

IMPACT OF PHYSICAL AND RELATIONAL PEER VICTIMIZATION ON
SELF-COGNITIONS IN CHILDREN AND ADOLESCENTS

Keneisha R. Sinclair

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Professor David A. Cole

Professor Judy Garber

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ABSTRACT

Prospective relations of physical and relational peer victimization to positive and negative self-cognitions were examined in a one-year, two-wave longitudinal study. Self-reports of cognitions and both peer nomination and self-report measures of peer victimization experiences were obtained from 478 children and young adolescents (grades 3 through 6 at the beginning of the study). Results revealed: (a) peer victimization predicted increases in negative self-cognitions and decreases in positive self-cognitions over time; (b) relational victimization was more consistently related to changes in self-cognitions than was physical victimization; (c) the prospective relation between victimization and self-cognitions was stronger for boys than for girls; (d) girls reported more willingness to seek adult support following a victimization experience than did boys; and (e) when the overlap between relational and physical TPV was statistically controlled, girls experienced more relational TPV than did boys, and boys experienced more physical TPV than did girls. Implications for practice, policy, and research are discussed.

CHAPTER I

INTRODUCTION

The likelihood of being targeted for victimization by peers is especially high in middle childhood and early adolescence. Targeted peer victimization (TPV) is defined as “the experience among children of being a target of the aggressive behavior of other children” (Hawker & Boulton, 2000, p. 441). TPV has been linked to a variety of negative outcomes, but the connection to depression is especially strong (e.g., Hawker & Boulton, 2000; Boivin, Hymel, & Bukowski, 1995). The reasons for this association are not clear. Given that TPV typically constitutes painful social feedback to victims about their social status and personal liabilities, and given that middle childhood is a time when both positive and negative self-cognitions are under construction, Cole, Maxwell, Dukewich, and Yosick (2010) suggested that one mechanism underlying the TPV-depression connection involves the effect of TPV on the cognitive diatheses that predispose depression. Differential effects of TPV on depressive cognitions may vary with the type of victimization and with the gender of the victim. Most research supporting these relations, however, has been cross-sectional. Consequently, the overarching goal of the current study was to seek longitudinal evidence of the effect of TPV on depressive cognitions, as a function of TPV type and gender.

Most research supporting the idea that TPV affects self-cognitions has been cross-sectional (e.g., Boulton & Smith, 1994; Callaghan & Joseph, 1995; Gibb, Abramson, & Alloy, 2004; Cole et al., 2010). The few longitudinal studies that have been conducted

have tended to ignore differences in type of victimization, neglect differences between the genders, and/or focus on other dependent variables such as rumination and negative affect (e.g., Barschia & Bussey, 2010; Dill, Vernberg, Fonagy, Twemlow, & Gamm, 2004). As cross-sectional studies cannot control for prior levels of the dependent variable, their estimates of the TPV-cognition relation are poor proxies for the prospective relation.

We focused this research on middle childhood and early adolescence for three major reasons. First, rates of peer victimization are higher during these years than at any other period of human development (Pelligrini & Long, 2002). Second, during these years, a major developmental task is the construction of self-concept and self-perceived competence (Weiss & Garber, 2003; Harter, 1990). Some children negotiate this task well, developing positive self-cognitions, a resilience factor that can protect against depression (Masten, Hubbard, & Scott, 1999; Cole, Martin, Powers, & Truglio, 1996). Other children have difficulty with this task, developing strong negative self-cognitions that can predispose depression (Cole, Martin, & Powers, 2006; Burt, Obradovic, Long, & Masten, 2008). Peer victimization represents a clear and undeniable source of negative, self-relevant information that has the potential to affect a child's capacity to complete this developmental task successfully. Third, individual differences in several kinds of depressogenic self-cognitions become increasingly stable at this age (Cole et al., 2008; LaGrange et al., 2008).

Victimization has been divided into various important subtypes. We focus on two: overt/physical victimization and covert/relational victimization. Overt/physical victimization occurs when a child is controlled or physically harmed by attacks or physical threats (Crick & Bigbee, 1998). Covert/relational victimization involves

behavior designed to damage peer relationships, friendships, and social acceptance, often by excluding the victim from peer activities, withdrawing friendship, or spreading rumors (Crick & Bigbee, 1998; Grotmeter & Crick, 1996; Hawker & Boulton, 2000).

Historically, overt/physical victimization has received more attention than covert/relational victimization. In recent years, however, researchers have begun to realize that the consequences of verbal, covert, and other relational forms of victimization can also be quite severe – potentially more severe than the effects of physical victimization (Cole, Maxwell, Dukewich, & Yosick, 2010; Hunter & Boyle, 2002; Juvonen and Graham, 2001; Olweus 1995; Pepler, Craig, Yuile, & Connolly, 2004). For example, Woods, Done, and Kalsi (2009) found that victims of relational victimization reported more emotional problems and feelings of loneliness than non-victims, whereas students who experienced physical victimization did not. Based on this research, we hypothesize that relational victimization will be more strongly associated with changes in self-cognitions than physical victimization.

We focus on gender as a possible moderator of the TPV-cognition relation; however, the direction of this effect is unclear. Theory and evidence proceed in two directions. Gender differences in response to victimization can be viewed through Rose and Rudolph’s “trade-off” approach to sex-linked relationship processes (2006). In this view, there are costs and benefits to various gender differences in peer relationship processes, differences that can protect or predispose youth to a variety of problems as they develop. Studies indicate that girls are more likely than boys to seek support when stressed and more likely to offer such support to their peers (Rose and Rudolph, 2006; Frydenberg & Lewis, 1993).

“By seeking support, girls may be provided with reassurance that their problems can be resolved and that they are valued members of their social group, thereby decreasing the chances that stressors will lead to decreased self-esteem, excessive worrying, sadness, or other types of emotional distress” (Rose & Rudolph, 2006 p. 121).

Boys are more likely than girls to never report TPV to others, being unwilling to report even to individuals who have been specifically designated as Peer Supporters in a bullying intervention program (eg., Cowie, 2000). In addition, boys were less likely to volunteer to be trained as Peer Supporters in bullying intervention programs. Based on gender differences in social support, we hypothesized that girls would indicate they were more willing to seek social support following victimization experiences than would boys.

The gender difference in social support might lead one to expect that boys will have more difficulty coping with TPV than will girls. Supporting this idea, Prinstein, Boergers, and Vernberg (2001) found that physical victimization was significantly associated with depressive symptoms for boys but not for girls. On the other hand, studies also reveal that girls are more likely to internalize peers’ negative acts directed at them than boys are, resulting in increased loneliness and anxiety symptoms (Grills & Ollendick, 2002). These differences suggest that TPV might have greater impact on girls than boys. That said, still other evidence is inconclusive. For example, Cole et al. (2010) found that the relations between both types of victimization, self-cognitions, and depressive symptoms were the same for girls and boys. In the current study, we test gender as a moderator of the longitudinal relation between self-cognitions and both types of TPV without clear a priori expectations about the direction of this effect.

Research regarding mean gender differences for TPV has also generated complex results. Although studies have established that boys are more likely to experience physical victimization than are girls, gender differences in the experience of relational victimization have been inconsistent (e.g., Crick & Goteper, 1995; Galen & Underwood, 1997; French, Janse, & Pidada, 2002). Smith, Rose, and Schwartz-Mette (2010) suggested that the inconsistent findings regarding relational victimization may be due to the fact that both types of TPV are highly correlated and some researchers have not controlled for overlap with physical victimization when testing the effect of gender on relational victimization. When Smith et al. (2010) controlled for statistical overlap with physical TPV, they found that girls were more likely to experience relational victimization than boys. Other studies have found similar results (e.g., Cole et al., 2010). Therefore in the current study, we hypothesize that boys will experience more physical TPV than girls do and girls will experience more relational TPV than boys do, after statistically controlling for the other type of TPV.

