

NEGATIVE MOOD REGULATION EXPECTANCIES AS A MODERATOR AND  
MEDIATOR OF THE RELATIONSHIP BETWEEN PEER VICTIMIZATION AND  
INTERNALIZING SYMPTOMS

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## ABSTRACT

Past research has demonstrated an association between peer victimization and internalizing problems. Nonetheless, there are some children who seem to be undamaged by their experiences of peer victimization. In an effort to understand this resilience, the current study examined negative mood regulation (NMR) expectancies as a potential moderator and mediator of the relationship between peer victimization and internalizing problems of depression and anxiety. Fifty-three students in grades 4 through 6 completed self-report questionnaires: the Negative Mood Regulation Scale for Youth, the Revised Children's Anxiety and Depression Scale, and the Peer Interaction Primary School Questionnaire. As expected, peer victimization positively correlated with depression and anxiety, while NMR expectancies negatively correlated with depression and anxiety. Hierarchical multiple regression analyses revealed full mediation by NMR expectancies of the relationship between peer victimization and depression. Furthermore, there was evidence for partial mediation by NMR expectancies of the relationship between peer victimization and anxiety. The findings from this study have implications for changing the focus of bullying intervention programs and clinical treatment of children who are affected by peer victimization. Future interventions could focus on changing the expectancies of children who have low NMR expectancies, thus giving them skills to withstand the deleterious effects of peer victimization.

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## CHAPTER 1

### INTRODUCTION

In recent years, there has been increased interest in studying the effects of bullying. This proliferation of the literature on bullying may be attributed to the rising number of suicides committed by victims of bullying (Klomek, Sourander, & Gould, 2010). Victims of bullying are 2 to 9 times more likely to report suicidal thoughts (Yale University, 2008). According to the National Center for Education Statistics, 25% of public schools reported that bullying was a daily occurrence (National Center for Education Statistics, U.S. Department of Education, & Bureau of Justice Statistics, 2010). In a study involving students from 28 different countries, Due et al. (2005) found correlations between bullying and 12 different physical and psychological symptoms, including stomachache, headache, and feelings of loneliness and helplessness. Many studies have focused on the association between peer victimization and internalizing problems, such as depression and anxiety (Bond, Carlin, Thomas, Rubin, & Patton, 2001; Zwierzyńska, Wolke, & Lereya, 2013).

#### Bullying

Bullying, or peer victimization, involves repeated acts that intentionally harm other individuals (Craig, 1998). Olweus (1994) described a student as being victimized when he or she is exposed, repeatedly over time, to the aggressive behaviors of peers. There are several types of bullying. In the first type, direct aggression is inflicted by

physical or verbal means (Crick & Grotpeter, 1995). Examples of physical aggression are hitting, pushing, or threatening to cause bodily harm. Traditionally, boys are more likely to engage in this type of bullying. The second type of bullying is relational aggression, in which harm is indirectly inflicted through threatening to withdraw friendship or exclusion from a social group. Crick and Grotpeter found that girls are more likely than boys to engage in relational aggression because it is more congruent with their social concerns, such as focusing on establishing close relationships with others. Thus, girls tend to bully by excluding others from a social group, spreading rumors, and purposely damaging others' friendships.

In the age of technology, when communication often occurs through virtual platforms, a new method of bullying has emerged, cyberbullying. This form of bullying occurs through the use of the Internet and electronic devices (Tokunaga, 2010). Like traditional bullying, cyberbullying is characterized by persistent hostile or aggressive communication that is intended to harm the victim. The negative effects of cyberbullying are consistent with the consequences of traditional bullying. These negative effects include low self-esteem and depression (Tokunaga, 2010).

#### Bullying and Internalizing Problems

Studies have found that children who are victimized are at higher risk for developing psychological problems. Slee (1995) examined the relationship between peer victimization and psychological well-being, in terms of depression, unhappiness, and dissatisfaction with school. Students in grades 3 to 7 completed a series of questionnaires related to peer victimization and depression. Students' well-being at school was assessed by a pictorial representation of faces, ranging from a broad smile to a heavy frown. The

extent to which students were victimized was measured by four questions on the Peer Relations Questionnaire. Slee (1995) found that those who were victimized had significantly more depressive symptoms and unhappiness at school. The association between victimization and depression was significant for both boys and girls. Craig (1998) found that victims of physical, verbal, and relational bullying had more anxiety, but not depressive, symptoms.

Other studies have found a stronger correlation between victimization and internalizing problems for girls than for boys. Bond et al. (2001) studied the association between recurrent peer victimization and symptoms of anxiety and depression. The study included 2,860 students who were 13 years old. Participants completed self-report measures of peer victimization and symptoms of depression and anxiety, twice when they were in eighth grade and once in ninth grade. After being adjusted for social relationships and socioeconomic factors, results indicated that a history of peer victimization was a strong predictor of depression and anxiety for girls, but not for boys.

