Eastern Illinois University
The Keep

Faculty Research and Creative Activity | Psychology

1-2015

INDIRECT EFFECTS IN THE PEER VICTIMIZATION-ACADEMIC ACHIEVEMENT RELATION: THE ROLE OF ACADEMIC SELF-CONCEPT AND GENDER

Lyndsay N. Jenkins
Eastern Illinois University

Michelle Kilpatrick Demaray
Northern Illinois University

Follow this and additional works at: http://thekeep.eiu.edu/psych_fac

 Part of the Psychology Commons

Recommended Citation
Jenkins, Lyndsay N. and Demaray, Michelle Kilpatrick, "INDIRECT EFFECTS IN THE PEER VICTIMIZATION-ACADEMIC ACHIEVEMENT RELATION: THE ROLE OF ACADEMIC SELF-CONCEPT AND GENDER" (2015). *Faculty Research and Creative Activity*. 39.
http://thekeep.eiu.edu/psych_fac/39

This Article is brought to you for free and open access by the Psychology at The Keep. It has been accepted for inclusion in Faculty Research and Creative Activity by an authorized administrator of The Keep. For more information, please contact tabruns@eiu.edu.

INDIRECT EFFECTS IN THE PEER VICTIMIZATION-ACADEMIC ACHIEVEMENT RELATION: THE ROLE OF ACADEMIC SELF-CONCEPT AND GENDER

Lyndsay N. Jenkins and Michelle Kilpatrick Demaray

Abstract

Peer victimization is a concern because victimized youth are more likely to have social, emotional, and academic difficulties. The current study examined the link between peer victimization and academic achievement by exploring the indirect effect of academic self-concept on two variables. The sample consisted of 140 middle school students (40% male, 60% female). Using structural equation modeling, a mediation model revealed a significant indirect effect of victimization on academic achievement through academic self-concept; however, when tested for gender differences, the indirect effect was only significant for girls. Interpretation of these results and suggestions for future studies are discussed.

Peer victimization, defined as frequent exposure to peer aggression (Olweus, 1995), is a common occurrence for many adolescents, with up to 50% of youth reporting being victimized at least once in the past 2 months (Wang, Iannotti, & Nansel, 2009). Peer victimization is a concern because researchers have found that victimized youth are more likely to have elevated levels of depression, loneliness, and anxiety (Hawker & Boulton, 2000), lower self-concept (O'Moore & Kirkham, 2001; Salmivalli, 1998), and poor academic outcomes (Beran, Hughes, & Lupart, 2008; Beran & Lupart, 2009; Juvonen, Nishina, & Graham, 2000; Totura, Karver, & Gesten, 2014). In 2000, Juvonen et al. noted that more research was needed to investigate mechanisms that might explain the negative relation between victimization and academic problems at school. More recently, a small meta-analysis (N = 33) concluded that there was still a lack of research that investigated explanations for the negative association between victimization and academic outcomes (Nakamoto & Schwartz, 2010). The negative social and emotional impact of victimization has received ample attention in the literature (Hawker & Boulton, 2000), but less is known about the academic impact and, especially, why victimization can have a negative impact on academic performance (Juvonen et al., 2000; Nakamoto & Schwartz, 2010).

The association between victimization and academic outcomes might be explained by either direct or indirect associations. Upon reviewing the literature, significant direct relationships between victimization and academic performance are found in studies that utilize school outcome indicators that tap student feelings or attitudes about school. However, when more objective academic outcomes (i.e., standardized test scores, grade point average) are used to measure direct relations, fewer studies find a significant relation between these two variables (Beran & Lupart, 2009; Graham, Bellmore, & Mize, 2006; Totura et al., 2014). This suggests that although there may be a direct relation between victimization and some measures of

academic functioning, it is more likely that victimized children experience other difficulties that could account for poorer academic outcomes.

The literature supports an indirect association between victimization and academic outcomes; however, a number of mediators have been tested. Several studies have examined potential mediators in the victimization–academic achievement relation and have commonly found that different internalizing problems mediate this relation (e.g., Graham et al., 2006; Juvonen et al., 2000; Schwartz, Gorman, Nakamoto, & Toblin, 2005). These mediation models were based on empirical findings that suggest that children who experience peer victimization are more likely to have higher levels of internalizing distress and do less well on academic outcomes. Researchers have often speculated that problem behaviors, such as withdrawal, somatic complaints, anxiety, depression, social problems, and thought problems, are serious impediments to optimal education (Barriga et al., 2002).

Academic Self-Concept

Another variable that may help to explain the relation between victimization and academic achievement is academic self-concept, which is defined as a person's belief that he or she can complete academic tasks. Academic self-concept was examined as a mediator because there is theoretical and empirical support for the relation between academic self-concept and academic achievement. Furthermore, research had demonstrated a link between victimization and lower academic self-concept. Thus, it is logical to test whether academic self-concept mediates the relation between victimization and academic achievement.

Currently, there are several achievement theories that include academic self-concept constructs, such as models proposed by Harter (1985) and Marsh and Shavelson (1985), and Eccles and Wigfield (Eccles et al., 1989; Wigfield, 1994; Wigfield & Eccles, 1992). Each of these academic self-concept theories speculate that an individual's belief about their academic abilities is related to their concurrent and future academic achievement. Eccles, Wigfield, and colleagues explored the relations among academic self-concept, mathematics, and English achievement through a series of studies among upper elementary and junior high students (Eccles et al., 1989; Wigfield, 1994; Wigfield & Eccles, 1992) and found a strong, positive relations between academic self-concept and achievement. The research described above provides strong evidence that academic self-concept is predictive of achievement (i.e., when students think they are able to do academic tasks, they are more likely to achieve academically); however, the question remains, what situations or experiences might interrupt this pattern?