In the current study, we had four major goals. First was to test the hypotheses that TPV would predict increases in negative self-cognitions and decreases in positive self-cognitions over time. We predicted that evidence of a relation between relational TPV and self-cognitions would be stronger than evidence of a relation between physical TPV and self-cognitions. Second was to test the hypotheses that boys would experience more physical victimization than do girls, and that girls would experience more relational victimization than do boys, after controlling for the overlap between these two types of TPV. Third was to test the hypotheses that girls would be more willing to seek social support following a TPV experience than would boys. Our fourth goal was to test for

gender differences in the strength of the relations of relational and physical TPV to positive and negative self-cognitions. We addressed these goals in a two-wave longitudinal study of the effects of both physical and relational TPV on various types of positive and negative self-relevant cognitions. Noting that Hawker and Boulton (2000) reported evidence of mono-method bias when TPV and the outcome variable were assessed by similar methods (e.g., self-report), we assessed TPV using two relatively dissimilar methods: peer nomination and self-report.

CHAPTER II

METHODS

Participants

We recruited participants from two suburban elementary schools and one middle school in central Tennessee. At Time 1, consent forms for parents and letters describing the project were distributed to 626 students in third, fourth, fifth, and sixth grades. We received permission for 421 students, 404 (96%) of whom were present on the day of data collection and gave their assent to participate. At Time 2 (one year later), 656 consent forms were sent to parents of fourth, fifth, sixth and seventh students, and 470 parents gave permission for their children to participate, of whom 414 (88%) were present on the day of data collection and gave their assent to participate. Comparisons of participants to nonparticipants on ethnicity, sex, and grade level revealed only small, nonsignificant results ($ps > .20$) at both time points. The total N of 478 contained two patterns of missing data: those who participated at Time 1 but not Time 2 (dropouts, 15%) and those who participated in Time 2 but not Time 1 (joiners, 13%). The primary reason for dropping out (moving out of the school district) was essentially the same as the primary reason for joining the study (moving into the school district). Comparison of these two subgroups to participants with no missing data revealed no significant differences on any variable on which the subgroups were not missing (all $ps > .05$). Therefore, to avoid unnecessarily biasing the sample and to enhance the fidelity of parameter estimation, we included all participants in the data analysis and used full

information maximum likelihood statistical methods for all parameter estimations.

At the beginning of the study, participants were evenly distributed across grades 3 through 6, and ages ranged from 8 to 14 ($M = 10.9$, $SD = 1.2$). Overall, the sample had approximately equal numbers of males and females (49.6% and 50.4%, respectively). The sample consisted of 91.0% Caucasian, 1.7% African American, 3.6% Hispanic, and 3.7% other. Family size (i.e., the number of children living at home) ranged from 1 to 9 ($Mdn = 2.8$).

Measures

Peer victimization. We assessed peer victimization using both self-report and peer nomination methods. Utilization of multiple informants is crucial insofar as every informational source has its own strengths and weaknesses (De Los Reyes & Prinstein, 2004). Our self-report was a 6-item questionnaire designed to assess covert/relational and overt/physical victimization (RV-SR and PV-SR, respectively), expanding on the items used by Ladd and Kochenderfer-Ladd (2002) to reflect a broader range of victimization experiences. Items were also reworded for somewhat older children. The question stem was “Does anyone in your class ever....” The three relational items were: (1) Tell others to stop being your friend, (2) Say you can’t play with them, and (3) Say mean things to others kids about you. The three physical items were (4) Kick you, (5) Hit you, and (6) Push you. Each item was rated on a 4-point scale (1 = never, 2 = rarely, 3 = sometimes, 4 = a lot). Despite the relatively small number of items, both subscales had acceptable internal consistency in the current study (Cronbach’s alphas were 0.86 and 0.77 for relational and physical victimization, respectively). Principle axis factor analysis with

oblimin rotation revealed a 2-factor structure with primary factor loadings above 0.57 on the appropriate factors, and no cross loadings greater than 0.25. The two factors correlated 0.44 and 0.51 for Time 1 and Time 2, respectively.

Our peer nomination measure followed a format similar to that used in studies of children's social status (e.g., Coie, Dodge, & Coppotelli, 1982). Each participant received a list of 20 names of students, in an order randomized for each participant. Names were primarily from the respondent's homeroom. If there were not 20 consented participants from that roster, names were added from adjacent classrooms. Every student's name appeared on 20 other students' peer nomination forms. Separate forms were used to obtain peer nominations of relational and physical victimization. For example, the physical victimization item was: "Some kids get picked on or hurt by other kids at school. They might get pushed around. They might get bullied by others. They might even get beaten up. Who gets treated like this? Who gets pushed around or bullied by others?" Instructions ask respondents to mark all the names of classmates who fit a particular question. Scores for each student were the proportion of 20 participant nominators who indicated that the student was either physically or relationally victimized.

Self-cognition measures. Harter's (1985) Self-Perception Profile for Children (SPPC) is a self-report inventory with 36 items reflecting developmentally appropriate specific domains (i.e., scholastic competence, social acceptance, behavioral conduct, physical attractiveness, and sports competence) plus a global self-worth scale, which we did not use. For each item, children select one of two statements to indicate whether they are more like a child who is good or a child who is not so good at a particular activity. Then they select statements indicating whether the selected statement is "sort of true" or

“really true” about themselves. Responses are converted to 4-point rating scales with high scores reflecting better self-perceptions. The SPPC has a highly interpretable factor structure and all subscales have good internal consistency (Harter, 1982, 1985). In our sample, Cronbach’s alpha for the SPPC scales ranged from 0.86 to 0.89.

The Cognitive Triad Inventory for Children (CTI-C; Kaslow, Stark, Printz, Livingston, & Tsai, 1992) is a 36-item self-report questionnaire assessing children’s views of themselves (e.g., “I am a failure”), their world (e.g. “The world is a very mean place”), and their future (e.g., “Nothing is likely to work out for me”). Children indicate whether or not they have had specific thoughts using a *yes/maybe/no* response format, scored on 3-point scales. Scores range from 0 to 72 with higher scores indicating more negative views. Despite the word “triad” in the title, recent factor analysis of the measure reveals that a two-factor solution emerges over the course of middle childhood (LaGrange et al., 2008). One is a positive cognition factor; the other is a negative cognition factor. The measure has high internal consistency and good construct validity, correlating with measures of self-perception, self-worth, self-control, perceived contingency, and attributional style (Kaslow et al., 1992; LaGrange et al., 2008). Cronbach’s alphas for the positive and negative CTI-C scales were from 0.90 and 0.91, respectively.

The Children’s Automatic Thoughts Scale (CATS; Schniering & Rapee, 2002) is a self-report questionnaire assessing negative self-cognitions in young people. The questionnaire asks children to rate the frequency with which they have had 56 different negative thoughts in the previous week. Ratings are made on 5-point scales, ranging from 1=*not at all* to 5=*all the time*. The CATS yields scores on four subscales: Physical Threat

(e.g. “I’m going to get hurt”), Social Threat (e.g., “I’m afraid I will make a fool of myself”), Personal Failure (e.g., “It’s my fault that things have gone wrong”), and Hostility (e.g., “I won’t let anyone get away with picking on me”). Test-retest reliability is 0.79 at 1 month and 0.76 at 3 months (Schniering & Rapee, 2002). In the current sample, Cronbach’s alphas were 0.86 to 0.94 at Time 1 and Time 2, respectively.

