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Prospective Associations Between Peer Victimization and Internalizing Symptoms in Adolescence: The Protective Role of Hope

Brianna T. Ricker[1] · John L. Cooley[1] · Carlos R. Sanchez[1] · Elizabeth M. Gunder[1] · Jocelyn A. Dooley[1] · Megan Chilton[1] · Lorie A. Ritschel[2,3]

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Abstract

Youth who experience aggression at the hands of peers are at an increased risk for a variety of adjustment difficulties, including depressive and anxiety symptoms and lower self-esteem. The links between peer victimization and internalizing problems are robust, but less work has been done to identify individual-level protective factors that might mitigate these outcomes. The current study investigated whether hope served as a moderator of the prospective links from peer victimization to depressive and anxiety symptoms and self-esteem during adolescence. Participants included 166 high school students (64% female; 88% Black/African American). Youth completed self-report measures at three different time points across the Spring semester of an academic year. As predicted, hope interacted with peer victimization to predict changes in depressive and anxiety symptoms over the course of the semester. That is, for youth with low levels of hope, peer victimization predicted more stable patterns of depressive and anxiety symptoms. For adolescents with average levels of hope, however, peer victimization did not influence anxiety and depressive symptoms over time. Finally, for adolescents with high levels of hope, peer victimization predicted greater decreases in anxiety symptoms over time. Hope did not interact with peer victimization to predict self-esteem. Rather, hope uniquely predicted higher levels of self-esteem, whereas peer victimization uniquely predicted lower levels of self-esteem. The current study provides initial support for the notion that hope can serve as a protective factor among youth who are victims of peer aggression.

Keywords Peer victimization · Hope · Anxiety · Depression · Self-esteem

Peer victimization, or the experience of aggressive acts by peers, is common among youth and is associated with a host of negative psychosocial outcomes, including internalizing problems (i.e., emotional problems associated with anxiety and depressive disorders), that can persist throughout the lifespan (McDougall & Vaillancourt, 2015; Reijntjes et al., 2010). Given the negative outcomes that are associated with peer victimization and their potential lasting effects, it is important to identify protective factors that might mitigate these associations. Hope—a cognitive, motivational set comprised of goals, motivation to achieve goals, and the strategies developed to achieve a goal—is best conceptualized as a trait variable that has been shown to be related to a host of important psychosocial outcomes (Snyder, 2002; Snyder et al., 2003). Among youth, higher levels of hope are associated with lower internalizing problems as well as higher levels of self-esteem (e.g., Vacek et al., 2010; Valle et al., 2006). There is also some evidence to suggest that hope may serve as a protective factor in the face of stressful life events (e.g., Valle et al., 2006). Therefore, the goal of the current short-term longitudinal study was to examine whether hope moderates the prospective associations between peer victimization and internalizing symptoms over a 4-month period during adolescence.

✉ Brianna T. RickerM.S.
brianna.ricker@ttu.edu

[1] Department of Psychological Sciences, Texas Tech University, Box 42051 Lubbock, TX 79409-2051, USA

[2] University of North Carolina School of Medicine, Chapel Hill, NC, USA

[3] Triangle Area Psychology Clinic, Durham, NC, USA

Peer Victimization

Peer victimization is a troubling and pervasive problem among youth today. In fact, one longitudinal study found that 24% of children experienced chronic victimization from kindergarten through 12th grade (Ladd et al., 2017). Adolescents who are victimized by peers are at an increased risk for a variety of negative psychosocial outcomes, including depression, anxiety, suicidal ideation, conduct problems, lower school performance, and a negative attitude toward school (Halliday et al., 2021). Experiences of victimization can be physical (i.e., being hit, kicked, pushed, chased, or threatened by a peer; Crick et al., 1999) or relational (i.e., experiencing an attempt by a peer to damage one's social relationships or status through behaviors such as gossip, rumor spreading, and ostracism; Crick & Gropter, 1996). Many youth, however, experience both physical and relational victimization simultaneously (Casper & Card, 2016; Nylund et al., 2007), and prior work has shown that adolescents perceive different forms of victimization as equally distressing (Nishina & Juvonen, 2005). Additionally, physical and relational victimization both make similar contributions to the prediction of youth's daily and long-term adjustment (e.g., Nishina & Juvonen, 2005; Rudolph et al., 2014); thus, the impact of peer victimization may best be understood by considering its frequency rather than its specific forms.

Youth who experience peer victimization are more likely to exhibit symptoms of depression and anxiety, and evidence suggests that these effects can persist over time (McDougall & Vaillancourt, 2015; Reijntjes et al., 2010). For example, one longitudinal study found that youth who reported victimization in 5th grade showed higher levels of depressive symptoms in 10th grade (Bogart et al., 2014). Other findings have demonstrated that peer victimization predicts subsequent increases in anxiety symptoms (Lewis & Araya, 2014; Stapinski et al., 2015). Furthermore, youth who are victimized during childhood and adolescence are more likely to be diagnosed with either a depressive or anxiety disorder in young adulthood (Copeland et al., 2013; Lewis & Araya, 2014).