Schunk, Pintrich, and Meece (2008) stated, “findings across a number of studies highlight the importance of students’ expectancies and self-perceptions of competence as mediators between the environmental or cultural context and actual achievement behavior and involvement” (p. 54). In other words, negative

environmental variables, such as the experience of peer victimization, are linked to poorer academic achievement, but this relation could be explained by lower academic self-concept (also known as perceptions of competence). Previous empirical work established internalizing distress as a viable mediator in the relation between victimization and academic achievement (e.g., Graham et al., 2006; Juvonen et al., 2000; Schwartz et al., 2005), and theoretical and empirical work suggests that academic self-concept is another likely variable (Eccles et al., 1989; Harter, 1985; Marsh & Shavelson, 1985; Wigfield, 1994; Wigfield & Eccles, 1992). Additionally, it has been established that victimized students have significantly lower levels of academic self-concept (O'Moore & Kirkham, 2001; Salmivalli, 1998). Taken together, there is significant theoretical and empirical work to suggest that academic self-concept may be a mediator in the relation between victimization and academic achievement.

Gender Differences in Study Variables

Previous research suggests that there may be gender differences in victimization and academic self-concept. Studies have consistently found that boys are physically victimized more than girls are (Nansel et al., 2001). However, discrepancies regarding relational aggression exist: some studies have demonstrated no gender differences; some studies have reported that girls are more relationally victimized (Crick & Grotpeter, 1995), although the gender difference in relational aggression is negligible compared with initial reports, according to a recent meta-analysis (Card, Stucky, Sawalani, & Little, 2008). Gender differences in academic self-concept have been noted by Eccles, Wigfield, and others. For example, Eccles et al. (1989) reported that boys have higher perceptions of competence in mathematics and girls reported higher perceptions of competence in reading and English. Phillips and Zimmerman (1990) found that these gender differences were present in ninth-grade students, but not in third- and fifth-grade students. However, Entwisle and Baker (1983) and Frey and Ruble (1987) found gender differences in early elementary students, with females having lower perceived ability, even when there were not actual skill differences.

In summary, there is evidence that boys tend to experience more physical victimization and report higher academic self-concept, but gender differences in the relation between victimization and academic self-concept have not been explored (O'Moore & Kirkham, 2001; Salmivalli, 1998). Because previous research indicates that there may be gender differences on the primary variables of the current study, it is important that gender differences be taken into consideration when examining how these variables may be interrelated.

The Current Study

Academic achievement occurs within a broad environmental context. In the school environment, students have positive and negative experiences that impact their cognitions, behaviors, and socioemotional development. Students who experience social difficulties within the school environment could experience frustration that negatively impacts their academic success (Eccles et al., 1989). For the current study, it was proposed that academic self-concept would mediate the relation between victimization and academic achievement.

The current study hypothesized that there is a significant mediated effect of academic self-concept on the association between victimization and academic success during the early adolescent period. Of studies examining indirect effects in the relation between victimization and academic outcomes, only two (Graham et al., 2006; Juvonen et al., 2000) have used an adolescent sample. Moreover, during early adolescence, peer victimization frequency peaks whereas academic self-concept decreases (Beran & Tutty, 2002; Nansel et al., 2001; Unnever & Cornell, 2004; Wigfield & Eccles, 1992). This trend could be detrimental to adolescents' academic achievement, which underscores the need to elucidate the impact of victimization during this critical period of development.

Additionally, in the current study, we chose indicators of academic performance based on a sound theoretical framework. Two academic variables were chosen that parallel the Academic Competence theory proposed by DiPerna and Elliott (2002). In their model, academic competence refers to all attitudes, behaviors, and skills that a student needs to be successful in the classroom and involves two components: academic skills and academic enablers. Academic skills are basic and complex skills needed to be successful in the classroom, such as language-based skills, math skills, and critical thinking. However, academic enablers are skills and behaviors that support learning, such as academic engagement, interpersonal skills, motivation, and study skills, and are an important predictor of academic success (DiPerna & Elliott, 2002; DiPerna, Volpe, & Elliott, 2005). To be successful in academics, students must possess a combination of general intelligence, academic skills, and academic enablers. DiPerna and colleagues (DiPerna & Elliott, 2000, 2002; DiPerna et al., 2005) included engagement, interpersonal skills, motivation, and study skills as academic enablers. For the current study, grades in reading and math classes represented academic skills, and student-reported engagement, interpersonal skills, motivation, and study skills represented academic enablers. This study is the first to include academic enablers as an academic outcome.

Engagement, interpersonal skills, motivation, and study skills are collectively referred to as academic enablers, but each individual variable has been found to be positively associated with academic achievement. Engagement, or "behaviors that reflect attentive, active participation" (DiPerna & Elliott, 2000, p. 6), include such student behaviors as being attentive to teachers, following directions, and participating in discussions. Interpersonal skills, also known as social skills, are "cooperative learning behaviors necessary to interact with other people" (DiPerna & Elliott, 2000, p. 6). Motivation is defined by DiPerna and Elliott (2000) according to

a social cognitive perspective and is thought to be the process of initiating and sustaining goal-directed activities. Study skills include a range of cognitive skills and processes that work together for the purpose of enhancing the effectiveness of learning (Devine, 1987) and include acquiring, recording, organizing, synthesizing, remembering, and using information (Hoover & Patton, 1995).