Peer victimization is associated with both short-term and long-term internalizing problems. In a longitudinal study, Zwierzyńska et al. (2013) found that children who were victimized at either 8 or 10 years old had persistent depressive symptoms during early adolescence. Depressive symptoms were measured when participants were between 11 and 14 years old. Those who had been victimized consistently when they were younger had severe symptoms of depression when they were adolescents. The findings of the study indicated that victimization is a predictor of severe and chronic depressive symptoms.

Kochenderfer and Ladd (1996) also support the view that peer victimization is associated with lasting psychological effects. They examined the link between peer victimization and school adjustment in kindergarteners. Students were individually interviewed during two 40-minute sessions in the fall and spring. They responded to questions about peer victimization, school liking and avoidance, and feelings of loneliness. The authors found a moderate positive relationship between peer victimization and feelings of loneliness and that feelings of loneliness persisted even after victimization had ceased. In a two-year cohort study, Bond et al. (2001) found that students who were bullied in eighth grade reported more depression and anxiety in ninth grade. These studies demonstrate the lasting psychological effects of peer victimization.

The current literature remains divided about whether peer victimization is a predictor or consequence of internalizing problems. Most studies have found that peer victimization predicts internalizing problems (Bond et al., 2001; Kochenderfer & Ladd, 1996). Reijntjes, Kamphuis, Prinzie, and Telch (2010) conducted a meta-analysis examining the link between peer victimization and psychological maladjustment in children. They included 18 studies that tested the direction of the relationship between peer victimization and internalizing problems. Internalizing problems were operationally defined as depression, anxiety, withdrawal, loneliness, and somatic symptoms, such as headache or poor appetite. The majority of the studies observed children ages 7 to 12. Reijntjes et al. found that peer victimization was a significant predictor of increased internalizing problems. Additionally, internalizing problems significantly predicted higher levels of later peer victimization. The results demonstrate an equal, bi-directional

relationship between peer victimization and internalizing problems, suggesting that peer victimization and internalizing problems form a vicious cycle (Reijntjes et al., 2010).

Many studies have demonstrated a clear link between peer victimization and the development of internalizing problems. However, there appears to be some disagreement about the types of internalizing problems with which peer victimization is associated. Many studies found that depression was a significant outcome, whereas other studies only found associations with anxiety. The research is also contradictory about whether internalizing problems are a cause or consequence of peer victimization.

Perhaps the discrepancies in the literature can be attributed to the lack of replication in the field. While many studies have been conducted on peer victimization, very few use the same measures to evaluate peer victimization or internalizing problems. Additionally, the proliferation of literature on peer victimization has led to an increase in the development of instruments to measure the construct. In general, many of the questionnaires are newly developed and lack psychometric data. The rise in the number of peer victimization instruments coincides with a decrease in replication studies to validate these measures. Vessey, Strout, DiFazio, and Walker (2014) conducted a systematic review of 27 self-report questionnaires measuring peer victimization. They found limited evidence to support the reliability and validity of these measures. A possible reason for the lack of validity for these measures is the failure to consistently operationalize peer victimization (Bouman et al., 2012).

## Moderators and Mediators of the Relationship Between Bullying and Internalizing Problems

Despite the extensive research demonstrating the association between bullying and internalizing problems, some children seem to be unaffected by their experiences of victimization (Kochenderfer-Ladd & Skinner, 2002). Griese and Buhs (2014) asserted that research in the area of peer victimization has focused mainly on outcomes but has failed to examine individual differences in behavioral patterns that may mitigate the effects of peer victimization. In an effort to explore this phenomenon, some researchers have examined possible moderators and mediators of the relationship between bullying and internalizing problems. A moderator is a variable that changes the direction and/or strength of the relationship between a predictor variable and criterion variable (Baron & Kenny, 1986). On the other hand, a mediator is a variable that explains the relationship between a predictor variable and criterion variable.

Kochenderfer-Ladd and Skinner (2002) examined approach and avoidance coping strategies as potential moderators. Approach strategies were defined as active attempts to alter stressful events, such as problem solving and seeking social support. Avoidance strategies represented efforts to manage emotional or cognitive reactions without addressing the stressor. Fourth grade students completed self-report questionnaires assessing coping strategies, peer victimization, and loneliness. Teachers of the participants were asked to rate students' anxious and depressed behaviors and their social problems. Kochenderfer-Ladd and Skinner found that problem-solving strategies moderated the relationship between peer victimization and peer rejection. Among victimized children, using problem-solving strategies exacerbated peer rejection, which

supports previous findings that victims use ineffective coping strategies. Furthermore, their peers may interpret these futile strategies as provoking conflict, rather than as attempting to resolve conflict. The authors also found that social support seeking strategies moderated the effects for girls who were bullied, but not for boys. Victimized girls with high levels of social support seeking faced fewer social problems than victimized girls with low levels of social support seeking. Distancing coping for male victims moderated the relationship between peer victimization and internalizing problems. Boys who used low levels of distancing were less depressed and anxious than boys who used high levels of distancing.