Prior work has shown that internalizing problems and self-esteem are significantly associated (Sowislo & Orth, 2013; Steiger et al., 2015), with evidence suggesting that there is a bidirectional association between these constructs (Saint-Georges & Vaillancourt, 2020). Further, evidence also indicates that there are transactional associations between peer victimization, self-esteem, and internalizing problems (Saint-Georges & Vaillancourt, 2020). That is, Saint-Georges and Vaillancourt (2020) found evidence of a cascading model whereby lower self-esteem predicted increases in depressive symptoms, which predicted subsequent increases peer victimization. Additionally, lower self-esteem predicted increases in depressive symptoms (Saint-Georges & Vaillancourt, 2020). Peer victimization may also have a negative impact on self-esteem (van Geel et al., 2018). That is, youth who are victimized by peers are more likely to exhibit lower self-esteem both concurrently (Malecki et al., 2015; Tsaousis, 2016; Salmivalli & Isaacs, 2005) and over time (Bogart et al., 2014; Boulton et al., 2010; Overbeek et al., 2010; van Geel et al., 2018). In fact, previous studies have shown that children and adolescents who experienced peer victimization had lower global self-worth and perceptions of social acceptance 6-months later (Boulton et al., 2010) and lower self-esteem 1 year later (Overbeek et al., 2010). Moreover, a recent meta-analysis with 16,230 youth showed that peer victimization was associated with decreased self-esteem over time (van Geel et al., 2018). Taken together, there is a need for additional research to identify protective factors that may buffer youth from the harmful effects of peer victimization on internalizing problems over time.

Hope

Hope can be conceptualized as a cognitive, motivational set that is comprised of goals, agency thinking, and pathways thinking (Snyder, 1994; 2002). Goals reflect the mental endpoints of purposeful behavior and are considered to be the anchors of hope theory. One can have short-term goals (e.g., going for a 10-minute walk), or long-term goals that require more planning and initiative (e.g., running a marathon). Further, goals can either stand-alone, or they can be subgoals of a larger, more complex goal (e.g., running a mile before running a marathon). Agency thinking involves the motivation required to initiate or sustain movement toward a goal, whereas pathways thinking refers to the routes that are developed in order to meet a goal. For example, if one had a goal of getting into college, pathways thinking would involve determining the routes needed to meet that goal, such as studying for standardized exams, doing well in school, and getting letters of recommendation from teachers. Agency thinking, on the other hand, involves having the motivation and self-talk needed for goal attainment.

According to Snyder (2002), individuals with higher levels of hope tend to generate more goals, are more likely to persist in their pursuit of a goal in the face of obstacles, and are more likely to develop alternative pathways to achieve a goal if one route is blocked. Furthermore, high-hope individuals are more likely to focus on successes rather than failures while in pursuit of a goal (Snyder, 2002). Hope theory also suggests that the perception about the attainment of goals is a driving force behind emotional experiences. In

other words, perceptions of movement towards one's goal or goal attainment can contribute to positive emotions, while unsuccessful goal pursuit contributes to negative emotions (Snyder, 2002). Similarly, an individual with low levels of hope is more likely to experience negative emotions, especially when goal attainment is hindered or blocked (Snyder, 2002).

Hope, although similar, is conceptually distinct from the construct of optimism, (i.e., a cross-situational expectation for positive outcomes; Scheier & Carver, 1985; 1987). Specifically, hope theory may better explain human's goal-directed cognitions and behaviors (Snyder, 1995). Optimistic individuals may have positive beliefs about achieving a goal, which is similar to agency thinking; however, they may lack pathways cognitions (i.e., the routes that one develops to achieve their goals), which are important for goal attainment (Snyder, 1995). Hope can also be distinguished from self-efficacy. Specifically, self-efficacy theory (Bandura, 1977; 1989) suggests that there are two types of expectancies in a situation: outcome expectancies (i.e., belief in whether a behavior can achieve an outcome) and efficacy expectancies (i.e., belief that one is able to engage in the behavior needed to achieve the outcome). Outcome expectancies and efficacy expectancies are related to pathways thinking and agency thinking, respectively. However, efficacy expectancies are conceptualized as being situation specific, whereas hope theory suggests that these components are inherent to the individual apply across situations (Snyder, 1995). Further, hope theory suggests that both pathways and agency thinking are necessary for goal achievement, whereas self-efficacy theory places greater emphasis on efficacy expectancies (Snyder, 1995).

Hopeful thinking is associated with more adaptive functioning across the lifespan. For example, hope is positively associated with greater academic achievement, higher levels of perceived competence and self-esteem, and lower levels of depressive and anxiety symptoms among children and adolescents (Dixson et al., 2017; Halama & Dedova, 2007; Lewis & Kliewer, 1996; Snyder et al., 1997). Higher hope has also been linked to higher life satisfaction, (Valle et al., 2006), better social adjustment with family and friends (Kwon, 2002), greater perceived social support (Barnum et al., 1998), better academic functioning, and more school engagement (Marques et al., 2015). Similarly, compared to their low-hope counterparts, adults with higher levels of hope report fewer depressive and anxiety symptoms (Snyder et al., 1991), better academic (Chang, 1998) and athletic (Curry et al., 1997) performance in college, and higher life satisfaction (Chang, 1998).

Hope may be especially important in situations where an individual experiences environmental stressors, and some research suggests that hope serves as a protective factor against the negative outcomes associated with adverse life experiences (Valle et al., 2006; Visser et al., 2013). One investigation found that hope attenuated the effects of negative life events on depressive symptoms among a diverse sample of college students (Visser et al., 2013). In other words, high-hope individuals showed fewer depressive symptoms after experiencing negative life events. In another cross-sectional study, results showed that among youth with lower levels of hope, life satisfaction was lower for adolescents who experienced a greater number of stressful life events; for adolescents with higher levels of hope, however, life satisfaction was not associated with the number of stressful life events (Valle et al., 2006). This study also found that low-hope individuals were more likely to exhibit internalizing problems when they experienced stressful life events, whereas there was no association between stressful life events and internalizing problems for high-hope individuals. Finally, previous research has shown that hope was associated with lower levels of internalizing and externalizing problems in a sample of children whose mothers were incarcerated, even after controlling for social support and stress (Hagen et al., 2005). Taken together, there is some preliminary evidence to support the notion that hope may buffer the negative outcomes associated with experiences of peer victimization.

