoe, Peter, Noonan, Snyder, & Baum, 2005), and students can focus on their academic endeavors. However, while students are currently less likely to be directly exposed to school violence, safety and security remain pressing issues (Mayer & Furlong, 2010).

Student exposure to violence and harm at school can include direct victimization as well as witnessing the victimization of others; both greatly affect school climate. Further, research indicates that students who experience vicarious or low-level aggression, such as intimidation, also suffer harmful psychosocial effects (Nasel et al., 2001). The *Indicators of School Crime*

and Safety (Dinkes, Kemp, & Braum, 2009) indicated that less aggressive acts were more prevalent than more severe violence at school. This report, based on a variety of independent data sources, also noted the types of aggression students most likely encounter in the school environment: fighting, bullying, stealing, and seeing weapons. Thus, educators wishing to reduce aggression at school might focus on these four critical areas.

According to The U.S. Department of Education's National Center for Educational Statistics (2006), student aggression toward others is often identified in elementary school, with exposure becoming more frequent and severe during the middle grades. For example, in a large sample of middle grades students, Flannery, Wester, and Singer (2004) reported that 79% of the students had witnessed fighting, with 81% indicating they saw peers being threatened at school. It is not surprising that dealing with school violence is ranked as a top concern among adolescents (Burnham, 2009).

Adolescence has long been recognized as a transitional time (Eccles et al., 1993) full of opportunity and vulnerability, in which youngsters are confronted with rapid developmental changes and social role redefinition. Social functioning becomes very important, as bonds with parents are transformed and relations with peers take on new meaning (Eisenberg, Neumark-Sztainer, & Perry, 2003). Conception of self is very much in focus (Ybrandt, 2008) as young people self-examine to determine who they really are (Steinberg & Morris, 2001) and how they fit into their world. The development of the socially integrated perceptions of self typically occur during adolescence (Sebastian, Burnett, & Blakemore, 2008), and an abundance of research has focused on social contextual factors believed to affect middle level students who deal with aggression at school. For example, Tarrant, MacKenzie, and Hewitt (2006) applied a social identity perspective when studying adolescent friendship group association within the context of self-concept. They discussed the potential benefits of understanding adolescents' subjective perceptions of peer relationships, as they relate to aggression. Harvey (2007) advocated the development of positive peer relationships and prosocial behaviors at school to promote resiliency to school violence. Malecki, Demaray, and Davidson (2008) expanded the notion of peer support to social support, which included support from parents, teachers, classmates, friends, and the school. Following this line, social support

has played a mediating role in the victimization-to-personal adjustment relationship (Malecki & Demaray, 2004) and served as a moderator between adolescent victimization and distress (Davidson & Demaray, 2007). These studies highlight the importance of the social support given to middle graders by significant others. However, the salience of such support may depend on the sociability self-concept of that adolescent.

Sociability Self-Concept

Global self-concept refers to the overall extent to which one values oneself; however, individuals may also hold more differentiated beliefs in specific domains of functioning (Harter, 1996). For example, a student's self-evaluation in the academic domain may differ from a self-evaluation in the social domain. Whereas global conceptions of self remain fairly stable (Shavelson & Bolus, 1982), domain-specific conceptions can be influenced by contextual experiences and by significant others. Prior research has noted young adolescents' self-concepts in the areas of social skills are particularly fluid and receptive to both positive and negative influences (Rice & Dolgin, 2005). Indeed, young adolescents are particularly vulnerable to changes in self-concept (Baldwin & Hoffmann, 2002); thus, sociability self-concept is an important construct that should be addressed. In general, sociability is a preference for being in the company of others versus being alone (Cheek & Buss, 1981) and is based on the extent to which a student prefers to have many social relationships (Mounts, Valentine, Anderson, & Boswell, 2009). Even within the context of adolescence, when peer relations become increasingly important, sociability self-concept appears to vary across individuals (Bokhorst, Sumter, & Westenberg, 2010). In this study, sociability self-concept refers to a student's social predisposition. Thus, a student low in sociability self-concept would prefer more social distance, while a student high in sociability self-concept would tend to seek and encourage many close social interactions.