Finally, the goal of the current study was to apply the theoretical research regarding academic self-concept to the link between victimization and academic outcomes. Previous research by Graham et al. (2006), Juvonen et al. (2000), and Schwartz et al. (2005) provides evidence that internalizing distress mediates the relation between victimization and academic outcomes, but the theoretical underpinnings of the academic self-concept literature suggests that the role of academic self-concept cannot be ignored in the victimization–academic outcome association. The current study seeks to extend previous research by answering the questions: (1) does academic self-concept have an indirect effect on the negative relation between victimization and academic achievement? and (2) does this association differ by gender? Because academic self-concept has not been tested in this relation in previous studies, the model was first applied to the entire sample and then tested for gender differences. Additionally, although previous research has connected victimization to academic self-concept (O'Moore & Kirkham, 2001; Salmivalli, 1998), the effect of gender on this relation is not known. Therefore, a third research question was (3) does the direct effect of victimization on academic self-concept vary by gender?

Method

Participants

The sample consisted of 140 participants, with 58 males (41%) and 82 females (59%). Participants reported their race/ethnicity as follows: 76% White (n = 106), 15% Hispanic American (n = 21), 6% African American (n = 8), and 4% biracial, Asian, or other (n = 5). Two participants did not report their race/ethnicity. The racial/ethnic profile of each school was closely aligned with the racial/ethnic characteristics of the participants from each respective school. Sixth-grade students accounted for 21% of the sample (n = 30), seventh-grade students accounted for 40% of the sample (n = 56), and eighth-grade students accounted for the remaining 39% of the sample (n = 54). Participants were recruited from three middle schools. Two of the schools served two suburban communities, and the third was located in a rural community.

Measures

The Bully Victimization Scale (BVS; Reynolds, 2003) was used to measure the victimization latent variable in the current study. The BVS is a 46-item self-report rating scale. The 23-item Victimization Scale was used in this study, which measures

a number of victimization behaviors, including physical and relational peer aggression directed toward the individual. To assess victimization, behavioral descriptions of victimization are provided and items are scored on a 4-point scale ranging, from never to five or more times. The Victimization Scale items assess both physical (kicking, pushing, hitting, tripping) and relational/verbal aggression (spreading rumors, exclusion, name-calling). The BVS manual reported reliability evidence via estimates of internal consistency (coefficient alpha of .93 for the total sample) and test–retest reliability (.80 at a 1- to 2-week interval). See the Preliminary Analyses section for coefficient alphas of the current sample. Adequate evidence of content, convergent, and divergent validity is reported in the manual.

There was one measure of the academic self-concept, the Scholastic Competence subscale of the Self-Perception Profile for Children (Harter, 1985). Items are rated on a 4-point scale in which students indicate which statement is most like them and to what degree the statement is true or not true of them. For example, "Some kids feel that they are very good at their school work, but other kids worry about whether they can do the school work assigned to them." Student indicate whether they agree with the first part of the statement or the second part of the statement, then how true that is for them. The six Scholastic Competence items were used as indicators for the Academic Self-Concept construct. Due to the length of each item, they were labeled Item 1–Item 6. Harter (1985) reported adequate internal consistency, with coefficients ranging from .75 to .85 for the Scholastic Competence. In the current sample, coefficient alpha for the Scholastic subscale was .84. The manual did not report test–retest reliability estimates. Results of a factor analysis yielded a clear six-factor structure, corresponding to the six subscales of the measure (Harter, 1985).

Academic success was measured by grades in reading and math and student-reported academic enablers. Students participated in the study during the fourth quarter, thus, reading and math grades from that quarter were obtained from school records and were coded in the following manner: 1 = A, 2 = B, 3 = C, 4 = D, 5 = F. Thus, lower numbers represented better academic grades. Academic enablers were measured via the Academic Competence Evaluation Scales (ACES; DiPerna & Elliott, 2000), which is a norm-referenced rating scale for evaluating academic functioning of students from kindergarten through college. The student-rated version of the Academic Enablers Scale was used in the current study. The ACES has been standardized on a national sample of teachers and students. Reliability for the Academic Enablers Scale is demonstrated through strong internal consistency (coefficient alphas were .96 and .95 for the 6th- to 8th-grade cluster) and a test–retest correlation of .82. Validity for the ACES is demonstrated through factor analysis and correlations with similar measures.

Procedures

After obtaining institutional review board approval, school administrators were contacted. Parental consent forms were sent home with all students. Of the

approximately 1,700 consent forms sent out to students at the three schools, 175 consent forms were returned with positive consent for participation (approximately a 10% return rate). Due to absences on the day of data collection, 161 students completed surveys. Student participants provided assent for participation in the study prior to completing any surveys. Research assistants monitored students during the completion of the surveys and answered questions asked by participants.

Structural Equation Modeling and Testing for Mediation

Structural equation modeling (SEM) was used to conduct all main analyses in the current study. The models comprised four latent variables: victimization, academic self-concept, and academic achievement. AMOS 20 (Arbuckle, 2007) was used, and the estimation method was maximum likelihood estimation. Model fit was evaluated based on five measures of fit: $\chi 2$, the comparative fit index (CFI), standardized root mean residual (SRMR), root mean square error of approximation (RMSEA), and parsimonious normed fit index (PNFI), which were chosen based on recommendations by Hooper, Coughlan, and Mullen (2008). When evaluating fit, it is desirable to have a nonsignificant $\chi 2$ value (Barrett, 2007); however, there are some cautions when interpreting model fit using the $\chi 2$. For example, this fit index is sensitive to sample size. A significant $\chi 2$ is common when testing a model with both large and small sample sizes (Kenny & McCoach, 2003). In a small sample, such as the sample in the current study, there may not be enough power to discriminate between good and poor-fitting models. It is recommended that researchers consider other fit indices when deciding whether or not the model fit the data. Contemporary guidelines suggest that models may be considered to have adequate fit if CFI values are above .95 (Fan, Thompson, & Wang, 1999; Hu & Bentler, 1999; Schermelleh-Engel, Moosbrugger, & Müller, 2003), SRMR values are close to 0, especially models with SRMR values below .08 (Hu & Bentler, 1999) and RMSEA values below .07 (Steiger, 1990) or .06 (Hu & Bentler, 1999). The PNFI is also reported, but there is no widely accepted cutoff for this index. Mulaik et al. (1989) suggest that values near .50 or greater are acceptable.