The Current Study

The majority of prior research on peer victimization has focused on the negative psychosocial outcomes associated with these experiences (e.g., Halliday et al., 2021) or predictors of peer aggression and victimization (e.g., Oncioiu et al., 2020). Comparatively less is known, however, regarding individual-level factors that are protective for youth who experience peer aggression. One recent study investigated whether a positive future orientation—a conceptually related but distinct concept from hope—moderated the association between peer victimization and internalizing problems among a sample of African American adolescents (Hong et al., 2021). Results indicated that a positive future orientation did not interact with peer victimization when internalizing problems was the outcome variable. However, a positive future orientation buffered the effects of peer victimization on suicidal ideation and peer aggression. It should be noted that this study was cross-sectional, and it is important to identify individual-level factors that moderate the prospective links from peer victimization to internalizing problems over time. The current study sought to address this gap in the literature by being the first study to examine whether hope moderated the longitudinal associations between peer victimization and internalizing problems.

The identification of intrapersonal strengths that buffer the negative effects associated with peer victimization could serve as a potential target for prevention and intervention efforts. Additionally, given that peer victimization during adolescence is not uncommon (e.g., Kann et al., 2018), and the negative psychosocial outcomes stemming from this interpersonal stressor can persist into adulthood (Lewis & Araya, 2014; McDougal & Vaillancourt, 2015; Stapinski et al., 2015), it is important to identify protective factors during this crucial period of development. Based on the fact that hope has previously been found to buffer the negative outcomes associated with stressful life events (Valle et al., 2006; Visser et al., 2013), we hypothesized that hope would attenuate the prospective links from peer victimization to depressive symptoms, anxiety symptoms, and self-esteem.

Method

Participants

Participants for the study included 166 adolescents (64% girls) from a high school located in a large urban school district in the Southeastern United States. All students in grades 9–12 were eligible to participate ($n = 420$). During the fall semester, consent forms were sent home to caregivers. Three hundred and twenty-eight consent forms were returned (78%), and 322 caregivers provided consent for their child's participation, which was approximately 76% of eligible adolescents. Adolescents also provided written assent prior to data collection. The overall participation rate of eligible students was 40%; data were missing for 36% of students who had transferred to another school or were absent on the days in which Time 1 data were collected. The final sample included 106 girls and 60 boys with ages ranging from 14 to 19 years ($M = 15.86$, $SD = 1.22$). Note that Time 1 outcome data were missing for two to four participants who completed the independent, but not the dependent, variable measure(s). Further, 30 participants were absent on the days in which data were collected at Time 2, 47 participants were absent at Time 3, and four participants did not complete one or more outcome measures at Time 3. A series of independent samples *t*-tests indicated that participants with missing outcome data did not differ from those with complete data on any independent or dependent variable at Time 1. Thus, these participants were retained in the final analyses.

The majority of participants self-identified as Black/African American (88%), 6% identified as Hispanic/Latinx, 3% identified as biracial/multiracial, and 3% identified as another race/ethnicity. Socioeconomic data were not collected for individual participants, but according to school records, 93% of all students were eligible for free or reduced-price lunch. At the time of data collection, the high school was located in a community in which 43% of families lived below the federal poverty line (US Census Bureau, 2011). Further, violent crime rates in the community were almost four times higher than the national average (Federal Bureau of Investigation, 2010–2014).

Procedure

The study was approved by the researchers' and the school district's Institutional Review Boards and by school administrators. Data were collected across three time points spanning a total of 4 months during the spring semester of an academic year. Data collection first took place in late January and early February (Time 1); due to time constraints, the peer victimization measure was administered 2–3 weeks after the other Time 1 study measures. Data were collected again in mid-March (Time 2), followed by a third round of data collection in mid-May (Time 3). Data collection took place during 50-minute study hall periods. Trained research assistants were present in each classroom to administer standardized instructions and answer any questions. To facilitate accurate responses and maintain confidentiality, no school staff or non-participating students were in the classrooms during data collection. The same procedures were employed across all time points. Of note, approximately 57% ($n = 94$) of participants took part in three brief informational sessions on goal setting following Time 1 data collection. However, participation in these sessions was not associated with changes in any study outcome variable[1], and therefore it was not included as a covariate in the subsequent analyses. All students were compensated for their participation with a t-shirt at the conclusion of the study.

Measures

Peer Victimization

The Revised Peer Experiences Questionnaire (RPEQ; Prinstein et al., 2001) is an 18-item self-report measure that was administered at Time 1. The current study utilized the 9-item victimization subscale, which measures physical (e.g., "A teen hit, kicked, or pushed me in a mean way") and relational (e.g., "A teen gossiped about me so that others would not like me") experiences of victimization. Participants were asked to rate how often each instance occurred on a 5-point scale ranging from 1 (*Never*) to 5 (*Several Times a*

[1] Participation in the information sessions on goal setting did not predict change in depressive symptoms ($b = -0.01$, $SE = 0.02$, $p = .68$), anxiety symptoms ($b = -0.02$, $SE = 0.02$, $p = .31$), or self-esteem ($b = -0.06$, $SE = 0.07$, $p = .38$).

Week). Items were averaged, with higher scores indicating more frequent peer victimization. The RPEQ has shown to be a reliable and valid measure of peer victimization across a variety of samples (De Los Reyes & Prinstein, 2004; Queirós & Vagos, 2016). In the current study, the internal consistency for the measure was good (α = 0.85).