Social Support Seeking. We gathered responses to peer victimization by using What Would You Do (WWYD), a questionnaire developed for this study that asked participants what they would do if they were victims in four hypothetical victimization scenarios. The scenarios included both physical and relational victimization experiences. Participants completed the measure in Wave 1 of data collection. Participants gave a written response for what they would do in each of the following situations: “1. What would you do if someone were teasing you about your appearance? 2. You and your friend got mad at each other. The next day you find out that your friend is trying to turn all of your other friends against you. What would you do? 3. Someone you know has been saying mean things about you behind your back. What would you do? 4. A bully starts picking a fight with you after school. What would you do?”

For these analyses, responses that indicated participants would seek help from a peer or help from an adult were coded as social support seeking responses. 1 point was given for each response indicating a participant would seek help from a peer and 1 point was given for each response indicating a participant would seek help from an adult. Total scores for peer and adult support seeking were each divided by 4 to create a mean Peer Support and Adult Support score for each participant.

Procedures

Prior to data collection, informed-consent statements were distributed to all children in each participating classroom. We offered a \$100 donation to each classroom if 90% of children returned consent forms signed by a parent or guardian, either granting or denying permission for their child's participation. Parents returned their consents to the university in preaddressed, stamped envelopes. During regular school hours, psychology graduate students gathered consented students into small groups and administered the questionnaires, reading the questionnaires aloud but allowing participant to answer the questions on their own forms. Research assistants circulated among students to answer questions before, during, and after questionnaire administration. At the end of the survey, students were given snacks and a decorated pencil for their participation. The entire procedure was repeated one year later.

CHAPTER III

RESULTS

Preliminary Analyses

Table 1 contains correlations among all study variables, as well as their descriptive statistics. Means and standard deviations were similar to those reported in other studies of non-referred school-based samples (LaGrange et al., 2008; Muris et al., 2003; Schniering & Rapee, 2002). In general, within-time and within-measure correlations tended to be larger than their cross-time counterparts, although many cross-wave correlations were both significant and large.

Data Analysis Overview

We addressed 2 of our goals (goals 1 and 4) with a series of multiple regression analyses in which one of 11 cognitive subscales served as the dependent variable (i.e., 5 SPPC subscales, 2 CTI subscales, and 4 CATS subscales). All 11 variables contributed statistically significant support to at least one of these goals. We addressed goal 2 with a series of regressions in which one of 4 measures of victimization served as the dependent variable. All 4 dependent variables contributed significantly to this goal. We addressed our remaining goal (goal 3) with a series of regression models.

Table 1
Correlations, Means, and Standard Deviations

Measure	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.
1. SR P TPV	1.00														
2. SR R TPV	0.37	1.00													
3. PN P TPV	0.29	0.26	1.00												
4. PN P TPV	0.26	0.31	0.59	1.00											
5. Sex	-0.17	0.22	-0.09	0.04	1.00										
6. CATS P T1	0.38	0.60	0.26	0.30	0.18	1.00									
7. CATS S T1	0.40	0.67	0.26	0.31	0.21	0.79	1.00								
8. CATS H T1	0.38	0.48	0.24	0.22	-0.06	0.61	0.61	1.00							
9. CATS PF T1	0.36	0.57	0.28	0.28	0.13	0.82	0.81	0.61	1.00						
10. CTI N T1	0.34	0.53	0.32	0.31	0.06	0.65	0.68	0.52	0.76	1.00					
11. CTI P T1	0.29	0.50	0.32	0.26	0.12	0.56	0.61	0.45	0.68	0.74	1.00				
12. SPPC Ac T1	-0.18	-0.33	-0.18	-0.17	-0.08	-0.49	-0.49	-0.38	-0.49	-0.55	-0.55	1.00			
13. SPPC Ap T1	-0.21	-0.32	-0.19	-0.18	-0.07	-0.43	-0.54	-0.29	-0.51	-0.50	-0.47	0.49	1.00		
14. SPPC B T1	-0.35	-0.33	-0.20	-0.27	0.09	-0.44	-0.37	-0.47	-0.43	-0.47	-0.41	0.49	0.36	1.00	
15. SPPC G T1	-0.30	-0.46	-0.28	-0.26	-0.08	-0.59	-0.63	-0.40	-0.71	-0.70	-0.66	0.59	0.73	0.50	1.00

Table 1 Continued

Measures	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.
16. SPPC So T1	-0.23	-0.43	-0.30	-0.29	-0.08	-0.45	-0.60	-0.30	-0.53	-0.58	-0.56	0.51	0.56	0.33	0.63
17. SPPC Sp T1	-0.13	-0.26	-0.14	-0.14	-0.22	-0.31	-0.40	-0.17	-0.35	-0.34	-0.38	0.39	0.49	0.13	0.46
18. CATS P T2	0.21	0.27	0.22	0.30	0.09	0.51	0.42	0.24	0.47	0.39	0.29	-0.31	-0.34	-0.31	-0.43
19. CATS S T2	0.16	0.35	0.26	0.31	0.09	0.29	0.42	0.17	0.31	0.29	0.27	-0.22	-0.29	-0.21	-0.34
20. CATS H T2	0.13	0.16	0.16	0.20	-0.14	0.17	0.19	0.39	0.18	0.19	0.17	-0.20	-0.20	-0.25	-0.17
21. CATS PF T2	0.12	0.27	0.21	0.25	0.10	0.38	0.33	0.18	0.42	0.32	0.29	-0.25	-0.30	-0.25	-0.40
22. CTI P T2	0.15	0.26	0.14	0.22	0.04	0.40	0.34	0.25	0.44	0.45	0.31	-0.35	-0.30	-0.27	-0.41
23. CTI N T2	0.15	0.28	0.19	0.18	0.04	0.37	0.37	0.31	0.43	0.46	0.44	-0.37	-0.28	-0.33	-0.40
24. SPPC Ac T2	-0.11	-0.19	-0.17	-0.17	-0.03	-0.34	-0.34	-0.31	-0.35	-0.33	-0.31	0.57	0.34	0.39	0.39
25. SPPC Ap T2	0.01	-0.19	-0.12	-0.15	-0.13	-0.33	-0.37	-0.15	-0.36	-0.41	-0.31	0.37	0.62	0.31	0.50
26. SPPC B T2	-0.12	-0.19	-0.22	-0.14	0.13	-0.25	-0.20	-0.29	-0.27	-0.38	-0.28	0.32	0.19	0.54	0.29
27. SPPC G T2	-0.12	-0.20	-0.21	-0.24	-0.02	-0.35	-0.34	-0.17	-0.42	-0.44	-0.35	0.40	0.51	0.36	0.53
28. SPPC So T2	-0.15	-0.26	-0.19	-0.26	-0.01	-0.29	-0.32	-0.12	-0.30	-0.36	-0.33	0.23	0.38	0.17	0.36
29. SPPC Sp T2	-0.01	-0.11	-0.14	-0.11	-0.13	-0.19	-0.25	-0.12	-0.23	-0.28	-0.23	0.21	0.42	0.13	0.29
30. Adult S T1	-.12	-.04	-.12	.08	.08	-.11	-.01	-.14	-.08	-.15	-.08	.03	.01	.08	.04
31. Peer S T1	-.12	-.08	.08	-.11	-.01	-.14	-.07	-.15	-.08	.03	.01	.08	.04	.00	.01
Mean	4.63	5.91	0.06	0.06	0.51	16.92	11.77	21.60	15.16	25.36	26.53	11.99	12.26	13.85	14.25
SD	2.19	2.54	0.13	0.12	0.50	8.17	6.13	8.47	8.34	6.037	6.90	4.66	5.15	4.10	4.40