The current study was designed to determine the relation between middle level students' exposure to school aggression and concern about violence in the four previously noted critical areas. The data were analyzed with exposure to aggression as a predictor of concern about violence occurring, with student sociability self-concept moderating this relationship. That is, the effect of exposure on concern at differing levels of sociability self-concept was considered within

a regression framework. The research addressed two questions: (1) Is exposure to school aggression significantly related to concern about the potential for violence in the four noted areas? and (2) If exposure influences concern, is that effect contingent on students' perceptions of sociability self-concept?

Method

Participants and Procedure

Study participants included seventh (*n* = 225) and eighth (*n* = 195) grade students attending one Midwestern public middle school. The rate and types of violence reported at this school were unknown, with educators seeking this information. Given the suburban nature of the community, the risk of exposure to aggression was presumed to be lower than in urban communities (Katz & Lang, 2003). The 204 females and 216 males were predominantly white and middle class. All students enrolled in the general education homeroom period were invited to participate. Teachers distributed parent/ guardian participation consent forms in class for the students to take home. This form specified the purpose and procedures of the study, the voluntary nature of participation, and the confidentiality of all responses. Participants responded anonymously to questionnaires assessing perceived sociability self-concept and school safety during their regularly scheduled first period class. In all, 420 of the 518 eligible students participated; the remaining did not have parental permission to participate or were unavailable or unwilling to take part in the study.

Measures

The *SSSQ: School Safety and Security Questionnaire* (Miller & Nickell, 2008) is a tool for assessing student perceptions in the middle grades school environment. This measure provides educators with a tool to gather school-specific information, which can serve as a guide for educational practitioners in developing appropriate programs and interventions to deal with safety and security issues at the local level. The questionnaire has undergone extensive modifications (Miller & Nickell, 2007) and easily can be personalized for use in site-specific applications. The psychometric properties of the measure have been evaluated, with Miller and Nickell (2008) providing strong support for the reliability and validity of student scores on the measure. The factor structure clearly reflected the theoretical conceptual structure, which is related to important aspects of school safety research and practice.

The *SSSQ* includes items that ask students to "rate your level of concern regarding incidents that could occur at your school" in the specific areas of fighting, stealing, bullying, and seeing weapons. The survey also asks students to report actual occurrences of aggression in these four critical areas. All items were rated along Likert-type scales that ranged from 1 to 5, where higher scores indicated greater student concern with, and actual exposure to, aggression at school. The reliability of the scores was assessed for this student sample, and the obtained coefficients supported internal consistency reliability for the scores from these item sets; concern α = .81, experience α = .71. A continuous "exposure" and "concern" variable score for each student was computed by summing individual item scores across the four types of aggression, with scores ranging from 4 to 20.

Sociability self-concept was measured with the *MTS: Multidimensional Test of Self-Concept* (Lathrop, 1988), developed to tap an individual's perceptions of their current state of self-concept in three domains (sociability, competence, and dependability). This instrument was specifically designed to assess nonacademic self-concept, in contrast to many self-concept measures that stress overall or academic self-concept. The scales, based on social influence processes in counseling, were designed to measure dimensions of self-concept that have direct clinical relevance. The scales were standardized on junior and high school students, college students, working adults, and retirees (Lathrop, 1986).

Given the importance of peer relations during adolescence, the current study used only the sociability subscale. The instrument was developed to allow for the use of the individual subscales. As such, the reliability and validity of the sociability self-concept scale has been supported. This six-item scale is reported to have good reliability, as noted through generalizability (.863) and internal consistency (.843) alpha coefficients (Lathrop, 1987). In addition, Lathrop (1987) reported an adequate test-retest stability coefficient (.66) with a three-month delay. Confirmatory factor analyses using LISREL statistical software and correlations with other established self-concept measures have been cited in support of the construct validity of the sociability self-concept subscale.