Hope

The Trait Hope Scale (HS; Snyder et al., 1991) is a 12-item self-report questionnaire that was administered at Time 1. The questionnaire consists of a 4-item pathways subscale (e.g., "There are lots of ways around any problem"), a 4-item agency subscale (e.g., "My past experiences have prepared me well for my future"), and 4 filler items. Participants were asked to rate each item on an 8-point scale that ranges from 1 (*Definitely False*) to 8 (*Definitely True*). The eight agency and pathways items were averaged, with higher scores indicating higher levels of hope. The HS has demonstrated good psychometric properties among a variety of different samples, including adolescents (Babyak et al., 1993; Snyder et al., 1991). Internal consistency for the measure in this sample was adequate (α = 0.71).

Depressive Symptoms

The Beck Depression Inventory, 2nd Edition (BDI-II) is a 21-item measure developed to assess depressive symptoms in adolescents and adults from ages 13 to 80 years (Beck et al., 1996). The BDI-II was administered at Times 1–3. Adolescents were asked to rate the extent to which each item described how they had felt during the past 2 weeks on a 4-point scale ranging from 0 to 3. Participants completed items that assessed different symptoms of depression, such as sadness, agitation, feelings of guilt, and loss of appetite. Items were averaged, with higher scores indicating higher depressive symptoms. Prior research suggests that this measure has demonstrated good psychometric properties among adolescent samples (Rausch et al., 2017). In this study, the BDI-II demonstrated good internal consistency (α's = 0.85-0.93).

Anxiety Symptoms

The Multidimensional Anxiety Scale for Children-10 (MASC-10) is a 10-item self-report questionnaire developed to measure the physical symptoms of anxiety, social anxiety, harm avoidance, and separation anxiety among children between 8 and 19 years old (March, 1997). The MASC-10 was administered at Times 1–3. Youth rated items (e.g., "I'm afraid that other kids will make fun of me") on a 4-point scale ranging from 0 (*Never True About Me*) to 3 (*Often True About Me*). Items were averaged, with higher scores indicating higher anxiety symptoms. Prior research suggests that this measure has demonstrated adequate psychometric properties among different samples, including adolescents (Osman et al., 2009; March et al., 1999). In this study, the MASC-10 demonstrated adequate internal consistency (α's = 0.68 – 0.79).

Self-Esteem

The Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965) is a 10-item, widely used measure of personal beliefs about self-worth that was administered at Times 1–3. Respondents were asked to rate each item (e.g., "I feel that I have a number of good qualities") on a 4-point scale ranging from 1 (*Strongly Agree*) to 4 (*Strongly Disagree*). Five items were reverse scored, and then all items were averaged, with higher scores indicating higher self-esteem. Prior research suggests that this measure has demonstrated good psychometric properties in adolescent samples (e.g., Bagley et al., 2001; Schmitt & Allik, 2005). In this study, the RSES demonstrated good internal consistency (α's = 0.80-0.85).

Analytic Method

Descriptive statistics and bivariate correlations were first estimated using SPSS (Version 27). The moderating effects of hope on the prospective associations between peer victimization and internalizing symptoms were then examined by estimating a series of multilevel models within SAS (University Edition). Two-level models were specified, such that occasions at level 1 were nested within persons at level 2. Full-information maximum likelihood estimation was used to accommodate the missing outcomes at Times 1 (1–2%), 2 (18%), and 3 (28–31%), as this approach has been shown to provide less biased parameter estimates compared to other methods of handling missing data (Arbuckle, 1996). The significance of fixed effects was evaluated using Wald test *p*-values, and the significance of random effects was evaluated using likelihood ratio tests.

The continuous predictors—peer victimization and hope—were standardized prior to analyses to aid in the interpretation of their effects. Gender, age, and race were evaluated as potential covariates and were included in the multilevel models if they were significantly associated with one or more outcome variables at the bivariate level. Time in months was centered so that intercept corresponded to Time 1. Effect sizes were measured by calculating the proportion reduction in each variance component (i.e., random intercept variance and residual variance) and the total R^2 (i.e., squared correlation between the actual outcomes and the outcomes predicted by fixed effects in the models; see

Hoffman, 2015). Finally, significant interactions were interpreted by calculating regions of significance for the moderator variable (Bauer & Curran, 2005).

Results

Preliminary Analyses

Descriptive statistics (i.e., *M*, *SD*, minimum, maximum) and bivariate correlations are presented in Table 1. Gender and race were included as covariates in the multilevel models given their significant associations with the internalizing problem outcomes. In contrast, age was not associated with outcome variables at any time point and was therefore not included as a covariate in the subsequent analyses. Of note, 73.5% of children reported having experienced at least one incident of peer victimization since the beginning of the school year at Time 1. A review of raw mean/sum scores revealed that adolescents' experiences of peer victimization at Time 1 as measured by the RPEQ were comparable to a sample of adolescents from three large cities across the United States (i.e., 0.54 *SD* difference; Adrian et al., 2019). Additionally, adolescents had comparable levels of hope, as measured by the HS, to a sample of adolescents from urban and rural environments in the Midwest (i.e., 0.52 *SD* difference; Van Ryzin, 2011). With regard to depressive symptoms, the average BDI-II score in the current sample was similar to a sample of predominately Black/African American, low-income youth drawn from three large northeastern cities (i.e., 0.20 *SD* difference; Rausch et al., 2017). Adolescents in the current sample exhibited similar levels of anxiety symptoms, as measured by the MASC-10, as a large sample of low-income adolescents drawn from three large cities across the United States (i.e., 0.07 *SD* difference; Feldman et al., 2021). Finally, adolescents in the current sample reported similar levels of self-esteem, as measured by the RSES, in comparison to a sample of youth from two cities in the western United States (i.e., 0.93 *SD* difference; Fu et al., 2017).