Measures	16.	17.	18.	19.	20.	21.	22.	23.	24.	25.	26.	27.	28.	29.	30.	31.
16. SPPC So T1	1.00															
17. SPPC Sp T1	0.48	1.00														
18. CATS P T2	-0.34	-0.30	1.00													
19. CATS S T2	-0.47	-0.37	0.70	1.00												
20. CATS H T2	-0.23	-0.20	0.58	0.59	1.00											
21. CATS PF T2	-0.37	-0.30	0.79	0.80	0.55	1.00										
22. CTI P T2	-0.40	-0.30	0.63	0.66	0.53	0.77	1.00									
23. CTI N T2	-0.39	-0.35	0.48	0.59	0.42	0.66	0.74	1.00								
24. SPPC Ac T2	0.33	0.29	-0.37	-0.41	-0.37	-0.42	-0.52	-0.58	1.00							
25. SPPC Ap T2	0.42	0.42	-0.39	-0.51	-0.31	-0.48	-0.53	-0.58	0.45	1.00						
26. SPPC B T2	0.27	0.16	-0.28	-0.26	-0.38	-0.31	-0.45	-0.49	0.54	0.34	1.00					
27. SPPC G T2	0.52	0.40	-0.54	-0.60	-0.40	-0.65	-0.68	-0.69	0.56	0.71	0.54	1.00				
28. SPPC So T2	0.57	0.47	-0.44	-0.60	-0.34	-0.55	-0.58	-0.61	0.45	0.52	0.30	0.63	1.00			
29. SPPC Sp T2	0.36	0.66	-0.32	-0.39	-0.23	-0.38	-0.42	-0.51	0.50	0.47	0.33	0.53	0.54	1.00		
30. Adult S T1	-.09	-.13	-.06	-.01	-.11	-.12	-.07	-.16	.07	-.03	.13	.11	.03	-.10	1.00	
31. Peer S T1	.00	.01	-.07	-.09	-.07	-.10	-.12	-.10	.03	.08	.08	.05	.16	.02	-.01	1.00
Mean	11.77	11.70	15.10	17.65	21.79	15.00	25.00	26.00	11.77	11.47	13.43	13.98	12.25	11.55	0.23	.07
SD	5.13	4.75	6.88	9.41	9.18	8.43	6.63	7.29	4.900	5.78	4.59	4.50	5.24	5.21	.26	.12

Note. SR P TPV = Self-report Physical TPV; SR R TPV = Self-report Relational TPV, PN P TPV = Peer-nominated Physical TPV; PN R TPV = Peer-nominated Relational TPV; CATS = Children’s Automatic Thoughts Scale (P = Physical; S = Social; H = Hostility; PF = Personal Failure); CTI = Cognitive Triad Inventory for Children (P = Positive; N = Negative); SPPC= Self-perception Profile for Children (Ac = Academic; Ap = Appearance; B = Behavior; G = Global; So = Social; Sp = Sport), Adult S = Adult Support Seeking; Peer S = Peer Support Seeking; The SPPC is scaled in the opposite direction of the CATS and CTI. For $r > .08$, $p < .05$; when $r > .11$, $p < .01$; when $r > .14$, $p < .00$

Goal 1

The first half of goal 1 was to test the hypotheses that TPV predicts increases in negative self-cognitions and decreases in positive self-cognitions over time. To test this hypothesis, we ran a family of multiple regression models. Each cognitive variable at Time 2 was regressed onto the Time 1 measure of the dependent variable, gender, and Time 1 measures of physical and relational victimization. Nine of these analyses yielded significant results (see Table 2). Either self-reported or peer-nominated *Relational TPV* at Time 1 predicted *increases* in Time 2 *negative* self-cognitions as assessed by all four subscales of the CATS and the negative cognitions subscale of the CTI, and predicted *decreases* in *positive* self-cognitions as assessed by the physical appearance and social acceptance subscales of the SPPC. Peer-nominated *Physical TPV* at Time 1 predicted *increases* in Time 2 scores on the negative cognitions subscale of the CTI and *decreases* in scores on the behavioral conduct subscale of the SPPC.

The second half of goal 1 was to test the hypothesis that Relational TPV will predict self-cognitions even after controlling for Physical TPV, but Physical TPV will not predict self-cognitions over-and-above Relational TPV. This hypothesis was partially supported. Out of the nine significant regressions described above and reported in Table 2, seven showed that Relational TPV was significant and Physical TPV was not, one showed that Physical TPV was significant and Relational TPV was not, and one showed that both Relational and Physical TPV were significant predictors.

Table 2

Relations between TPV and Negative and Positive Self-Cognitions

Predictor	Unst. B	SE(B)	<i>b</i>	<i>t</i>	<i>p</i>
DV = CATS Physical: Feeling Physically Threatened Time 2					
CATS Physical Time 1	0.423	0.046	0.51	9.126	< .001
Sex	-0.219	0.809	-0.016	-0.271	0.787
Physical TPV (PN)	-0.316	0.424	-0.046	-0.745	0.456
Relational TPV (PN)	1.243	0.411	0.18	3.023	0.003
DV = CATS Social: Feeling Socially Threatened Time 2					
CATS Social Time 1	0.344	0.085	0.335	4.041	< .001
Sex	-1.095	1.221	-0.058	-0.897	0.37
Physical TPV (SR)	0.026	0.299	0.006	0.086	0.932
Relational TPV (SR)	0.607	0.307	0.165	1.976	0.048
DV = CATS Social: Feeling Socially Threatened Time 2					
CATS Social Time 1	0.383	0.063	0.376	6.054	< .001
Sex	0.367	1.176	0.02	0.312	0.755
Physical TPV (PN)	0.827	0.591	0.088	1.4	0.162
Relational TPV (PN)	1.32	0.585	0.14	2.258	0.024
DV = CATS Hostility: Feeling Hostility Toward Others Time 2					
CATS Hostility Time 1	0.384	0.064	0.358	5.976	< .001
Sex	-3.715	1.111	-0.206	-3.344	< .001
Physical TPV (PN)	-0.716	0.586	-0.078	-1.221	0.222
Relational TPV (PN)	1.725	0.571	0.188	3.023	0.003
DV = CATS Personal Failure: Self-perceptions of Failure Time 2					
CATS Personal Failure Time 1	0.412	0.06	0.418	6.9	< .001
Sex	0.558	1.039	0.033	0.537	0.591
Physical TPV (PN)	0.06	0.542	0.007	0.111	0.911
Relational TPV (PN)	1.169	0.517	0.139	2.262	0.024
DV = CTI Negative: Negative View of Self, World, and Future Time 2					
CTI Negative Time 1	0.502	0.061	0.481	8.19	< .001
Sex	-0.261	0.883	-0.018	-0.295	0.768
Physical TPV (PN)	-0.946	0.468	-0.129	-2.019	0.043
Relational TPV (PN)	1.142	0.451	0.156	2.534	0.011
DV = SPPC Appearance: Self-perceived Physical Attractiveness Time 2					
SPPC Appearance Time 1	0.709	0.056	0.637	12.689	< .001
Sex	-0.416	0.646	-0.036	-0.644	0.52
Physical TPV (SR)	-0.049	0.14	-0.021	-0.349	0.727
Relational TPV (SR)	0.319	0.156	0.121	2.047	0.041