Students responded to six *MTS* items using a 7-point graphic rating scale, with half the items reverse-scored. Students were instructed to "Please rate yourself as you really are," with two adjectives

anchoring the end points of each bipolar item. Summed responses could range from 6 to 42 with higher scores indicating greater sociability self-concept. The coefficient alpha calculated with the middle school data in the current study was .74, suggesting acceptable internal consistency reliability for the scores from this student sample.

Results

Preliminary Analyses: Exposure-to-Concern Relationship

With respect to student exposure to, and concern about, school aggression, ANOVAs (see Table 1) yielded non-significant sex and grade differences. Table 2 presents the supporting exposure and concern means and standard deviations for girls and boys by grade. Overall, the exposure mean was 6.46, while the average concern reported by students was 10.63. As shown in the table, the standard deviation values for concern were larger, which suggests a greater variability in the student concern ratings relative to the exposure ratings.

Given the non-significant sex and grade differences, the analyses proceeded with the full student sample. Table 3 presents item-level descriptive statistics for the three variables of interest. Pearson correlation coefficients indicated that, though the relationship between sociability and exposure reached statistical significance ($r = -.122$, $p = .024$), the relationship between sociability and concern did not ($r = -.061$, ns).

The exposure-to-concern association ($r = .621$, $p < .001$) suggested that, overall, students who tended to report more exposure to school aggression also tended to voice serious concern about violence at school. On the whole, personal experience with violence shared about 39% of the variability in concern about aggressive incidents occurring at school. Exposure-to-concern bivariate correlations were also computed in each of the four critical areas. Each of the *r* values reached statistical significance, fighting = .20, stealing = .33, bullying = .33, weapons = .19, each with $p < .001$. In every area, students encountering more aggression at school expressed higher levels of concern about the potential for school violence, with shared variance averaging about 7%.

Table 1
ANOVA Summary Tables for Concern and Exposure with Sex, Grade, and Interaction

		Concern						Exposure			
Source	SS	df	MS	F	sig	Source	SS	df	MS	F	sig
Sex	10.02	1	10.02	0.66	.419	Sex	2.33	1	2.33	0.32	.573
Grade	2.22	1	2.22	0.15	.704	Grade	20.79	1	20.79	2.88	.090
S * G	6.38	1	6.38	0.42	.519	S * G	13.59	1	13.59	1.88	.173
Error	6308.04	416	15.16			Error	3009.07	416	7.23		
Total	6326.66	419				Total	3045.78	419			

Table 2
Descriptive Statistics by Sex and Grade

	Male				Female			
	7th (*n=111*)		8th (*n=105*)		7th (*n=114*)		8th (*n=90*)	
	Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)
Exposure	5.92	(2.58)	6.70	(2.65)	6.55	(2.68)	6.69	(2.74)
Concern	10.59	(3.77)	11.26	(4.66)	10.50	(4.14)	10.42	(4.07)

Table 3
Item-level Descriptive Statistics for Sociability Self-concept, Exposure, and Concern

Sociability self-concept
Please rate yourself as you really are

	Mean	Standard Deviation
unfriendly –friendly	6.28	1.17
close – distant	2.68	1.56
depressed – cheerful	5.40	1.48
enthusiastic – indifferent	2.38	1.52
incompatible – compatible	5.65	1.48
sociable – unsociable	2.05	1.33

Exposure
This school year, how often have you

	Mean	Standard Deviation
been in fights at school?	2.46	1.18
had money or belongings stolen from you?	2.83	1.16
been threatened by a bully?	2.50	1.21
seen others carrying weapons?	2.85	1.35

Concern
Please rate your level of concern regarding incidents that could occur at your school

	Mean	Standard Deviation
fighting	1.47	.90
stealing	1.85	1.09
bullying	1.72	1.09
seeing weapons	1.60	1.03

Exposure on Concern Moderated by Sociability

A standard multiple regression analysis was conducted, with concern about violence serving as the outcome variable. The predictor variable (exposure to aggression) and the moderator variable (sociability self-concept) were centered based on procedures recommended by Aiken and West (1991) and Jaccard, Turrisi, and Wan (1990). As a set, the R^2 indicated that these predictors accounted for about 10% of the variance in student concern, $F(2,417) = 24.30$, $p < .001$, with only exposure reaching statistical significance, $t(417) = 6.87$, $p < .001$. A second multiple regression analysis was conducted, which added the centered exposure-sociability interaction term. The R^2 indicated that this model accounted for about 12% of the variance in student concern, $F(3,416) = 18.20$, $p < .001$. Exposure was statistically significant, $t(416) = 6.89$, $p < .001$, as was the two-way interaction, $t(416) = 2.34$, $p = .020$. Table 4 presents the regression results.