Unconditional Multilevel Models

Empty means, random intercept models were initially estimated to partition the variance in internalizing symptoms across persons and time. For depressive symptoms, 45% of the total variance was due to person mean differences (i.e., random intercept variance), and 55% was due to within-person residual variance. Next, a fixed linear effect of time was added, which revealed significant decreases in depressive symptoms over the 4-month period, $b = -0.04$, $SE = 0.01$, $p < .001$; this effect accounted for 6% of the level-1 residual variance. A random variance in the linear time slope (and its covariance with the random intercept) was added to examine individual differences in change over time, but this was not significant, $-2\Delta LL\ (2) = 1.75$, $p = .41$. Therefore, analyses proceeded using random intercept, fixed linear time slope models.

For anxiety symptoms, 51% of the total variance was due to person mean differences, and 49% was due to within-person residual variance. A fixed linear effect of time revealed significant decreases in anxiety symptoms over the 4-month period, $b = -0.04$, $SE = 0.01$, $p = .001$, and this effect accounted for 5% of the level-1 residual variance. The random variance of the linear time slope was nonsignificant, $-2\Delta LL\ (2) = 3.83$, $p = .15$, so the analyses proceeded using random intercept, fixed linear time slope models.

For self-esteem, 51% of the total variance was due to person mean differences, and 49% was due to within-person residual variance. A fixed linear effect of time revealed nonsignificant decreases in self-esteem over the 4-month period, $b = -0.02$, $SE = 0.01$, $p = .11$, and this effect accounted for 1% of the level-1 residual variance. The random variance of the linear time slope was also nonsignificant, $-2\Delta LL\ (2) = 1.39$, $p = .50$. Accordingly, a series of alternative covariance structure models were evaluated to ensure appropriate tests of subsequent fixed effects (see Hoffman, 2015), and analyses proceeded using random intercept, 1-lag Toeplitz models.[2]

Conditional Multilevel Models

Depressive Symptoms

Peer victimization, hope, and gender were added as time-invariant predictors of the intercept and linear time slope (see Table 2). Gender was negatively associated with the random intercept and positively associated with the linear time slope, such that boys exhibited lower initial levels of depressive symptoms and more stable patterns of symptoms over time as compared to girls. Further, higher levels of hope were related to lower concurrent depressive symptoms, whereas higher levels of peer victimization were related to higher concurrent depressive symptoms. Neither hope nor peer victimization were associated with the linear time slope. Relative to the previous unconditional model for change, the main effects model accounted for an additional 33% of the level-2 random intercept variance and 7% of the level-1 residual variance for a total $R^2 = 0.20$.

[2] Given that systematic change in self-esteem was not observed, a series of alternative covariance structure models were evaluated according to the procedures outlined by Hoffman (2015). Specifically, compound symmetry, first-order auto-regressive, and Toeplitz models were sequentially estimated. At the request of a reviewer, fixed effect analyses were re-run using unstructured covariance models, and the pattern of findings remained unchanged.

Table 1 Descriptive Statistics and Correlations Among Study Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Gender	—													
2. Age	–0.15	—												
3. Race	0.08	**–0.20**	—											
4. T1 Hope	0.02	–0.15	–0.09	—										
5. T1 Peer Victimization	**0.21**	–0.01	–0.09	**–0.20**	—									
6. T1 Depressive Symptoms	**–0.24**	0.05	0.04	**–0.36**	**0.23**	—								
7. T2 Depressive Symptoms	–0.04	0.04	0.10	**–0.30**	**0.28**	**0.59**	—							
8. T3 Depressive Symptoms	0.13	0.07	–0.02	**–0.29**	**0.38**	**0.46**	**0.38**	—						
9. T1 Anxiety Symptoms	**–0.30**	–0.14	–0.11	**–0.17**	0.11	**0.33**	**0.33**	**0.22**	—					
10. T2 Anxiety Symptoms	**–0.30**	–0.06	–0.10	–0.01	0.07	**0.24**	**0.34**	0.07	**0.66**	—				
11. T3 Anxiety Symptoms	**–0.20**	–0.02	–0.09	**–0.19**	0.17	**0.24**	0.00	**0.49**	**0.50**	**0.48**	—			
12. T1 Self-Esteem	0.05	0.01	**–0.18**	**0.38**	–0.14	**–0.34**	**–0.30**	–0.12	**–0.22**	–0.13	–0.08	—		
13. T2 Self-Esteem	–0.12	–0.04	**–0.20**	**0.40**	**–0.32**	**–0.41**	**–0.50**	**–0.27**	**–0.21**	–0.08	0.06	**0.47**	—	
14. T3 Self-Esteem	–0.10	–0.03	**–0.24**	**0.35**	–0.15	**–0.29**	**–0.33**	**–0.35**	–0.08	0.15	–0.07	**0.51**	**0.61**	—
Mean	0.36	15.86	0.11	6.46	1.50	0.48	0.40	0.34	1.08	0.88	0.94	3.36	3.26	3.27
Standard Deviation	0.48	1.22	0.32	0.84	0.57	0.37	0.45	0.46	0.51	0.50	0.59	0.49	0.56	0.51
Minimum	0	14	0	3.13	1.00	0.00	0.00	0.00	0.20	0.00	0.00	1.00	1.30	1.90
Maximum	1	19	1	8.00	4.00	1.52	2.62	3.00	3.00	2.40	3.00	4.00	4.00	4.00