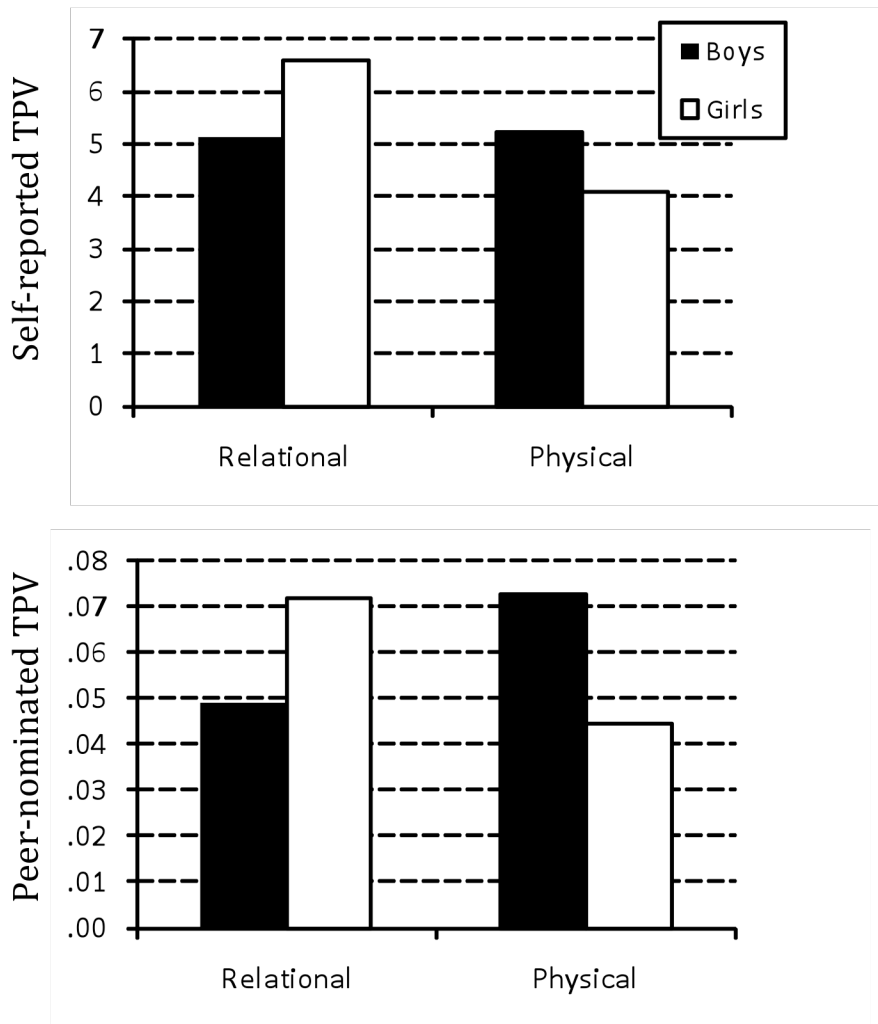
DV = SPPC Behavior: Self-perceived Behavioral Competence Time 2					
SPPC Behavior Time 1	0.595	0.058	0.538	10.284	< .001
Sex	0.492	0.523	0.054	0.941	0.347
Physical TPV (PN)	-0.821	0.276	-0.178	-2.97	0.003
Relational TPV (PN)	0.37	0.278	0.08	1.334	0.182
DV = SPPC Social: Self-perceived Social Competence Time 2					
SPPC Social Time 1	0.561	0.054	0.553	10.359	< .001
Sex	-0.123	0.596	-0.012	-0.206	0.837
Physical TPV (PN)	0.255	0.321	0.049	0.795	0.427
Relational TPV (PN)	-0.62	0.312	-0.118	-1.991	0.047

Goal 2

Our second goal was to test the hypotheses that girls experience more relational victimization than do boys and that boys experience more physical victimization than do girls. To test these hypotheses, we ran a series of regression models. Each measure of Physical TPV was regressed onto gender and a comparable measure of Relational TPV. Likewise, each measure of Relational TPV was regressed onto gender and a comparable measure of Physical TPV. Gender was coded as 0 for boys and 1 for girls, meaning that positive beta weights for gender indicate that girls experienced more TPV than boys. Results indicates that (a) when self-reported Physical TPV was statistically controlled, girls reported more Relational TPV than did boys did ($\beta = 0.29, p < .001$), (b) when peer-nominated Physical TPV was controlled, girls had higher Relational TPV scores than did boys ($\beta = 0.11, p = .001$), (c) when self-reported Relational TPV was controlled, boys reported more physical TPV than did girls ($\beta = -0.26, p < .001$), and (d) when peer-reported Relational TPV was controlled, boys had higher physical victimization scores than did girls ($\beta = -0.13, p < .001$). As depicted in Figure 1, these adjusted mean differences supported our hypotheses.

Figure 1

Adjusted means for relational and physical victimization broken down by gender.



Goal 3

Our third goal was to test the hypothesis that girls would be more willing to seek social support following a victimization experience than would boys. Toward this goal, we conducted two multiple regression analyses. Peer Support was regressed onto Gender and Adult Support. Likewise, Adult Support was regressed onto Gender and Peer Support. Gender was coded as 0 for boys and 1 for girls, meaning that positive beta weights for gender indicate that girls report more social support seeking than boys. Results indicates that (a) when Adult Support was statistically controlled, there was no significant gender difference in willingness to seek Peer Support and (b) when Peer Support was controlled, girls were more likely to indicate they would seek Adult Support than were boys ($\beta = 0.12, p = .031$).

Goal 4

Our fourth goal was to test for gender differences in the relations of TPV to positive and negative self-cognitions. Toward this goal, we conducted a series of multiple regression analyses. In each analysis, a measure of self-cognition at Time 2 was regressed onto that measure at Time 1, Gender, a measure of TPV, and the TPV x Gender interaction. When the TPV x Gender interaction was significant, we conducted a simple slope analyses to determine if the relation between TPV and self-cognitions was significant for each gender. As shown in Table 3, 14 significant interactions emerged, all with highly consistent interpretations.