Experts have noted the difficulty in detecting an interaction effect within a regression framework (Pedhazur & Schmelkin, 1991; Wampold & Freund, 1987). Champoux and Peters (1987) and Chaplin (1991) reported that interactions in moderated regressions typically account for about 1% to 3% of the variance, which is consistent with the 2% uncovered in the current study. The statistical significance of the interaction coefficient noted here revealed that the relationship between concern and exposure varied across the range of sociability values. Without the interaction, it might have been concluded that sociability self-concept did not significantly influence student concern about aggression at school. After all, sociability self-concept failed to reach significance in both regression analyses.

Table 4
Hierarchical Multiple Regression Predicting Concern, N = *420*

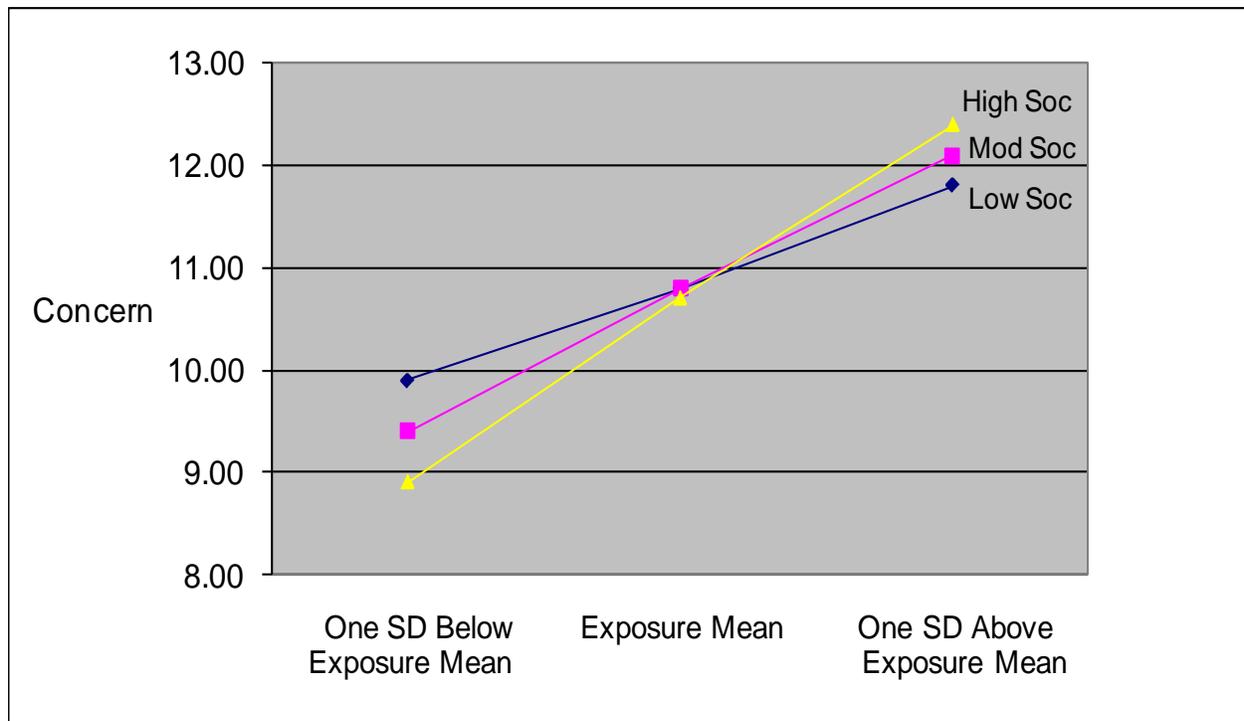| Variables	b	SE	Standardized β	t	sig
Block 1:					
Sociability	-.016	.034	-.022	-.46	.643
Exposure	.501	.073	.320	6.87	.000
Block 2:					
Sociability	-.019	.034	-.026	-.56	.573
Exposure	.500	.073	.319	6.89	.000
Interaction	.027	.011	.108	2.34	.020