Note. T1 = Time 1 (Baseline); T2 = Time 2 (2-month follow-up); T3 = Time 3 (4-month follow-up); Gender (0 = Girls, 1 = Boys); Race (0 = Black/African American, 1 = Other Self-Identified Race); $N = 166$ (Age $n = 161$; T1 Depressive Symptoms $n = 164$; T2 Depressive Symptoms $n = 136$; T3 Depressive Symptoms BDI $n = 119$; T1 Anxiety Symptoms $n = 162$; T2 Anxiety Symptoms $n = 136$; T3 Anxiety Symptoms $n = 118$; T1 Self-Esteem $n = 163$; T2 Self-Esteem $n = 136$; T3 Self-Esteem $n = 115$); Bold estimates represent statistically significant correlations ($p < .05$)

Table 2 Main and Interactive Effects of Hope and Peer Victimization on Depressive Symptoms

	Random Intercept			Fixed Linear Time Slope		
	b	*SE*	*p*	*b*	*SE*	*p*
Model 1: Main Effects						
Intercept	**0.54**	**0.04**	**< 0.001**	—	—	—
Time	—	—	—	**–0.07**	**0.01**	**< 0.001**
Gender	**–0.21**	**0.06**	**0.001**	**0.07**	**0.02**	**< 0.001**
Race	0.07	0.09	0.44	–0.01	0.03	0.64
T1 Hope	**–0.12**	**0.03**	**< 0.001**	0.00	0.01	0.62
T1 Peer Victimization	**0.09**	**0.03**	**0.003**	0.01	0.01	0.17
Model 2: Interactive Effects						
Intercept	**0.55**	**0.04**	**< 0.001**	—	—	—
Time	—	—	—	**–0.07**	**0.01**	**< 0.001**
Gender	**–0.21**	**0.06**	**0.001**	**0.08**	**0.02**	**< 0.001**
Race	0.06	0.09	0.48	0.01	0.03	0.83
T1 Hope	**–0.12**	**0.03**	**< 0.001**	0.01	0.01	0.54
T1 Peer Victimization	**0.09**	**0.03**	**0.003**	0.01	0.01	0.47
Hope x Peer Victimization	0.01	0.03	0.69	**–0.03**	**0.01**	**0.01**

Note. Gender (0 = Girls, 1 = Boys); Race (0 = Black/African American, 1 = Other Self-Identified Race); Bold estimates represent statistically significant paths ($p < .05$)

A two-way interaction between peer victimization and hope predicting the intercept and linear time slope (see Table 2) was then added to the model. Hope significantly moderated peer victimization in predicting the linear time slope, but not the random intercept. As shown in Fig. 1a, peer victimization predicted smaller decreases in depressive symptoms over time for children with hope ≤ −0.50 *SD* (lower bound) and greater decreases in depressive symptoms over time for children with hope ≥ +2.71 *SD* (upper bound); it should be noted, however, that the upper bound fell beyond the limits of the current data. This model accounted for an additional 2% of the level-2 random intercept variance and 2% of the level-1 residual variance for a total $\Delta R^2 = 0.02$.

Anxiety Symptoms

When time-invariant predictors were added to the model (see Table 3), gender was negatively associated with the random intercept, but not the linear time slope, such that boys exhibited lower initial levels of anxiety symptoms as compared to girls. Neither peer victimization nor hope was associated with the random intercept or the linear time slope. This model accounted for an additional 20% of the level-2 random intercept variance and 1% of the level-1 residual variance for a total $R^2 = 0.12$.

When the two-way interaction was added to the model (see Table 3), hope significantly moderated peer victimization in predicting the linear time slope, but not the random intercept. As shown in Fig. 1b, peer victimization predicted smaller decreases in anxiety symptoms over time for children with hope ≤ −0.90 *SD* (lower bound) and greater decreases in anxiety symptoms over time for children with hope ≥ +1.37 *SD* (upper bound). This model accounted for

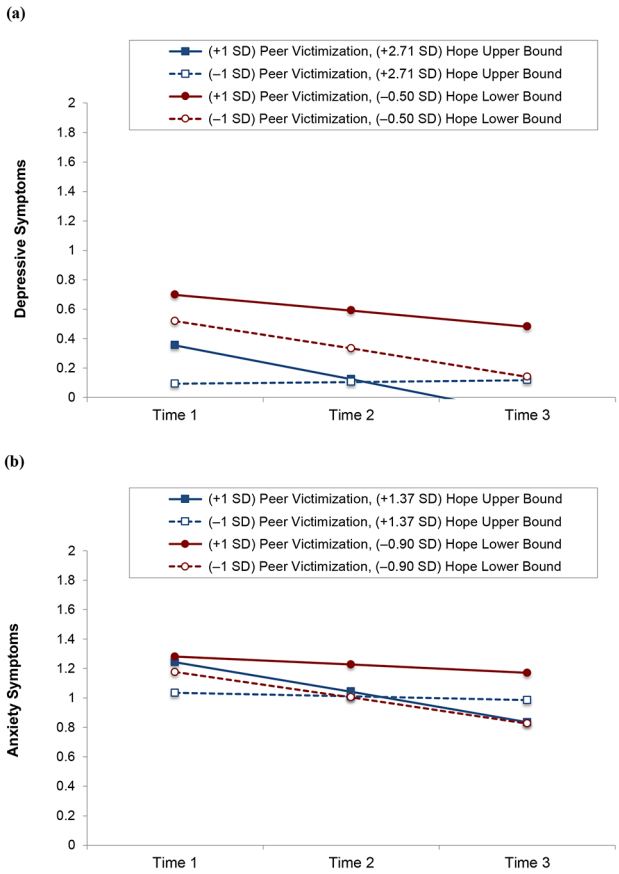

Fig. 1 *Interactive Effects of Peer Victimization and Hope on Depressive and Anxiety Symptoms*