Table 3

Gender Differences in the Relations between TPV and Self-Cognitions

Predictor	Unst. <i>B</i>	<i>SE(B)</i>	<i>b</i>	<i>t</i>	<i>p</i>
DV = CATS Physical: Feeling Physically Threatened Time 2					
CATS Physical Time 1	0.44	0.50	0.52	8.79	< .001
Sex	-0.01	0.68	0.00	-0.01	0.989
Physical TPV (SR)	1.25	0.53	0.17	2.33	0.020
Sex x Physical TPV (SR)	-1.74	0.79	-0.15	-2.20	0.028
DV = CATS Physical: Feeling Physically Threatened Time 2					
CATS Physical Time 1	0.46	0.06	0.49	8.18	< .001
Sex	-2.21	2.80	-0.04	-0.79	0.431
Physical TPV (PN)	7.10	1.89	0.24	3.76	< .001
Sex x Physical TPV (PN)	-11.18	3.14	-0.23	-3.56	< .001
DV = CATS Physical: Feeling Physically Threatened Time 2					
CATS Physical Time 1	0.45	0.05	0.54	9.93	< .001
Sex	-0.23	0.63	-0.02	-0.37	0.715
Relational TPV (PN)	1.71	0.48	0.25	3.59	< .001
Sex x Relational TPV (PN)	-1.64	0.68	-0.17	-2.40	0.016
DV = CATS Social: Feeling Socially Threatened Time 2					
CATS Social Time 1	0.44	0.06	0.44	7.30	< .001
Sex	-0.10	0.91	-0.01	-0.11	0.915
Physical TPV (PN)	2.72	0.60	0.29	4.52	< .001
Sex x Physical TPV (PN)	-3.24	0.98	-0.21	-3.30	< .001
DV = CATS Social: Feeling Socially Threatened Time 2					
CATS Social Time 1	0.37	0.08	0.35	4.49	< .001
Sex	-0.99	0.92	-0.05	-1.08	0.282
Relational TPV (SR)	3.69	1.07	0.37	3.46	< .001
Sex x Relational TPV (SR)	-3.35	1.18	-0.26	-2.85	0.004
DV = CATS Hostility: Feeling Hostility Toward Others Time 2					
CATS Hostility Time 1	0.44	0.06	0.41	6.83	< .001
Sex	-2.13	0.86	-0.12	-2.46	0.014
Physical TPV (PN)	1.38	0.60	0.15	2.30	0.022
Sex x Physical TPV (PN)	-2.16	0.99	-0.14	-2.18	0.029
DV = CATS Hostility: Feeling Hostility Toward Others Time 2					
CATS Hostility Time 1	0.39	0.08	0.35	5.21	< .001
Sex	-2.62	0.94	-0.14	-2.80	0.005
Relational TPV (SR)	2.13	1.05	0.22	2.04	0.041

Sex x Relational TPV (SR)	-2.33	1.19	-0.18	-1.96	0.05
DV = CATS Hostility: Feeling Hostility Toward Others Time 2					
CATS Hostility Time 1	0.43	0.06	0.40	6.76	< .001
Sex	-2.12	0.86	-0.12	-2.48	0.013
Relational TPV (PN)	2.07	0.67	0.23	3.11	0.002
Sex x Relational TPV (PN)	-1.94	0.96	-0.15	-2.03	0.042
DV = CATS Personal Failure: Self-perceptions of Failure Time 2					
CATS Personal Failure Time 1	0.45	0.06	0.47	7.58	< .001
Sex	0.40	0.81	0.02	0.49	0.624
Physical TPV (PN)	1.44	0.55	0.17	2.65	0.008
Sex x Physical TPV (PN)	-2.27	0.91	-0.16	-2.50	0.013
DV = CATS Personal Failure: Self-perceptions of Failure Time 2					
CATS Personal Failure Time 1	0.41	0.07	0.40	5.71	< .001
Sex	0.03	0.83	0.00	0.04	0.972
Relational TPV (SR)	2.58	0.93	0.29	2.77	0.006
Sex x Relational TPV (SR)	-3.06	1.06	-0.26	-2.88	0.004
DV = SPPC Academic: Self-perceived Academic Competence Time 2					
SPPC Academic Time 1	0.61	0.05	0.59	11.91	< .001
Sex	0.10	0.44	0.01	0.23	0.822
Physical TPV (PN)	-0.84	0.30	-0.17	-2.78	0.005
Sex x Physical TPV (PN)	1.41	0.49	0.17	2.89	0.004
DV = SPPC Social: Self-perceived Social Competence Time 2					
SPPC Social Time 1	0.58	0.05	0.57	11.20	< .001
Sex	0.10	0.49	0.01	0.21	0.831
Physical TPV (SR)	-0.90	0.39	-0.16	-2.34	0.019
Sex x Physical TPV (SR)	1.47	0.58	0.16	2.52	0.012
DV = SPPC Social: Self-perceived Social Competence Time 2					
SPPC Social Time 1	0.60	0.06	0.58	10.52	<.001
Sex	0.26	0.49	0.03	0.53	0.600
Relational TPV (SR)	-0.96	0.52	-0.17	-1.84	0.066
TPV x Sex	1.51	0.61	0.21	2.46	0.014
DV = SPPC Sports: Self-perceived Athletic Competence Time 2					
SPPC Sport Time 1	0.73	0.05	0.68	14.62	< .001
Sex	0.19	0.46	0.02	0.40	0.688
Physical TPV (PN)	-0.41	0.31	-0.08	-1.35	0.178
Sex x Physical TPV (PN)	1.12	0.50	0.13	2.27	0.023

Eight of these involved an interaction between Gender and Physical TPV. Depicted in Figure 2, Physical TPV was more strongly (and *positively*) related to negative self-cognitions for boys than for girls, on all subscales of the CATS. Also depicted in Figure 2, Physical TPV was more strongly (and *negatively*) related to positive self-cognitions for boys than for girls on the social acceptance, academic competence, and sports competence subscales of the SPPC. Simple slope analyses revealed that the relation was much more likely to be significant for boys than for girls (see the p-values associated with each of the Figure 2 regression lines).

The other six significant tests involved interactions between Gender and Relational TPV. Depicted in Figure 3, Relational TPV was more strongly (and *positively*) related to negative self-cognitions for boys than for girls on all subscales of the CATS. Also depicted in Figure 2, Relational TPV was more strongly (and *negatively*) related to scores on the social acceptance subscale of the SPPC for boys than for girls. Simple slope analyses revealed that the relation was typically significant for boys but not for girls (see the p-values associated with each of the Figure 3 regression lines).

Figure 2. Gender differences in the relation between physical TPV and multiple measures of self-cognition (Note: PN = peer nomination; SR = self-report).