Hunter, Durkin, Heim, Howe, and Bergin (2010) examined ethnic/religious identity as a moderator of the relationship between discriminatory peer victimization and depressive symptoms. Discriminatory peer victimization was defined as aggression directed towards individuals who are members of particular ethnic or religious groups. Ethnic/religious identity referred to a component of an individual's self-concept that comes from belonging to a particular ethnic or religious group and from sharing in the group's beliefs, characteristics, and customs. Additionally, Hunter et al. (2010) investigated perceived control and threat as mediators of the effects of peer victimization on depressive symptoms. Perceived control and perceived threat were respectively defined as individuals' appraisals of control over their peer victimization and of its negative impact.

Students ages 8 to 12 completed self-report questionnaires regarding peer victimization, appraisal of peer victimization, depressive symptoms, and ethnic/religious identity. Hunter et al. (2010) found that ethnic/religious identity moderated the

relationship between peer victimization and depressive symptoms. Specifically, strong ethnic/religious identity lowered depressive symptoms in children who were bullied (Hunter et al., 2010). They also found that perceived threat and control partially mediated the effects of peer victimization on depressive symptoms. Perceived threat was positively associated with depressive symptoms, while perceived control was negatively correlated with depressive symptoms.

Pouwelse, Bolman, Lodewijkx, and Spaa (2011) examined social support as a potential moderator and mediator of the association between victimization and depression. The authors found, contrary to some previous research, that social support did not moderate the relationship between victimization and depression. Rather, social support mediated this association; that is, the relationship between peer victimization and depressive symptoms could be explained by low social support. Pouwelse et al. (2011) concluded that children who are victimized have low social support, which leads to depression.

Much of the current literature focuses on social support as a potential moderator or mediator of the relationship between victimization and internalizing problems. A factor that may be related to social support, but focuses more on the behavior of the victim, is prosocial behavior. Griese and Buhs (2014) investigated prosocial behavior as a moderator of the association between peer victimization and loneliness. Prosocial behavior, which is behavior that is aimed at benefiting another person, has been positively correlated with taking different perspectives, conflict resolution, empathy, and emotional regulation. Griese and Buhs collected peer reports of peer victimization and prosocial behavior from fourth grade students. Students also completed self-report

questionnaires regarding social support and loneliness. Data were collected from students in the spring of fourth grade and again in the spring of fifth grade. The authors found that prosocial behavior moderated the relationship between relational peer victimization and loneliness. Children with high levels of relational peer victimization and moderate to high prosocial behaviors reported lower levels of loneliness in fifth grade than children with high levels of relational peer victimization and low prosocial behaviors (Griese & Buhs, 2014).

The study by Griese and Buhs is part of the growing trend in bullying prevention research to examine potential protective factors in victims. While much of the literature has focused on social support as a protective factor, few studies have investigated individual behaviors or characteristics of victims as potential moderating factors. The current study proposes to examine an individual difference characteristic as a moderator and mediator of the association between victimization and internalizing problems. In particular, this study will focus on negative mood regulation (NMR) expectancies as a potential moderator and mediator of this relationship. To date, there have been no studies that examine NMR expectancies as a moderator or mediator of the effects of peer victimization.

#### Negative Mood Regulation Expectancies

Social learning theory asserts that generalized expectancies for problem solving influence whether an individual will engage in a particular behavior (Rotter, 1954). Specifically, behavior is determined by the expectancy, or confidence, that engaging in that behavior will result in a particular outcome and the desirability, or reinforcement value, of that outcome.

Conceptualized within Rotter's social learning theory, NMR expectancies are generalized beliefs about one's ability to alleviate negative affect in a variety of situations (Catanzaro & Mearns, 1990). Those with low expectancies have little confidence that they can alter their negative moods and will make little attempt to change their moods. On the other hand, individuals with high NMR expectancies believe strongly that their mood regulation efforts will be successful and they will make more active efforts to change their negative moods (Catanzaro, 1996). Those with high NMR expectancies adhere to the belief, "I can do something to feel better." Catanzaro and Mearns developed the Negative Mood Regulation (NMR) Scale to measure people's generalized expectancies for alleviating their negative moods. All the items on the scale begin with the same stem, "When I am upset, I believe that..." Each item represents a belief about the success of one's attempt to change a negative mood, such as "I can usually find a way to cheer myself up" or "Wallowing in it is all I can do." These items are rated on a 5-point scale, ranging from *strongly disagree* (1) to *strongly agree* (5).

Kirsch, Mearns and Catanzaro (1990) examined the degree to which mood regulation expectancies predicted coping strategies, depressed mood, and somatic symptoms. Students at a university completed the NMR Scale and measures of stressful life events, coping strategies, family support, depression, and somatic symptoms. The authors found that negative mood regulation expectancies negatively correlated with depressed mood and somatic symptoms, and positively correlated with active coping strategies. Furthermore, mood regulation expectancies were a better predictor of active coping strategies and depressed mood than were stress or family support. The more participants believed in their ability to alter their negative mood, and the less they

engaged in avoidant coping strategies, the less depressed they were. Notably, there was a non-significant correlation between active coping strategies and depressed mood, which suggests that the alleviation of depressed mood is more influenced by people's belief that their coping strategies will be effective than by the actual active coping strategies people use.