Research questions in the present study examined indirect (mediated) effects using bootstrapping (Preacher & Hayes, 2008; Shrout & Bolger, 2002). Hayes (2009) argued that bootstrapping is a superior method for testing indirect effects. Bootstrapping is essentially when a sample is treated as the population from which small samples are drawn, analyzed, and replaced. This resampling with replacement process is repeated a number of times (5,000 for the present study), and each time, the necessary analyses are conducted (Hayes, 2009). Bootstrapping can provide analysts with estimated standard errors, confidence intervals, and p values for total, direct, and indirect effects that are tested in an SEM model. An additional advantage of bootstrapping is that it can be used with small to moderate sample sizes (20–80 cases; Shrout & Bolger, 2002), thus utilizing bootstrapping in the present analyses with this sample is appropriate. The final sample in the current study was 140 cases, but indirect effects were calculated for boys (n = 58) and girls (n = 82) separately.

Missing Data

SEM is the preferred method for testing mediation effects (Hoyle & Smith, 1994); however, there are some limitations to using this technique when data are missing. AMOS 20, the SEM package used in the current study, requires that there be no missing data when bootstrapping is applied to analyses. Bootstrapping is not possible if the data contain missing values because one could potentially create a bootstrap sample comprising mostly or only missing values. Although AMOS allows missing data when calculating total, direct, and indirect effects, if the analyst needs to obtain estimated standard errors, confidence intervals, and p values via bootstrapping, missing data are not allowed. As a result, for the current study, 21 cases were deleted due to incomplete data on one or more of the indicators in the measurement model. This resulted in a final sample size of 140.

Results

Preliminary Analyses

Table 1 presents means and standard deviations of main study variables by gender, as well as analysis of variance results testing for gender differences in the means of the main study variables. There were no significant gender differences except for Academic Enablers, $F(1,141) = 12.49$, $p < .001$, with girls reporting higher scores. Table 2 contains bivariate correlations between main study variables by gender.

Factor Analysis of the Victimization Scale

Item parceling was used to develop two subscales for the Reynolds's (2003) BVS Victimization scale. Item parceling is advantageous for studies examining latent constructs, as it can reduce the number of parameters estimated and provide more stable estimates and model fit indices (Holt, 2004). The BVS manual stated that the Victimization subscale addressed different types of victimization. Ten items included victimization resulting from physical touch (e.g., “one or more kids hit me for no reason,” “kids took my books or papers”) and 10 items consisted of other types of victimization (e.g., “other kids teased me or called me names,” “I told my parents other kids were picking on me”). Three of the items involved threatened actions (e.g., “kids said they would hurt my family”) so were not used in the analyses. Principal axis factoring with oblique rotation was used to force two factors (Physical Victimization and Nonphysical Victimization). All but two items loaded on the expected factor. Two items (“some kids said they would hurt me” and “some kids tried to pick a fight with me”) loaded on both factors, but had higher loadings for the Nonphysical factor. The final solution included 10 items on the Physical Victimization scale and 10 items on the Nonphysical Victimization scale. Factor loadings for items on the Physical Victimization factor ranged from .32 (“some kids broke something of mine”) to .97 (“other kids did things to me that made me feel bad”), and loadings for items on the Non-Physical Victimization scale ranged from

.32 (“I ran away from kids picking on me”) to .76 (“some kids chased me”). These items loaded in a theoretically consistent manner. Internal consistency for both scales was calculated, and alpha was acceptable for both the Physical Victimization scale (.89) and Nonphysical Victimization scale (.89).

Table 1. Means and Standard Deviations of Main Study Variables and Gender ANOVA Results

	Total		Boys		Girls		Univariate
Variable	***M***	***SD***	***M***	***SD***	***M***	***SD***	***F*(1, 141)**
Physical victimization	.29	.44	.37	.54	.24	.35	2.85
Nonphysical victimization	.56	.57	.54	.58	.57	.57	.08
Academic Self-Concept	16.29	4.03	15.97	3.52	16.51	4.35	.10
Reading	1.68	1.01	1.79	1.10	1.61	.94	1.72
Math	1.82	1.02	1.71	.97	1.90	1.06	1.36
Academic Enablers	149.36	24.20	141.59	23.38	154.66	23.43	12.49*

Note
ANOVA = analysis of variance.
*$p < .001$.

Table 2. Pearson Correlation among Main Study Variables

	1	2	3	4	5	6
1. Physical	–	.70**	−.26*	.20	.03	−.18
2. Nonphysical	.81**	–	−.09	.01	−.05	.01
3. Academic Self-Concept	−.48**	−.50**	–	−.34**	−.44**	.43**
4. Reading	.14	.15	−.43**	–	.65**	−.39**
5. Math	.09	.05	−.36**	.49**	–	−.32*
6. Academic Enablers	−.32**	−.33**	.53**	−.45**	−.37**	–

*$p < .01$. **$p < .001$; correlations for boys above the diagonal and for girls, below the diagonal.