Table 3 Main and Interactive Effects of Hope and Peer Victimization on Anxiety Symptoms

	Random Intercept			Fixed Linear Time Slope		
	b	*SE*	*p*	*b*	*SE*	*p*
Model 1: Main Effects						
Intercept	**1.19**	**0.05**	**< 0.001**	—	—	—
Time	—	—	—	**–0.06**	**0.02**	**0.003**
Gender	**–0.34**	**0.08**	**< 0.001**	0.02	0.02	0.42
Race	–0.14	0.11	0.23	0.00	0.03	0.89
T1 Hope	–0.04	0.04	0.33	0.00	0.01	0.76
T1 Peer Victimization	0.07	0.04	0.10	0.01	0.01	0.57
Model 2: Interactive Effects						
Intercept	**1.19**	**0.05**	**< 0.001**	—	—	—
Time	—	—	—	**–0.06**	**0.02**	**< 0.001**
Gender	**–0.35**	**0.08**	**< 0.001**	0.02	0.02	0.30
Race	–0.16	0.12	0.19	0.03	0.04	0.38
T1 Hope	–0.04	0.04	0.31	0.00	0.01	0.99
T1 Peer Victimization	0.07	0.04	0.10	0.00	0.01	0.98
Hope x Peer Victimization	0.02	0.04	0.58	**–0.03**	**0.01**	**0.006**

Note. Gender (0 = Girls, 1 = Boys); Race (0 = Black/African American, 1 = Other Self-Identified Race); Bold estimates represent statistically significant paths ($p < .05$)

an additional 1% of the level-2 random intercept variance and 3% of the level-1 residual variance for a total $\Delta R^2 = 0.02$.

Self-Esteem

When time-invariant predictors were added to the model (see Table 4), race, but not gender, was significantly associated with the random intercept; specifically, Black/African American participants exhibited higher levels of self-esteem over time as compared to participants who self-identified as another race. Higher levels of hope were related to higher levels of self-esteem over time, whereas higher levels of peer victimization were related to lower levels of self-esteem over time. This model accounted for an additional 38% of the random intercept variance for a total $R^2 = 0.19$. When the two-way interaction was added to the model (see Table 4), hope did not significantly moderate peer victimization in predicting the random intercept. This model accounted for an additional 1% of the random intercept variance for a total $\Delta R^2 = 0.01$.

Table 4 Main and Interactive Effects of Hope and Peer Victimization on Self-Esteem

	Random Intercept		
	b	*SE*	*p*
Model 1: Main Effects			
Intercept	**3.34**	**0.04**	**< 0.001**
Gender	–0.02	0.06	0.74
Race	**–0.27**	**0.09**	**0.004**
T1 Hope	**0.17**	**0.03**	**< 0.001**
T1 Peer Victimization	**–0.09**	**0.03**	**0.005**
Model 2: Interactive Effects			
Intercept	**3.34**	**0.04**	**< 0.001**
Gender	–0.02	0.06	0.78
Race	**–0.25**	**0.09**	**0.01**
T1 Hope	**0.17**	**0.03**	**< 0.001**
T1 Peer Victimization	**–0.10**	**0.03**	**0.003**
Hope x Peer Victimization	–0.04	0.03	0.27

Note. Gender (0 = Girls, 1 = Boys); Race (0 = Black/African American, 1 = Other Self-Identified Race);

Bold estimates represent statistically significant paths ($p < .05$)

Discussion

Ample research suggests that peer victimization is an adverse experience that contributes to poor psychosocial outcomes, including increased symptoms of depression and anxiety (e.g., Halliday et al., 2021; Reijntjes et al., 2010) and lower self-esteem (e.g., Tsaousis, 2016). However, less work has been done to identify factors that might protect youth from these harmful outcomes. This study aimed to address this gap in the literature by being the first study to investigate whether the prospective associations between peer victimization and internalizing problems would differ depending on adolescents' trait hope. The current findings provide initial support for the notion that hope may serve as an individual-level protective factor against the deleterious effects of peer victimization. Further, the current sample was comparable on all of the variables of interest to a number of other samples drawn from large cities across the United States, which suggests that the current findings could be generalizable to other adolescent samples.

In line with past research (McDougal & Vaillancourt, 2015; Reijntjes et al., 2010; Valle et al., 2006; Visser et

al., 2013), we found that peer victimization was associated with higher concurrent depressive symptoms, whereas hope was associated with lower concurrent depressive symptoms. Additionally, we found that depressive and anxiety symptoms decreased over the course of the semester. These findings mirror previous work that has shown that the vast majority of youth experience low levels of internalizing symptoms, which tend to decrease over time (Allan et al., 2014; Hatoum et al., 2018). Further, consistent with expectations and previous work demonstrating that hope buffers the negative effects associated with stressful life events (Valle et al., 2006; Visser et al., 2013), we found that hope mitigated the longitudinal impact of peer victimization on depressive and anxiety symptoms. That is, peer victimization was not associated with increases in depressive or anxiety symptoms for adolescents with moderate to high levels of hope, whereas victimization predicted more stable and problematic patterns of symptoms over time for those with low levels of hope. Further, among adolescents with very high levels of hope (i.e., greater than 1.52 standard deviations above the mean), peer victimization actually predicted greater decreases in anxiety symptoms over time. Contrary to our hypothesis, hope did not moderate the link between peer victimization and self-esteem. However, in line with previous work (e.g., Dixon et al., 2017; Halama & Dedova, 2007; Tsaousis, 2016), we found that hope was uniquely associated with higher levels of self-esteem, whereas peer victimization was uniquely associated with lower levels of self-esteem over time.