In a three-part study, Mearns (1991) further investigated NMR expectancies as a predictor of depression and coping strategies in a sample of undergraduates who had recently experienced the end of a romantic relationship. As expected, NMR expectancies predicted initial depression following the breakup. Students with higher NMR expectancies were less depressed in the week following the breakup than those with low NMR expectancies (Mearns, 1991). Students with higher NMR expectancies also engaged in more active coping strategies following the breakup. In Study 3, a six-month follow-up, NMR expectancies from Session 1 were negatively correlated with initial depression after the subsequent end of a romantic relationship and with current depression. The longitudinal findings of this study indicate a causal relationship between NMR expectancies and depression; that is, NMR expectancies directly led to lower depression. Additionally, NMR expectancies were positively correlated with active coping at the six-month follow-up.

Other studies have also demonstrated that NMR expectancies are prospectively associated with depression. Catanzaro and Greenwood (1994) studied NMR expectancies as a predictor of coping responses and symptoms over several weeks. In the first session, college students completed the NMR Scale and the Health and Daily Living Form. After six to eight weeks, students completed the same questionnaires again, as well as the Daily

Hassles Scale. Consistent with previous findings, NMR expectancies were positively associated with active coping and negatively associated with avoidant coping.

Furthermore, NMR expectancies negatively correlated with dysphoria and somatic symptoms. The authors also found that NMR expectancies measured in session 1 predicted coping responses, dysphoria, and somatic symptoms in session 2 (Catanzaro & Greenwood, 1994).

While most studies have focused on the relationship between NMR expectancies and depression, several studies have demonstrated a relationship between NMR expectancies and anxiety. Catanzaro (1996) examined NMR expectancies, depression, and state anxiety as predictors of performance on an examination among undergraduates. The NMR Scale was administered on the first day of the semester. The Beck Depression Inventory and the State Anxiety Inventory were administered 115 days later, before an examination. Catanzaro found that NMR expectancies buffered the effects of state anxiety on exam performance. That is, for those who had high NMR expectancies, state anxiety seemed to enhance exam performance. Conversely, for those who had low NMR expectancies, state anxiety had detrimental effects on performance.

NMR expectancies have also been associated with social anxiety. Sung et al. (2012) compared the NMR expectancies of a group of patients with social anxiety disorder with those of a control group. Sung et al. found that, compared to the control group, those with social anxiety disorder had significantly lower NMR Scale scores, indicating that they believed less in the effectiveness of their attempts to alter negative moods. NMR expectancies were negatively correlated with anxiety. NMR expectancies

were positively correlated with the Quality of Life Enjoyment and Satisfaction Questionnaire.

Congruent with many of the prospective studies examining NMR expectancies and depression, NMR expectancies have also predicted anxiety. Kassel, Bornovalova, and Mehta (2006) prospectively studied the association of NMR expectancies with both depressive and anxiety symptoms. Undergraduates completed questionnaires during two sessions eight weeks apart. Similar to previous research, Kassel et al. found that NMR expectancies were negatively associated with maladaptive coping, such as blaming, wishful thinking and avoidance, but were positively correlated with adaptive coping, such as problem solving and seeking social support. NMR expectancies were negatively associated with depression and anxiety at Time 1 and Time 2. Finally, NMR expectancies predicted depression and anxiety at Time 2, even when controlling for Time 1 symptoms and coping strategies.

#### NMR Expectancies As Moderator And Mediator

In addition to its association with depression and anxiety symptoms, NMR expectancies have exhibited moderating and mediating roles in various studies. These studies demonstrate the influence that NMR expectancies may have on clinical treatment or interventions. Backenstrass et al. (2006) conducted a study to determine possible cognitive factors that moderate and mediate cognitive-behavioral therapy (CBT) outcomes for depression in a clinical population. Measures of depression, NMR expectancies, self-efficacy, and locus of control were administered before treatment, after treatment, and at a six-month follow-up. As expected, NMR expectancies negatively correlated with depressive symptoms. The authors found that negative mood regulation

expectancies mediated CBT treatment outcomes for depression; that is, changes in NMR expectancies early in treatment correlated with subsequent changes in depressive symptoms.

Tresno, Ito, and Mearns (2013) investigated NMR expectancies as a potential moderator of the relationship between childhood maltreatment and nonsuicidal self-injury (NSSI) in a population of college students in Japan. NSSI refers to deliberate attempts to injure oneself without the intention of committing suicide. As predicted, NSSI was negatively correlated with NMR expectancies. More importantly, Tresno et al. found that NMR expectancies moderated the relationship between childhood maltreatment and NSSI. For those with stronger NMR expectancies, the relationship between childhood maltreatment and NSSI was weaker. On the other hand, for those with lower NMR expectancies, the relationship between childhood maltreatment and NSSI was stronger.