Primary Analyses

Measurement Model

The first step was to examine the paths between the indicators and the respective latent variables and the overall model fit. For the entire sample, all path coefficients between indicators and latent variables were significant and in the expected direction, except for the path between victimization and academic success. For boys, all path coefficients between the indicators and their respective latent variables were significant and in the expected direction, except for the path between physical victimization and its latent variable, which was not significant. For girls, all path coefficients between indicators and latent variables were significant and in the expected direction. Chi-square was significant, $\chi 2(82) = 115.22$, $p < .01$, but because other fit indices indicated acceptable fit (CFI = .95, SRMR = .06, RMSEA = .05, CI on RMSEA = .03–.08, PNFI = .62) the structural components of the model were interpreted.

Structural Model

The first model tested the indirect effect of academic self-concept on the relation between victimization and academic success for the entire sample, then a second model examined gender differences. Table 3 contains standardized and unstandardized coefficients, standard errors, and p values for the measurement and structural models for the total sample and for boys and girls separately (see Figure 1).

Table 3. Academic Self-Concept Mediation Model for Total Sample and by Gender

	B			*SE*			β			*p*		
Measurement Model	**Total**	**Boys**	**Girls**	**Total**	**Boys**	**Girls**	**Total**	**Boys**	**Girls**	**Total**	**Boys**	**Girls**
Victimization												
Physical Items	.75	3.93	.54	.14	8.54	.08	.88	1.82	.88	.001	.646	.001
Nonphysical Items	1.00	1.00	1.00				.82	.39	.92			
Academic Self-Concept												
ASC Item 1	1.18	1.13	1.26	.15	.18	.23	0.79	.84	.78	.001	.001	.001
ASC Item 2	1.15	.84	1.43	.15	.15	.26	0.77	.73	.81	.001	.001	.001
ASC Item 3	0.89	.67	1.07	0.15	.18	.24	0.56	.52	.58	.001	.001	.001
ASC Item 4	0.80	.60	.96	0.15	.17	.23	0.52	.48	.53	.001	.001	.001
ASC Item 5	1.07	1.07	1.07	0.13	.17	.20	0.79	.83	.76	.001	.001	.001
ASC Item 6	1.00	1.00	1.00				0.67	.76	.64			
Academic Achievement												
Academic Enabler	−18.81	−12.359	−26.12	3.49	3.82	5.66	−.58	−.48	−.68	.001	.001	.001
Math	.90	.83	.99	.15	.19	.24	.66	.78	.59	.001	.001	.001
Reading	1.00	1.00	1.00				.75	.83	.69			
Structural Model												
ASC ← Victimization	−0.06	−.04	−.06	0.01	.03	.02	−0.41	−.13	−.53	.01	.101	.001
AA ← ASC	−0.73	−.62	−.84	0.15	.29	.22	−0.64	−.49	−.82	.02	.002	.001
AA ← Victimization	−0.01	.02	−.02	0.02	.03	.02	−0.04	.06	−.15	.69	.382	.33

Note

ASC = Academic Self-Concept; AA = academic achievement.

To answer the main research questions, bootstrap estimates of the direct and indirect effects, and corresponding p values were examined (see Table 3). The first research question asked whether there was an indirect (i.e., mediated) effect of Academic Self-Concept on the association between Victimization and Academic Success for the entire sample ($\beta = .26$, $p < .001$). The second research question tested the same model for both boys and girls. The indirect effect of Academic Self-Concept was not significant ($\beta = .06$, $p = .15$) for boys, but was significant for girls ($\beta = .47$, $p < .001$). This indicates that Academic Self-Concept was a significant mediator for girls, but not for boys.

Direct Effects

The individual direct effects between Victimization and Academic Self-Concept for boys and girls were examined. For girls, there was a significant direct effect of Victimization on Academic Self-Concept (β = –.57, p < .001), but the effect was not significant for boys (β = –.13, p = .35).

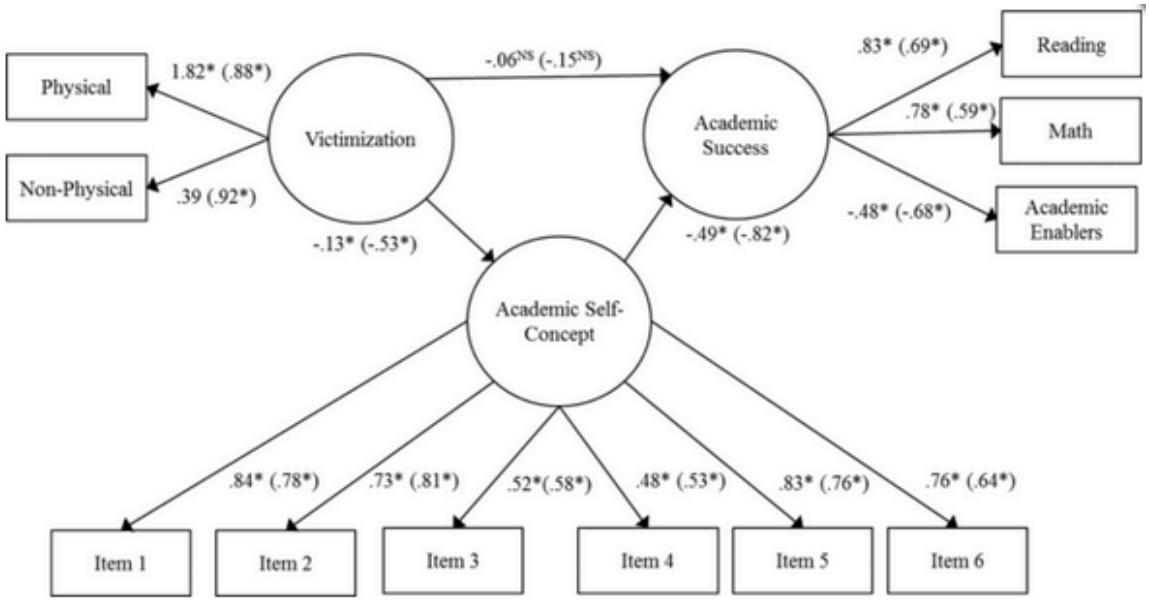

Figure 1. Standardized estimates for academic self-concept mediation model for boys and girls. Estimates in parenthesis represent the standardized estimates for girls. Latent constructs are shown in circles, and observed variables are shown in rectangles. *p < 001.