These findings can be understood through a framework of resilience. More specifically, Luthar and colleagues (2000) suggest that certain personality characteristics or attributes may confer protective effects for individuals in the face of adversity, and they theorized that there were four patterns of protective factors in terms of risk status and adjustment. The first pattern, simply termed "protective," describes a factor with a direct positive effect on adjustment that is independent from, and does not interact with, risk status. In the second pattern, labeled "protective-stabilizing," high levels of the protective factor serve to prevent a change in functioning across both high and low levels of risk; that is, the personality attribute provides a stabilizing function regardless of the intensity of the stressor. The third pattern, "protective-enhancing," refers to an interactive process in which adjustment difficulties decrease with increasing risk at high levels of the protective factor (i.e., the factor yields added benefits at higher levels of risk). The fourth pattern is termed "protective-reactive" and describes a factor that confers advantages primarily at low levels of risk.

In the current study, hope served as a *protective* factor for self-esteem. Specifically, youth who had higher levels of hope exhibited higher self-esteem over time, regardless of their experiences of peer victimization. In contrast, hope had a *protective-stabilizing* effect on depressive and anxiety symptoms, whereby peer victimization did not confer risk for adolescents with moderate to high levels of this factor; instead, these individuals exhibited declines in symptoms over time. Surprisingly, very high levels of hope provided a *protective-enhancing* effect for anxiety symptoms, such that peer victimization predicted greater decreases in symptoms over time.

Why might youth with higher levels of hope not be adversely impacted by peer victimization? Previous research has shown that youth who are the targets of peer aggression may be more likely to develop self-blaming attributions when trying to explain the causes of their victimization (e.g., "It must be something about me"; Graham & Juvonen, 1998). According to attribution theory (Weiner, 1985), causes of events that are perceived as being internal, stable, and uncontrollable are more likely to contribute to poor psychosocial outcomes. In fact, prior work has shown that self-blaming attributions help explain the link between peer victimization and internalizing problems (Betts et al., 2017; Chen & Graham, 2012; Graham & Juvonen, 1998). On the other hand, when the causes of events are perceived as being external, they are more likely to be perceived as controllable, which can increase motivation to address and resolve the situation (Graham & Juvonen, 1998; Weiner, 1985).

Snyder (2002) posited that high-hope individuals are more likely to persist in the pursuit of a goal when presented with external obstacles. In addition, high levels of hope are characterized by the development of multiple pathways to achieve a goal (Snyder, 2002). It may be the case that youth with higher levels of hope are more likely to view peer victimization as an obstacle that is caused by external factors (e.g., characteristics of the perpetrator) and not an internal characteristic. Therefore, hope may protect individuals from developing self-blaming attributions for experiences of victimization, which subsequently lead to symptoms of depression and anxiety. The benefits of hope may also be due to the fact that individuals with higher hope are more likely to identify and engage in adaptive coping strategies when faced with stressors (Hagen et al., 2005); this could explain why such youth exhibited greater decreases in anxiety symptoms over time at higher levels of peer victimization.

Limitations and Directions for Future Research

These findings must be considered in light of the study's limitations. First, the reliance on self-report measures could contribute to shared method variance. Prior work has shown that adolescents are reliable informants of their experiences of victimization because they are able to identify instances

that others might not be aware of (Olweus, 1991); however, other work suggests that teacher- and peer-reports of peer victimization provide additional information (e.g., Branson & Cornell, 2009; Graham et al., 2003). Thus, future research should utilize a multi-informant approach to bolster the validity of findings. Second, despite the longitudinal design of the study, the time period under investigation (i.e., 4 months) was relatively brief. It would be informative for future investigations to examine the influence of hope on the prospective associations between peer victimization and internalizing problems over longer intervals and during different developmental periods, such as early adolescence. Future research should also extend these results by examining the protective role of other psychological strengths (e.g., humor, gratitude, etc.).

Summary

In conclusion, findings of the current study suggests that hope may serve as a protective factor in the context of peer victimization. That is, adolescents who experienced more frequent victimization and had lower levels of hope showed more stable patterns of depressive and anxiety symptoms over time. In contrast, peer victimization was not prospectively associated with depressive or anxiety symptoms for adolescents who had moderate to high levels of hope; these youth saw a decline in symptoms over time. Adolescents with very high levels of hope, however, showed greater declines in anxiety symptoms when they experienced more frequent peer victimization. Finally, more frequent experiences of victimization were uniquely associated with lower self-esteem, whereas higher levels of hope predicted higher self-esteem over time.

These findings build on previous work by identifying an individual trait (i.e., hope) that serves as a psychological strength and might confer benefits for youth who are experiencing peer victimization. This is important because youth who experience this interpersonal stressor are at an increased risk for a multitude of negative psychosocial outcomes (e.g., Halliday et al., 2021). A better understanding of factors that might reduce these risks could be important for interventions designed to address the mental health needs of peer-victimized youth. Although hope is considered dispositional in nature, evidence suggests that changes in hopeful thinking can occur through prevention programs (e.g., Marques et al., 2011) and mental health interventions (e.g., Ritschel et al., 2016). Additional research is needed to investigate whether efforts to foster hopeful thinking might contribute to a reduction in depressive and anxiety symptoms for adolescents who experience peer victimization.

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Availability of data and material The data for the current project are available from the authors upon request.

Code Availability Not applicable.

Declarations

Conflict of interest The authors declare that they have no conflict of interests.

Ethical approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Consent to participate Informed parental consent and youth assent were obtained from all individual participants included in the study.

Consent for publication All authors consent to publication of this work.

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