Since NMR expectancies in part determine whether individuals engage in a particular behavior, it may be expected that NMR expectancies would influence strategies that are used to decrease conflict in relationships. Creasey, Kershaw, and Ada (1999) examined the relationship of attachment orientations with NMR expectancies and conflict management strategies with best friends and romantic partners in a population of undergraduate women. NMR expectancies negatively correlated with an insecure attachment style, which may be interpreted as insecure individuals' having less confidence in their ability to regulate their negative mood. Furthermore, lower NMR expectancies predicted more difficulty with conflict management. Creasey et al. also found that NMR expectancies partially mediated the relationship between attachment style and conflict management strategies.

### NMR Expectancies Among Children

While most of the studies examining NMR expectancies have focused on adult populations, Franko, Powers, Zuroff, and Moskowitz (1985) found that children are capable of describing conscious strategies for coping with negative affect. That is, children possess generalized expectancies for problem solving related to coping with feelings of sadness and anger. Franko et al.'s work provided a basis for Catanzaro and Mearns's (1990) work on NMR expectancies.

The Negative Mood Regulation Scale for Youth (NMR-Y) was developed to measure negative mood regulation expectancies in children and younger adolescents (Laurent, Roome, Catanzaro, & Mearns, 2014). The NMR-Y was adapted from Catanzaro and Mearns's (1990) Negative Mood Regulation Scale. Existing items on the NMR Scale were modified and new items were added to ensure that the content and language are age-appropriate for children. Laurent et al. (2014) conducted corrected total-item correlation analyses and determined that 8 items should be removed from the original measure, resulting in a 26-item scale. Laurent et al. found that the NMR-Y demonstrated strong internal consistency and high test-retest reliability in a sample of students in grades 4 through 8. Additionally, the authors found that the NMR-Y positively correlated with positive affect and adaptive coping. These correlations provided evidence for validity of the NMR-Y. They also found that NMR expectancies also negatively predicted depression. These findings were consistent with results from the adult NMR scale. Smith (2015) also found that the NMR-Y had strong internal consistency in a sample of children from a therapeutic camp. Furthermore, providing

additional evidence for validity of the scale, Smith found that NMR expectancies negatively correlated with aggressive behavior and externalizing problems.

### The Current Study

As demonstrated in multiple studies, children who are victimized by their peers tend to experience various internalizing problems, such as depression and anxiety (Bond et al., 2001; Craig, 1998; Slee, 1995; Zwierzyńska et al., 2013). I examined NMR expectancies as a potential moderating and mediating factor in the relationship between peer victimization and internalizing problems. Fifty-three students in grades 4 through 6 from a Southern California elementary school completed self-report questionnaire measures of peer victimization, NMR expectancies, depression, and anxiety. This study not only examined NMR expectancies as a potential moderator and mediator of the relationship between peer victimization and depression, but also contributed to the literature on the NMR-Y scale. This study may also have implications for the treatment and prevention of mental health problems in individuals who are victims of peer victimization. I tested the following hypotheses:

#### Hypothesis 1

Peer victimization would positively correlate with depression and anxiety.

#### Hypothesis 2

NMR expectancies would negatively correlate with internalizing symptoms: children with higher NMR expectancies would have lower depression and anxiety.

#### Hypothesis 3

NMR expectancies would moderate the relationship between peer victimization and internalizing problems. Peer victimization and NMR expectancies would have a

significant interaction effect, such that, among children who are bullied, those with high NMR expectancies would have lower depression and anxiety than children with low NMR expectancies.

#### Hypothesis 4

NMR expectancies would partially mediate the relationship between peer victimization and internalizing problems; that is, the association between peer victimization and internalizing symptoms would decrease when variance accounted for by NMR expectancies was removed.

## CHAPTER 2

### METHOD

#### Participants

Students in grades 4 through 6 were recruited from an elementary school in Irvine, CA. I visited nine 4<sup>th</sup> through 6<sup>th</sup> grade classrooms to discuss my study and invite the students to participate. Information packets were sent home so parents could review and complete the consent form. Students were instructed to return the completed consent forms to their teacher prior to the study date. To incentivize participation, participants were entered into a raffle drawing to win one of three \$25 Visa gift cards. Students were also given ice cream as a sign of appreciation for their participation. In total, 280 students were invited to participate in the study. Fifty-three students participated in the study: 22 boys and 31 girls. That represents a participation rate of 18.9%. Their mean age was 10.23 years ( $SD = .97$ ) and 32% were in 4<sup>th</sup> grade, 30% were in 5<sup>th</sup> grade, and 38% were in 6<sup>th</sup> grade. The participants identified themselves as from a range of ethnic backgrounds: 28% White, 6% Hispanic, 4% Black, and 24% Asian. Several students identified as Other (32%), which included biracial and Middle Eastern students. Three students (6%) did not identify their ethnicity.