Discussion

The goal of the current study was to investigate the role of academic self-concept in the relation between victimization and academic achievement. Previous studies have found that there is an indirect effect of internalizing problems on this relation (Graham et al., 2006; Juvonen et al., 2001; Schwartz et al., 2005), but the current study found a significant indirect effect of academic self-concept on the relation between victimization and academic achievement. This study is unique in that it is the first to test, and find support for, the indirect effect of academic self-concept on the negative relationship between victimization and academic achievement. Prior work has established that victimized peers are at greater risk for academic difficulties, but the reason for this is not certain (Nakamoto & Schwartz, 2010); however, the results of the first research question would suggest that lower academic self-concept would explain the association between victimization and lower academic achievement.

When this model was examined for gender differences, the indirect effect of academic self-concept was significant for girls, but not for boys. Although other studies have not tested academic self-concept as a mediator, there is some evidence that there are different relations between victimization and academic achievement for boys and girls. Hoglund (2007) found that, for girls, internalizing problems

explained the relation between victimization and engagement, but internalizing problems were not a significant mediator for boys among any relation tested in the study. Considering the function of internalizing distress and self-concept is important because previous research has established that internalizing symptoms and self-concept have a moderate, positive association (Merrell, 2008). Future research should determine whether the association between victimization and academic difficulties is due to negative self-concept or the internalizing symptoms associated with being a victim. A potential confound, however, is that internalizing symptoms and self-concept seem to be reciprocally related and directionality is difficult to determine (Merrell, 2008). It logical that internalizing symptoms could have a negative impact on academic self-concept and that negative academic self-concept could have a negative impact on internalizing symptoms.

When testing the model on the entire sample, there was a significant indirect effect of academic self-concept, but when examining the model for boys and girls separately, the model only held for girls. Other studies have found gender differences in the impact of victimization on academic outcomes (e.g., Hoglund, 2007), but others have not (e.g., Flook, Repetti, & Ullman, 2005). It may be that mediators tested and the way that academic achievement is defined have an impact on the outcomes. For example, the Hoglund (2007) study found gender differences when the outcome was academic engagement, but found no gender differences when the outcome was grade point average. However, victimization may simply have a greater negative impact on academic outcomes, such as academic self-concept, academic enablers, and academic grades, for girls compared with boys.

Limitations

The findings of this study should be interpreted with some caution. First, the reliance on self-report for the victimization and academic self-concept variables could increase response bias among participants and introduce error into the data. Although there are limitations associated with self-report, some of the information assessed in the current study might be best obtained from each individual. For example, it might difficult for a parent or teacher to rate a student's level of academic self-concept. However, some researchers argue that the use of self-report of victimization might not be the most reliable form of data collection (Cornell, Sheras, & Cole, 2006). Peer nomination may be a more reliable option when identifying “true” victims (Cornell et al., 2006). However, the goal of this study was to examine relations between victimization and other variables, not to identify “true” victims according to a strict definition. Given this focus, the use of self-reported victimization seems appropriate in this study.

Additionally, a factor that could limit the generalization of the study is the cross-sectional design of the study. All data were collected at the same point in time; thus, longitudinal relations among the variables could not be examined. There is some evidence that there may be differences in the concurrent and predictive relationship of peer victimization and academic performance. For example, Juvonen et al. (2000)

found that victimization was predictive of future psychological adjustment problems, but not future school success problems. However, Schwartz et al. (2005) reported that victimization was related to academic achievement on both concurrent and predictive levels. The cross-sectional design of the present study did not allow for the examination of both types of relations, so long-term implications cannot be interpreted. Finally, a major limitation of the study is related to the sample size and demographics. The sample of participants in this study were primarily White and from rural or suburban settings. The demographic characteristics of the sample are partly due to the region in which the data were collected, but may be due to the low parental consent return rate (~10%).

Implications

This study was the first to examine academic self-concept as a potential mediator in the victimization–academic achievement relation. This provides further support for the theories of academic self-concept, which posit that a person's belief that he or she is competent is influenced by social events and can have an impact on academic performance. Although causal relationships were not tested in the current study, there is now support showing that this interaction might be occurring concurrently.

Several important implications for intervention and prevention efforts for individuals or groups exist. This study demonstrated that being victimized is linked to lower academic self-concept and lower academic achievement. If a school's goal is to improve academic achievement for all students, but peer victimization is a significant problem at the school, results of the current study would suggest that school mental health professionals should consider interventions that address academic self-concept for those students who are victimized. The current study found a negative relation between victimization and academic self-concept; thus, school mental health professionals should consider creating interventions to address both areas, in addition to internalizing problems that often are associated with victimization. Although causal statements cannot be made, the results of the study can inform some decisions that need to be made when working with individuals who have been victimized. When working with victimized girls, it is especially important to address academic self-concept.

Because the current study found that academic self-concept mediated the association between victimization and academic achievement for girls only, girls may be especially susceptible to negative academic outcomes associated with victimization and academic self-concept. Although there is some debate about whether girls experience more relational victimization than boys do, it is important to recognize that victimized girls are susceptible to social, emotional, and academic outcomes regardless of the type of victimization they experience.