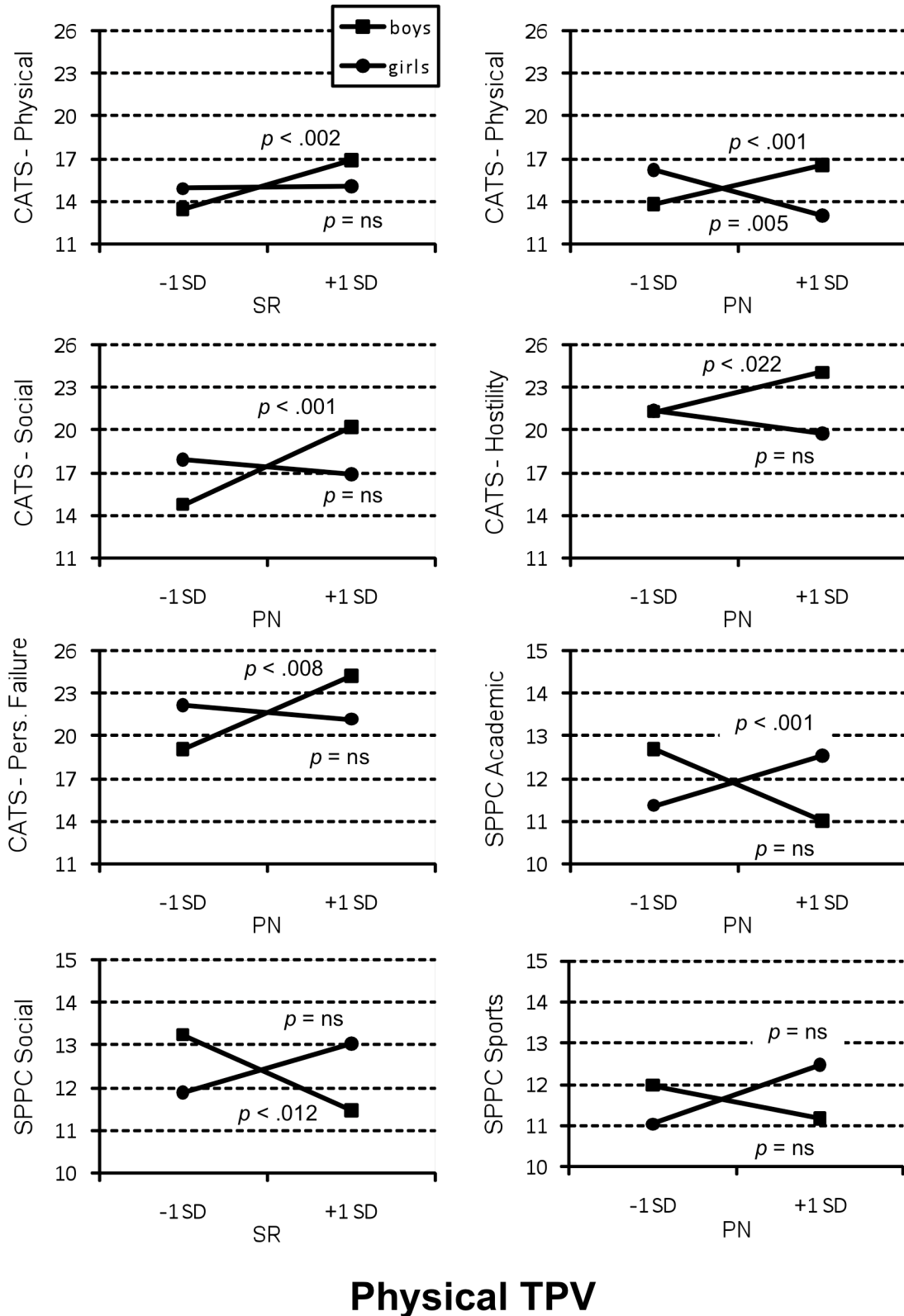
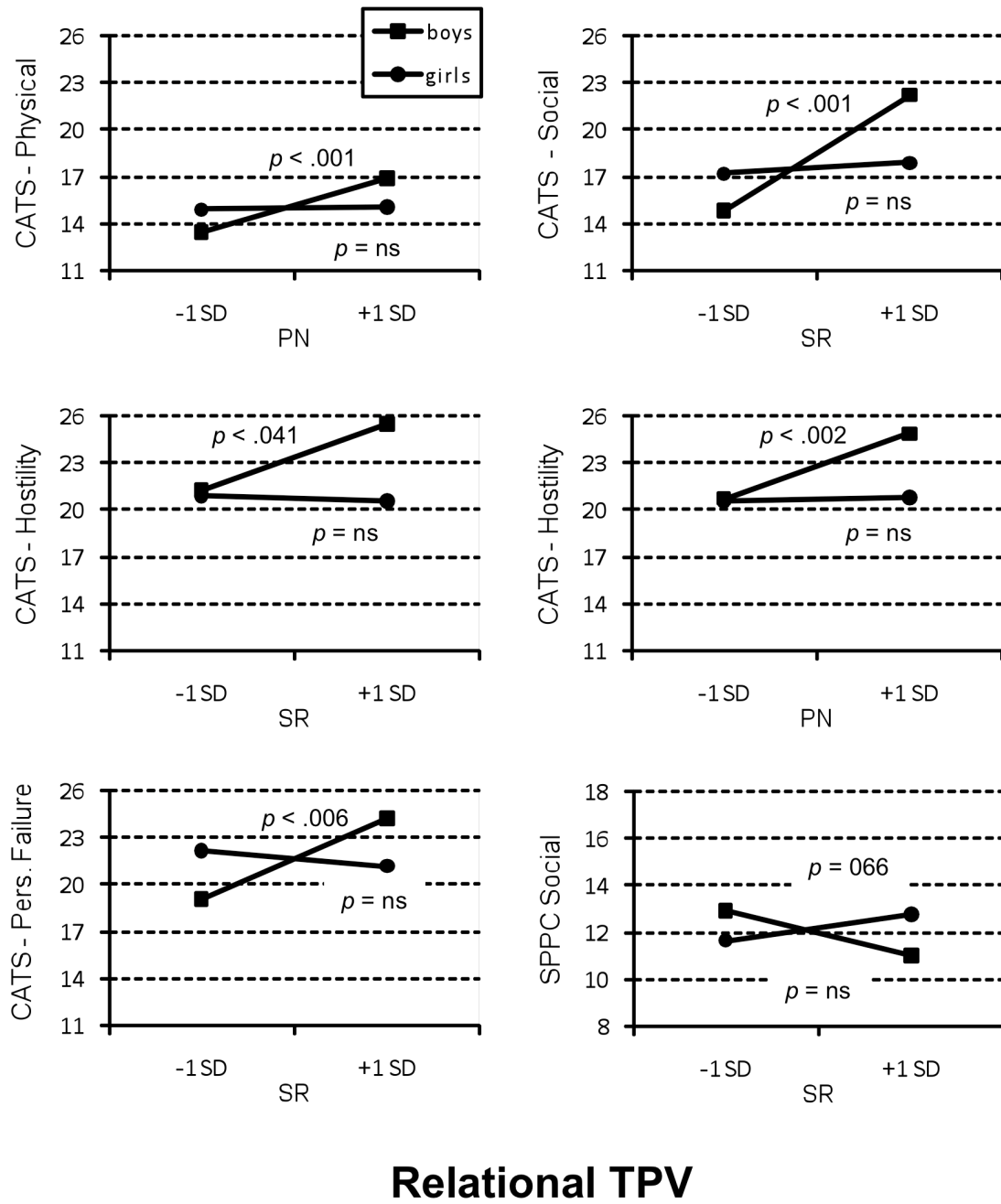


Figure 3. Gender differences in the relation between relational TPV and self-cognitions

(Note: PN = peer nomination; SR = self-report).



CHAPTER IV

DISCUSSION

Five major findings emerged from the current study. First, in a sample of children and adolescents, TPV predicted increases in negative self-cognitions and decreases in positive self-cognitions over a one-year time interval. Second, after controlling for the overlap between relational and physical TPV, evidence supporting the prospective relation of relational TPV to negative cognitions was stronger than evidence supporting the predictive utility of physical TPV. Third, the prospective relation between TPV and self-cognitions was stronger for boys than for girls. Fourth, girls were more likely to report willingness to seek adult support following a hypothetical TPV experience than were boys. Fifth, when the overlap between relational and physical TPV was statistically controlled, girls experienced more relational TPV than did boys, and boys experienced more physical TPV than did girls. Each of these results is elaborated below.

First, the data supported our hypothesis that TPV would predict increases in negative self-cognitions and decreases in positive self-cognitions during middle childhood and early adolescence over the course of one calendar year. Pooling across analyses of both self-report and peer-nomination measures of victimization, a wide variety of cognitions were affected, including their perceptions of themselves as a failure, physically unattractive, socially incompetent, and angry. TPV also affected perceptions of the world as a physically and socially threatening place. Compared to non-victimized children, children who experienced TPV generally developed more negative views of

themselves, their worlds, and their futures over time. Although both positive and negative self-cognitions were affected by TPV, more significant results emerged for measures of negative cognitions than positive.