#### Measures

##### Negative Mood Regulation Scale for Youth (NMR-Y)

The NMR-Y was adapted from Catanzaro and Mearns's (1990) Negative Mood Regulation Scale to measure NMR expectancies in children from grades 4 through 8. The

scale assesses children's beliefs about their ability to improve their negative moods. The NMR-Y consists of 26-items rated on a 5-point Likert-type scale (Laurent et al., 2014). Preliminary analysis of the scale revealed high internal consistency, with a coefficient alpha of .88. The NMR-Y positively correlated with adaptive coping and positive affect and negatively correlated with avoidant coping and negative affect. The reliability and validity of the NMR-Y are consistent with those of the NMR Scale in adult and late adolescent populations (Laurent et al., 2014). In the current study, the NMR-Y demonstrated high internal consistency ( $\alpha = .86$ ). Some items on the NMR-Y had low item-whole correlations for the current sample, including items 9 ( $r = .04$ ), 15 ( $r = .16$ ), and 18 ( $r = .15$ ).

#### Revised Child Anxiety and Depression Scale (RCADS)

The RCADS is a 47-item self-report measure of anxiety and depression in children. Items such as "I worry about things" and "Nothing is fun anymore" are rated on a 4-point Likert-type scale, ranging from 0 (*never*) to 3 (*always*) (Chorpita, Yim, Moffitt, Umemoto, & Francis, 2000). The RCADS has six subscales that can be summed to obtain a Total Internalizing Scale score. In a clinical sample, the RCADS had good internal consistency ( $\alpha = .78-.88$ ) (Chorpita, Moffitt, & Gray, 2005). The measure also demonstrated evidence for convergent validity, correlating with the Children's Depression Inventory and the Revised Children's Manifest Anxiety Scale. The RCADS also demonstrated discriminant validity, showing non-significant and near zero correlations with child and parent interview ratings of oppositional behavior problems. In the present study, The RCADS Major Depression subscale had high internal consistency ( $\alpha = .89$ ). The RCADS Anxiety subscale also demonstrated high reliability ( $\alpha = .94$ ).

### Peer Interaction in Primary School Questionnaire (PIPS)

The PIPS is a 22-item self-report measure that assesses direct and indirect forms of bullying and victimization in elementary school children (Tarshis & Huffman, 2007). Questions such as “Other students make me cry” and “Other students make fun of me” are rated on a 3-point scale, *a lot*, *sometimes*, and *never*. The PIPS has 2 subscales: victim subscale and bully subscale. The items on each subscale are summed, with higher scores indicating more victimization or bully perpetration. The measure demonstrated high internal consistency ( $\alpha = .90$ ) and high test-retest reliability. The PIPS positively correlated with the Olweus Bully/Victim Questionnaire and the Strengths and Difficulties Questionnaire, providing evidence for concurrent validity. In the current study, the PIPS had high internal consistency ( $\alpha = .88$ ).

### Missing Data

Several participants did not respond to all the questions. For participants missing less than 10% of data, I pro-rated the data by substituting the overall mean scores for items on the scale. There was one participant whose responses were removed from the data set due to extreme and random responding.

### Procedure

The study was conducted in a group setting in the school library. The questionnaires were administered after school and took approximately 45 minutes to complete. Upon arrival, students were checked in to verify that parental consent was provided. As participants were checked in, they were given an assent form. I reviewed the form with the students and asked them to sign the form to acknowledge their voluntary involvement. Once students submitted their assent forms, they were given a

large envelope containing all the questionnaires. The envelopes and questionnaires were labeled with an identification number to ensure anonymity of the participants. The questionnaires were completed in a pencil-and-paper format. Participants were instructed not to skip ahead and to complete the questionnaires in the following order: demographic questionnaire, the NMR-Y, the RCADS, and the PIPS. Students were instructed to put the questionnaires back into the large envelope once they finished.

## CHAPTER 3

### RESULTS

#### Descriptive Statistics

The mean score for girls on the RCADS depression subscale was 6.25 ( $SD = 4.21$ ), which is lower than the mean for girls in a clinical sample for ages 9-10 ( $M = 9.38$ ,  $SD = 6.56$ ) (Chorpita et al., 2005). The mean score for boys on the RCADS depression subscale was 9.57 ( $SD = 7.55$ ), which is higher than the mean for boys in the same clinical sample for ages 9-10 ( $M = 7.25$ ,  $SD = 5.94$ ). On the other hand, the mean score on the RCADS anxiety subscale was ( $M = 32.29$ ,  $SD = 19.14$ ), which is similar to the mean score in the clinical sample ( $M = 33.02$ ,  $SD = 19.06$ ). The mean score on the PIPS victim subscale was low ( $M = 3.76$ ,  $SD = 4.34$ ), compared to past normative data ( $M = 6.7$ ,  $SD = 5.1$ ) (Tarshis & Huffman, 2007).