Future Directions and Conclusion

There are several modifications that could be made to explore the interrelations among victimization, self-concept, and academic achievement more thoroughly. For example, Woods and Wolke (2004) explored differences in the association between academic achievement and direct (i.e., physical) or indirect (i.e., relational) victimization. They found no significant relation between direct victimization and standardized test scores, but there was a significant relation between indirect victimization and test scores. Future studies could explore a model similar to that used in the current study, but could test separate models for different types of victimization.

Considering directionality of the impact of victimization, academic self-concept, and academic achievement in relation to each other is important. Marsh (1990) proposed that although initial academic achievements are likely to occur prior to the development of academic self-concept, there is theoretical and empirical evidence to suggest that academic self-concept influences later academic achievement. There is some debate in the victimization literature about whether academic achievement declines after victimization or whether lower achievement youth somehow "invite" victimization (Kochenderfer & Ladd, 1996). The causal ordering of victimization, academic self-concept, and academic achievement has not been specifically explored, but information about causation could be very helpful for researchers, mental health practitioners, and educators.

Conclusion

The current study found that academic self-concept, or a student's belief that he or she is academically competent, explains the negative relation between victimization and academic achievement. Gender also seems to be an important variable in this relationship; when the model was tested for gender differences, the mediated relationship was only significant for girls, not boys. Thus, in the adolescent sample, the negative relation between victimization and academic outcomes was explained by low academic self-concept for girls. Although more work is needed to confirm these findings, it is hypothesized that peer victimization may be more detrimental to girls' academic self-concept and academic achievement.

References

Arbuckle, J. L. (2007). Amos (Version 20.0) [Computer Program]. Chicago, IL: SPSS.
Barrett, P. (2007). Structural equation modeling: Adjudging model fit. Personality and Individual Differences, 42, 815–824.

Barriga, A. Q., Doran, J. W., Newell, S. B., Morrison, E. M., Babbetti, V., & Robbins, B. D. (2002). Relationships between problem behaviors and academic achievement in adolescents: The unique role of attention problems. Journal of Emotional and Behavioral Disorders, 10, 233–240.

Beran, T. N., Hughes, G., & Lupart, J. (2008). A model of achievement and bullying: Analyses of the Canadian National Longitudinal Survey of Children and Youth data. Educational Research, 50, 25–39.

Beran, T. N., & Lupart, J. (2009). The relationship between school achievement and peer harassment in Canadian adolescents: The importance of mediating factors. School Psychology International, 30, 75–91.

Beran, T. N., & Tutty, L. (2002). Children's reports of bullying and safety at school. Canadian Journal of School Psychology, 17, 1–14.

Card, N. A., Stucky, B. D., Sawalani, G. M., & Little, T. D. (2008). Direct and indirect aggression during childhood and adolescent: A meta-analytic review of gender differences, intercorrelations, and relations to maladjustment. Child Development, 79, 1185–1229.

Cornell, D. G., Sheras, P. L., & Cole, J. C. M. (2006). Assessment of bullying. In S. R. Jimmerson & M. J. Furlong (Eds.), Handbook of school violence and school safety: From research to practice (pp. 191–209). Mahwah, NJ: Lawrence Erlbaum Associates.

Crick, N. R., & Grotpeter, J. K. (1995). Relational aggression, gender, and social-psychological adjustment. Child Development, 66, 710–722.

Devine, T. G. (1987). Teaching study skills: A guide for teachers. Boston, MA: Allyn and Bacon.

DiPerna, J. C., & Elliott, S. N. (2000). Academic competence evaluation scales. San Antonio, TX: The Psychological Corporation.

DiPerna, J. C., & Elliott, S. N. (2002). Promoting academic enablers to improve student achievement: Introduction to a miniseries. School Psychology Review, 31, 293–297.

DiPerna, J. C., Volpe, R. V., & Elliott, S. N. (2005). A model of academic enablers and mathematics achievement in the elementary grades. Journal of School Psychology, 43, 379–392.

Eccles, J. S., Wigfield, A., Flanagan, C. A., Miller, C., Reuman, D. A., & Yee, D. (1989). Self-concepts, domain values, and self-esteem: Relations and changes at early adolescence. Journal of Personality, 57, 283–310.

Entwisle, D. R., & Baker, D. P. (1983). Gender and young children's expectations for performance in arithmetic. Developmental Psychology, 19, 200–209.

Fan, X., Thompson, B., & Wang, L. (1999). Effects of sample size, estimation methods, and model specification on structural equation modeling fit indexes. Structural Equation Modeling, 6, 56–83.

Flook, L., Repetti, R. L., & Ullman, J. B. (2005). Classroom social experiences as predictors of academic performance. Educational Psychology, 41, 319–327.

Frey, K., & Ruble, D. N. (1987). What children say about classroom performance: Sex and grade differences in perceived competence. Child Development, 58, 1066–1078.

Graham, S., Bellmore, A. D., & Mize, J. (2006). Peer victimization, aggression, and their co-occurrence in middle school: Pathways to adjustment problems. Journal of Abnormal Child Psychology, 34, 363–378.

Harter, S. (1985). Competence as a dimension of self-evaluation: Toward a comprehensive model of self-worth. In R. L. Leahy (Ed.), The development of the self (pp. 55–121). New York, NY: Academic Press.

Hawker, D. S. J., & Boulton, M. J. (2000). Twenty years' research on peer victimization and psychosocial maladjustment: A meta-analytic review of cross-sectional studies. Journal of Child Psychology and Psychiatry, 41, 441–455.