Figure 1 *Sociability self-concept by exposure to aggression interaction*

Following Cohen and Cohen (1983) and Aiken and West (1991), the nature of the interaction of sociability self-concept and exposure was explored by plotting the results. Specifically, a series of simple regression equations measuring the relationship between concern and exposure were generated at fixed sociability values: one standard deviation above the mean, at the mean, and one standard deviation below the mean (see Figure 1). Significance tests indicated the simple slopes significantly differed from zero among students with a high level of sociability self-concept, $b = 0.65$, $\beta = .42$, $p < .001$; for those at an average sociability level, $b = 0.50$, $\beta = .31$, $p < .01$; and for those at a low level of sociability, $b = 0.35$, $\beta = .22$, $p < .001$. This pattern of results suggests that as sociability self-concept increased, the relationship between exposure and concern tended to decrease. That is, the prediction of concern by exposure tended to be stronger when sociability self-concept was low and weaker when sociability self-concept was high. This is shown in Figure 1, where exposure to aggression had a strong effect on concern at low sociability, as indicated by the steep regression line. This effect was lessened somewhat at the average level of sociability, as indicated by the moderately increasing regression line. Finally, there was a weaker prediction of concern by exposure when sociability self-concept was high, as indicated by the regression line showing less slope.

Discussion

These adolescents tended to report low levels of exposure to aggression at school, a finding that is consistent with recent research (Mayer & Furlong, 2010). Evidently, this middle school was perceived as basically safe by these young adolescents, which mirrors trend data indicating that school crime and disruption is on the decline (Dinkes, Kemp, & Baum, 2009). Also in line with other published data (e.g., Walcott, Upton, Bolen, & Brown, 2008), sex did not appear to significantly influence aggression. While there is wide consensus that boys are involved in serious violence more often than girls, the role of sex in less serious forms of aggression still needs to be fully explored (Astor, Guerra, & Van Acker, 2010). Adding grade further complicates this situation. Victimization has been related to grade level in the past (Rooney et al., 2006); however, grade-specific differences in reported exposure to or concern about aggression were not found in this study. Although the restricted age range may have limited the effect of grade, these findings may provide potentially useful insights into young adolescents' perceptions of safety at school. Having an enhanced understanding of the importance of sociability self-concept can help inform those responsible for school-based preventative interventions. More specifically, programming aimed at reducing concern about violence at school

might not need to differentiate students by sex or by grade. If this is the case, educators could incorporate modules to strengthen sociability self-concept into interventions that would be appropriate for both girls and boys in this age range.

As anticipated, exposure and concern were related; adolescents with higher levels of exposure to aggression were inclined to report more concern about aggression occurring, and those with less exposure reported less concern. This was particularly true for stealing and bullying, which have been noted as prevalent in school settings (Mayer & Furlong, 2010). The wide gap between the overall average exposure (6.46) and concern (10.69) ratings in the current study revealed that, although these adolescents did not experience much aggression at school, they did report being concerned about the potential for aggressive incidents to occur. This finding suggests that these adolescents may have held unrealistic perceptions of risk. Burnham's (2009) research indicates that adolescents' fears have changed over time. Current concerns about school violence may be due, in part, to the extensive media coverage of events such as school shootings and bully-based suicide. Television, radio, and Internet coverage of such events may have sensitized youth to violence and compromised their feelings of safety at school. Indeed, research indicates that students who are concerned about aggressive incidents at school tend to hold lower safety perceptions (Boxer, Edwards-Leeper, Goldstein, Musher-Elizenman, & Dubow, 2003). As suggested by the cumulative stress hypothesis (Sameroff, 2001), continual sensationalized media coverage may amplify students' fears, with consequences that can affect learning and the enjoyment of school.