#### Correlational Analyses

Correlations were calculated among scores on the NMR-Y, the RCADS, and the PIPS to test Hypotheses 1 and 2, as shown in Table 1. As expected, peer victimization was positively correlated with depression ( $r(48) = .39$ ) and anxiety ( $r(47) = .53$ ). Furthermore, analyses confirmed Hypothesis 2, as NMR expectancies were negatively correlated with depression ( $r(50) = -.56$ ) and anxiety ( $r(49) = -.49$ ). Finally, the extent of engaging in bullying behaviors was moderately positively correlated with depression ( $r(47) = .40$ ), anxiety ( $r(47) = .58$ ), and victimization ( $r(49) = .53$ , all  $p < .01$ ).

Table 1

*Correlations of All Variables*

	Depression	Anxiety	Peer Victimization	Bullying
NMR Expectancies	-.56**	-.49**	-.42*	-.13
Depression	-	.82**	.39*	.40*
Anxiety	-	-	.53**	.58
Peer Victimization	-	-	-	.53

Note. \* $p < .01$ . \*\* $p < .001$

### Hierarchical Multiple Regression

#### Moderation

To test Hypothesis 3, that higher negative mood regulation expectancies would predict lower internalizing symptoms in children who are bullied, I conducted a hierarchical multiple regression. I tested whether the relationship between peer victimization and internalizing symptoms would be moderated by NMR expectancies. The criterion variable was internalizing problems, which was the total score on the RCADS. Peer victimization and NMR expectancies were entered into the first step of the regression analysis and significantly accounted for variance in internalizing problems,  $R^2 = .41$ ,  $F(2, 45) = 15.46$ ,  $p < .001$ . Both peer victimization and NMR expectancies were significant independent predictors of internalizing problems. In the second step, I entered the interaction term between NMR expectancies and peer victimization, which was created by centering the two variables and multiplying them together. The interaction term did not significantly account for variance in internalizing problems,  $\Delta R^2 = .01$ ,  $F(1, 44) = 0.85$ ,  $p = .36$ . Therefore NMR expectancies were not a significant moderator of the relationship between peer victimization and internalizing problems.

Depression and anxiety were next examined separately as criterion variables. As before, peer victimization and NMR expectancies significantly accounted for variance in depression,  $R^2 = .36$ ,  $F(2, 47) = 13.13$ ,  $p < .001$ , and anxiety,  $R^2 = .41$ ,  $F(2, 46) = 15.81$ ,  $p < .001$ . However, again the interaction term of peer victimization X NMR expectancies did not significantly account for variance in depression or anxiety. The interaction term was more related to depression,  $\Delta R^2 = .03$ ,  $F(1, 46) = 2.14$ ,  $p = .15$ , than anxiety,  $\Delta R^2 = .003$ ,  $F(1, 45) = 0.25$ ,  $p = .62$ .

### Mediation

The causal step method developed by Baron and Kenny (1986) was used to test for mediation. I calculated a series of hierarchical multiple regression equations to examine Hypothesis 4, whether NMR expectancies would partially mediate the relationship between peer victimization and internalizing problems.

Step 1: Internalizing problems  $\rightarrow$  peer victimization

Step 2: Internalizing problems  $\rightarrow$  NMR expectancies

Step 3: NMR expectancies  $\rightarrow$  peer victimization

Step 4: Internalizing problems  $\rightarrow$  peer victimization & NMR expectancies

In Step 1, peer victimization was a significant predictor of internalizing problems,  $R^2 = .25$ ,  $F(1, 46) = 15.12$ ,  $p < .001$ ;  $\beta = .50$ ,  $t = 3.89$ ,  $p = .001$ . In Step 2, NMR expectancies significantly predicted internalizing problems,  $R^2 = .29$ ,  $F(1, 46) = 18.88$ ,  $p < .001$ . In Step 3, peer victimization was significantly associated with NMR expectancies,  $R^2 = .18$ ,  $F(1, 49) = 10.47$ ,  $p = .002$ . In Step 4, NMR expectancies were a greater predictor of internalizing problems,  $\beta = -.42$ ,  $t = -3.48$ ,  $p = .001$ , than was peer victimization,  $\beta = .36$ ,  $t = 2.97$ ,  $p = .005$ . When NMR expectancies were considered, the

strength of the standardized beta between peer victimization and internalizing problems diminished. Since the relationship between peer victimization and internalizing problems was reduced when NMR expectancies were considered, this finding supports Hypothesis 4 regarding the partial mediation by NMR expectancies of the relationship between peer victimization and internalizing problems.

Depression and anxiety were next examined separately as criterion variables. To determine whether NMR expectancies mediated the relationship between peer victimization and depression, a series of hierarchical multiple regression equations were calculated. In the first step, peer victimization significantly predicted depression,  $R^2 = .15$ ,  $F(1, 48) = 8.61$ ,  $p = .005$ . In Step 2, NMR expectancies significantly predicted depression,  $R^2 = .33$ ,  $F(1, 48) = 23.29$ ,  $p < .001$ . The beta was  $.39$ ,  $t = 2.94$ ,  $p = .005$ . In Step 3, peer victimization was significantly associated with NMR expectancies,  $R^2 = .18$ ,  $F(1, 49) = 10.47$ ,  $p = .002$ . In Step 4, the relationship between peer victimization and depression was non-significant,  $\beta = .19$ ,  $t = 1.53$ ,  $p = .134$ , when NMR expectancies were considered,  $\Delta R^2 = .21$ ,  $F(1, 47) = 15.11$ ,  $p < .001$ . Since NMR expectancies significantly predicted depression and the relationship between peer victimization and depression became non-significant, there is evidence for full mediation by NMR expectancies of the relationship between peer victimization and depression (see Table 2).