Hayes, A. F. (2009). Beyond Baron and Kenny: Statistical mediation analysis in the new millennium. Communication Monographs, 76, 408–420.

Hoglund, W. L. G. (2007). School functioning in early adolescence: Gender-linked responses to peer victimization. Journal of Educational Psychology, 99, 683–699.

Holt, J. (2004, November). Item parceling in structural equation models for optimum solutions. Paper presented at the 2004 Annual Meeting of the Mid-Western Educational Research Association, Chicago, IL.

Hooper, D., Coughlan, J., & Mullen, M. R. (2008). Structural equation modeling: Guidelines for determining model fit. The Electronic Journal of Business Research Methods, 6, 53–60.

Hoover, J. J., & Patton, P. R. (1995). Teaching students with learning problems to use study skills: A teacher's guide. Austin, TX: Pro-Ed.

Hoyle, R. H., & Smith, G. T. (1994). Formulating clinical research hypotheses as structural equations: A conceptual overview. Journal of Consulting and Clinical Psychology, 62, 429–440.

Hu, L., & Bentler, P. (1995). Evaluating model fit. In R. H. Hoyle (Ed.), Structural equation modeling: Concepts, issues, and applications (pp. 76–99). Thousand Oaks, CA: Sage.

Juvonen, J., Nishina, A., & Graham, S. (2000). Peer harassment, psychological adjustment, and school functioning in early adolescence. Journal of Educational Psychology, 92, 349–359.

Kenny, D. A., & McCoach, D. B. (2003). Effect of the number of variables on measures of fit in structural equation modeling. Structural Equation Modeling, 10, 333–351.

Kochenderfer, B. J., & Ladd, G. W. (1996). Peer victimization: Cause or consequence of school maladjustment? Child Development, 67, 1305–1317.

Marsh, H. W. (1990). Causal ordering of academic self-concept and academic achievement: A multiwave, longitudinal panel analysis. Journal of Educational Psychology, 82, 646–656.

Merrell, K. W. (Ed.). (2008). Behavioral, social, and emotional assessment of children and adolescents (3rd ed.). Mahway, NJ: Routledge.

Marsh, H. W., & Shavelson, R. (1985). Self-concept: Its multifaceted hierarchical structure. Educational Psychologists, 21, 107–123.

Mulaik, S. A., James, L. R., Van Alstine, J., Bennett, N., Lind, S., & Stilwell, C. D. (1989). Quantitative methods in psychology. Psychological Bulletin, 105, 430–445.

Nakamoto, J., & Schwartz, D. (2010). Is peer victimization associated with academic achievement? A meta-analytic review. Social Development, 19, 221–242.

Nansel, T. R., Overpeck, M., Pilla, R. S., Ruan, W. J., Simons-Morton, B., & Scheidt, P. (2001). Bullying behaviors among US youth. Journal of the American Medical Association, 285, 2094–2101.

Olweus, D. (1995). Bullying or peer abuse at school: Knowledge base and an effective intervention program. Current Directions in Psychological Science, 4, 196–201.

O'Moore, M., & Kirkham, C. (2001). Self-esteem and its relationship to bullying behavior. Aggressive Behavior, 27, 269–283.

Phillips, D., & Zimmerman, M. (1990). The developmental course of perceived competence and incompetence among competence children. In R. Sterberg & J. Kolligian (Eds.), Competence considered (pp. 41–66). New Haven, CT: Yale University Press.

Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. Behavior Research Methods, 40, 879–891.

Reynolds, W. M. (2003). Reynolds Bully-Victimization Scales for schools. San Antonio, TX: Psychological Corporation.

Salmivalli, C. (1998). Intelligent, attractive, well-behaving, unhappy: The structure of adolescents' self-concept in relation to their social behavior. Journal of Research on Adolescence, 8, 333–354.

Schermelleh-Engel, K., Moosbrugger, H., & Müller, H. (2003). Evaluating the fit of structural equation models: Tests of significance and descriptive goodness-of-fit measures. Methods of Psychological Research Online, 8, 23–74.

Schunk, D. H., Pintrich, P. R., & Meece, J. L. (2008). Motivation in education: Theory, research and applications (3rd ed.). New Jersey City, NJ: Pearson Education.

Schwartz, D., Gorman, A. H., Nakamoto, J., & Toblin, R. L. (2005). Victimization in the peer group and children's academic functioning. Journal of Educational Psychology, 97, 425–435.

Shrout, P. E., & Bolger, N. (2002). Mediation in experimental and nonexperimental studies: New procedures and recommendations. Psychological Methods, 7, 422–445.

Steiger, J. H. (1990). Structural model evaluation and modification: An interval estimation approach. Multivariate Behavioral Research, 25, 173–180.

Totura, C. M. W., Karver, M. S., & Gesten, E. L. (2014). Psychological distress and student engagement as mediators of the relationship between peer victimization and achievement in middle school youth. Journal of youth and adolescence, 43, 40–52.

Unnever, J. D., & Cornell, D. G. (2004). Middle school victims of bullying: Who reports being bullied? Aggressive Behavior, 30, 373–388.
Direct Link:

Wang, J., Iannotti, R. J., & Nansel, T. R. (2009). School bullying among adolescents in the United States: Physical, verbal, relational, and cyber. Journal of Adolescent Health, 45, 368–375.

Wigfield, A. (1994). Expectancy-value theory of achievement motivation: A developmental perspective. Educational Psychology Review, 6, 49–78.

Wigfield, A., & Eccles, J. (1992). The development of achievement task values: A theoretical analysis. Developmental Psychology, 27, 552–565.

Woods, S., & Wolke, D. (2004). Direct and relational bullying among primary school children and academic achievement. Journal of School Psychology, 42, 135–155.