The central finding of the study was that the influence of exposure on concern was moderated by sociability self-concept. That is, the prediction of concern by exposure was stronger among students with low sociability self-concept and weaker for those reporting high sociability. Sociability self-concept, thus, appeared to be a protective factor, in that exposure was less predictive of concern for those with high sociability self-concept. This finding parallels research focusing on social support. For example, Malecki and Demaray (2004) identified social support as a buffer against negative outcomes for student victims of bullying. They further demonstrated a strong link between perceptions of self and the frequency and importance of social support (Demaray, Malecki, Ruegar, Brown, &

Summers, 2009). The resilience literature indicates that resiliency results from many positive social relationships (Harvey, 2007) and that stressful situations are tempered for those with many strong perceptions of social support (Luthar & Zigler, 1991). In this study, sociability self-concept also appeared to serve as a protective factor, as the concern of students reporting a strong sociability self-concept was less likely influenced by exposure to aggression. This highlights the importance of attending to adolescents' sociability self-concept, particularly during early adolescence when social skills are fluid and open to both positive and negative influences (Rice & Dolgin, 2005; Schunk, 2000). Teachers could enable adolescents to interrelate more effectively by modeling and encouraging social behaviors such as cooperation, responsibility, and self-control. Teacher support has been positively associated with student social skill adjustment, even for high-risk children (Brophy-Herb et al., 2007), and curricula are available to teachers who wish to improve middle grades students' social competence (Consortium on the School-based Promotion of Social Competence, 1996). In addition, school counselors could intervene with adolescents to assist them in enhancing their social skills while creating an environment of support for all students.

There is consensus that constructs involving "self" should be clearly operationalized (Demaray et al., 2009). Domain-specific self-concepts have been linked to crucial school outcomes, such as motivation and achievement (Schunk, 2000), and now to perceptions of school aggression. These results add to the growing body of literature highlighting the need to clarify self-concept constructs while highlighting the need to expand our understanding of how sociability self-concept relates to other self mechanisms within the school setting.

Limitations
Several limitations should be noted. First, this study was conducted in a single suburban middle school, and although the results are consistent with other studies of peer aggression, replication with a diverse sample of middle grades students would strengthen the findings reported here. Further, similar to many investigations of adolescents, this research relied on anonymous self-administered surveys. Although self-report measures do tap the perceptions of those being studied, these young adolescents reported their perceptions, which may or may not concur with what the adults in this educational setting would have reported. Future research might include reports of

aggressive behavior and disorder as noted by adults or from official school records or police calls for service.

Another limitation is the cross-sectional nature of the data; conclusions are limited to temporal associations, with causal inferences remaining beyond the scope of this study. Finally, given the nature of the variables under study, students may have responded inaccurately, for example to impress others with their exposure or to hide concern. If this was the case, social desirability bias may have confounded the results presented here.

Conclusion

This study provides one step toward developing an understanding of the influence of sociability self-concept on adolescents' perceptions of school safety. Compared with other groups, adolescents are especially susceptible to fluctuations in self-concept (Parker, 2010). This developmental stage is characterized by multiple biological and social changes (Eccles et al., 1993), and educators may misjudge the effect of exposure on concern about aggression by not considering sociability self-concept. Social self-concept is a key construct, as it influences middle grades students' interactions with teachers, peers, and others in the school environment and the students' approach to conflict resolution (Peetsma, Hasher, van der Veen, & Roede, 2005). The current study examined sociability self-concept as a factor that can be targeted through school-based interventions to reduce the risk of concern about aggression in suburban middle schools. Many types of violence prevention programs currently exist for middle grades students (Farrell, 2009). However, implementing supportive programs that include sociability self-concept could eliminate the need for school personnel to identify or potentially stigmatize young adolescents with high levels of exposure to school aggression.

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