These findings provide support for several theoretical positions. Symbolic interactionism and the “looking glass” model suggest self-perceptions derive at least in part out of our perceptions of others’ views of us (Cooley, 1902; Mead, 1913). Support for such models has tended to be stronger among children and adolescents than adults (Cole, 1991; Shrauger & Schoeneman, 1979), a finding commensurate with the idea that a major developmental task of middle childhood is the development of self-concept and self-perceived competence (Cole, Jacquez, & Maschman, 2001; Cole, Maxwell, & 1997; Garber, 1984; Harter, 2003). The key to the viability of such models is identifying key mechanisms whereby children become aware of others’ perceptions of themselves. The current study supports the idea that peer victimization experiences represent one such mechanism. The current study also provides an initial stage of support for our speculation that increases in negative self-cognition and decreases in positive self-cognition constitute vehicles through which peer victimization can lead to depression in children and adolescents (Cole et al., 2010). We hasten to note, however, that mediation is a causal chain. The current study supports the first link of this chain, connecting TPV to self-cognition. Other studies support the second link, connecting self-cognition to depression in children (Berg & Klinger, 2009; Uhrlass, Schofield, Coles, & Gibb, 2009; Cole, 1990). An important avenue for future research will be longitudinal mediational analyses assessing the degree to which changes in self-cognition explain the longitudinal connection between TPV and depression in children and adolescents.

In a closely related vein, our second finding was that relational TPV was more often associated with these negative cognitive outcomes than was physical TPV, even after controlling for the common co-occurrence of these two forms of victimization. This result expands upon our previous cross-sectional findings (Cole et al., 2010), suggesting that relational TPV is the more harmful form of victimization at least insofar as children's cognitive and emotional well-being are concerned. Several explanations for this finding are possible: (a) Relational victimization may convey negative information of a more personal nature than does physical victimization; (b) Relational TPV may be harder to counteract, as reputational bias is difficult to reverse; (c) Relational TPV is often more difficult to defend against, as the victim may not even be aware of the perpetrator's identity (Mynard & Joseph, 2000). Understanding the reasons why relational victimization appears to be more toxic than physical victimization is an important area for future research.

Third, we found that the prospective relation between TPV and self-cognitions was stronger for boys than for girls. Indeed, many of our analyses suggested that the detrimental effect of TPV on several types of self-cognition was significant for boys and not for girls. Our findings are commensurate with Prinstein et al.'s (2001) results suggesting that victimization was more strongly associated with depressive symptoms for boys than for girls. Although the current study did not include direct measures of variables that might account for this effect, we hypothesize that the difference may be due to developmental differences in the social worlds of boys and girls. As boys enter into middle childhood, they become less likely than girls to turn to peers, teachers, or parents for social support (e.g., Frydenberg & Lewis, 1993), making TPV particularly

damaging at this time. Our fourth finding that girls were more likely to indicate they would seek adult support following hypothetical victimization experiences than were boys supports this view. Boys' lack of willingness to seek adult support is unfortunate given that seeking support following victimization can mitigate some of its negative effects (Flaspohler, Elfstrom, Vanderzee, Sink, & Birchmeier, 2009; Holt & Espelage, 2007). For example, Holt and Espelage (2007) found that victimized youth who reported at least a moderate level of social support had less anxiety and depression symptoms than victims without a supportive network. Boys who seek help for such problems may even be perceived as weak (by both peers and adults), potentially exacerbating the effect of victimization on self-perceptions. We hasten to note, however, that large individual differences exist within (as well as between) the genders, paving the way for the examination of social support as a possible mediator. Because we collected data on hypothetical support seeking, we were unable to test whether children and adolescents' levels of social support mediated the relation between TPV and self-cognition in this study. Future research should assess whether our finding that girls report more willingness to seek adult support following hypothetical victimization than do boys replicates to real world instances of victimization and if so, whether girls' increased social support partially explains the lack of impact of TPV on their self-perceptions.

Fifth, we found differences in the relative degree to which boys and girls were targeted by peers for relational versus physical victimization. As we predicted, self-report and peer nomination measures revealed that girls experience more relational victimization than do boys, and that boys experience more physical victimization than do girls, at least when the overlap between these types of victimization is statistically

controlled. Gender differences in the perpetration of relational and physical aggression have been well documented (Crick & Grotpeter, 1995), but gender differences in the receipt of victimization have been less consistent. Following the recommendation of Smith et al. (2010) and controlling for one type of TPV while testing for gender differences in the other helped to clarify the issue. Combining this result with the previous finding leads to the interesting conclusion that although girls experience more relational TPV than do boys, boys are more adversely affected by relational TPV than are girls.

Implications for Research, Policy, and Practice

Results of the current study have several important clinical implications. First, finding that relational TPV increases the strength of negative self-cognitions, coupled with the knowledge that negative self-cognitions increase risk for depression, suggests that victims of relational TPV are at increased risk for depression. Teachers, school officials, and parents should be aware that for every perpetration of peer victimization, there is a victim who warrants intervention as much as the bullies do.

Second, our results suggest that negative self-cognitions may be more easily affected by peer victimization than are positive self-cognitions. This finding suggests a point of entry for cognitive behavioral therapists working with victimized youths. More specifically, victimized youths may retain some domains of positive self-cognition that can be called upon during intervention efforts to prevent the emergence of depressive symptoms.

Third, the fact that relational victimization appears to be more damaging than

physical victimization is ironic given that the very idea of relational aggression was first studied only 16 years ago (Crick, 1995). Policy implications clearly emerge. Although many schools have anti-bullying programs, most of these focus on physical victimization. These programs are an important step in the right direction; however, they should be expanded to include relational victimization as well. This expansion will not be easy, as relational aggression is much more difficult to detect and its victims more difficult to identify. Because of this, individual interventions for victims will not always be feasible. Relational aggression must be recognized as part of a broader social problem, requiring school-wide changes. School-based social skills training programs appear to have positive effects on both perpetrators and victims (e.g., Bradshaw, Sawyer, & O'Brennan, 2009; Card & Hodges, 2008; Hanish & Guerra, 2000; Jenson & Dieterich, 2007; Kazdin, Esveldt-Dawson, French, & Unis, 1987). An important avenue for future work includes the examination of the effects of prevention programs such as the Social Skills Group Intervention (DeRosier, 2002), the Steps to Respect Program (Frey, Hirschstein, Edstrom, & Snell, 2009), and the Olweus Bullying Prevention Program (Olweus et al., 2007) on relational and not just physical aggression.

Shortcomings of the study suggest avenues for future research. One concern is the fact that we did not obtain information about the aggressors. Victims who are also perpetrators may be very different from youth who are victims only. Distinguishing between subtypes of victims may lead to even cleaner findings and facilitate better matching of individuals to specific interventions. Second, the responses to victimization measure used free response to assess reactions to peer victimization. Directly asking about social support may lead to stronger findings. In addition, the measure asked about

hypothetical instances of peer victimization as opposed to real life ones. What children and adolescents say they will do following peer victimization may be quite different from what they actually do. Future studies should ask participants to recall past victimization experiences and report what they did afterwards. Third, although the current study was longitudinal, it was not experimental. Without random assignment to treatment and control conditions, strong causal inferences about the relation of victimization to depressive cognitions are not possible. Carefully controlled prevention studies could significantly enhance our understanding of cause-effect relations in this domain. Finally, the current findings have led us to speculate about the role of enhanced negative self-cognitions as a mediator of the relation between victimization and depression. Such conclusions, however, await multi-wave longitudinal investigations in which victimization, cognition, and depression are all tracked over time.

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