Table 2

*Coefficients for Hierarchical Multiple Regression Analyses By Criterion Variable*

	<i>B</i>	<i>SE B</i>	$\beta$
<b>Internalizing Problems</b>			
Model 1: $R^2 = .25^{**}$			
Peer victimization	2.58	0.66	.50 <sup>**</sup>
Model 2: $\Delta R^2 = .16^*$			
Peer victimization	1.87	0.63	.36 <sup>*</sup>
NMR expectancies	-0.51	0.15	-.42 <sup>*</sup>
<b>Depression</b>			
Model 1: $R^2 = .15^*$			
Peer victimization	0.48	0.16	.39 <sup>*</sup>
Model 2: $\Delta R^2 = .21^{**}$			
Peer victimization	0.24	0.16	.19
NMR expectancies	-0.15	0.04	-.50 <sup>**</sup>
<b>Anxiety</b>			
Model 1: $R^2 = .28^{**}$			
Peer victimization	2.15	0.50	.53 <sup>**</sup>
Model 2: $\Delta R^2 = .13^*$			
Peer victimization	1.59	0.50	.39 <sup>*</sup>
NMR expectancies	-0.36	0.12	-.38 <sup>*</sup>

*Note.* \* $p < .01$ . \*\* $p < .001$ .

Finally, NMR expectancies were analyzed as a potential mediator of the relationship between peer victimization and anxiety. In Step 1, peer victimization was a significant predictor of anxiety,  $R^2 = .28$ ,  $F(1, 47) = 18.21$ ,  $p < .001$ ;  $\beta = .53$ ,  $t = 4.27$ ,  $p < .001$ . In Step 2, NMR expectancies significantly predicted anxiety,  $R^2 = .27$ ,  $F(1, 47) = 17.71$ ,  $p < .001$ . In Step 3, peer victimization was significantly associated with NMR

expectancies,  $R^2 = .18$ ,  $F(1, 49) = 10.47$ ,  $p = .002$ . In Step 4, the relationship between peer victimization and anxiety remained significant, although diminished,  $\beta = .39$ ,  $t = 3.22$ ,  $p = .002$ , when NMR expectancies were considered,  $\Delta R^2 = .13$ ,  $F(1, 46) = 9.95$ ,  $p = .003$ . Since NMR expectancies were significantly associated with anxiety,  $\beta = -.38$ ,  $t = -3.15$ ,  $p = .003$ , and the relationship between peer victimization and anxiety decreased, these results indicate partial mediation by NMR expectancies of the relationship between peer victimization and anxiety.

## CHAPTER 4

### DISCUSSION

The results from the correlational analyses in the current study support findings from previous research. I found that peer victimization was positively correlated with depression and anxiety. Additionally, those who engaged in bullying behaviors had a moderate positive correlation with anxiety and victimization. Furthermore, NMR expectancies were negatively correlated with depression and anxiety. While the current study did not find moderation by NMR expectancies of the relationship between peer victimization and internalizing problems, there was evidence for full mediation by NMR expectancies of the relationship between peer victimization and depression. Furthermore, NMR expectancies partially mediated the relationship between peer victimization and anxiety. These findings indicate that, although NMR expectancies do not change the association between peer victimization and internalizing problems, they at least partially account for the relationship between these variables. That is, children who are victimized have lower NMR expectancies, which relate to higher depression.

As predicted, peer victimization positively correlated with depression and anxiety. This finding parallels the literature. Slee (1995) found that those who were victimized had significantly more depressive symptoms and unhappiness at school. On the other hand, Craig (1998) found that victims of bullying had more anxiety, but not depression. While some studies have only found associations between peer victimization and either depression or anxiety, the current study found that peer victimization correlated with

both. Similarly, Bond et al. (2001) found that peer victimization was a strong predictor of depression and anxiety.

The current study found that NMR expectancies had a moderate negative correlation with depression. This outcome is consistent with the previous literature. Kirsch et al. (1990) found that NMR expectancies negatively correlated with depressed mood and somatic symptoms. In another study with undergraduates who had recently ended a relationship, Mearns (1991) found that students with higher NMR expectancies were less depressed in the week following the breakup. Additionally, NMR expectancies were prospectively associated with depression in a six-month follow-up.

The present study also found that NMR expectancies negatively correlated with anxiety. Past research has demonstrated an association between NMR expectancies and anxiety. Catanzaro (1996) found that NMR expectancies negatively correlated with state anxiety among a group of undergraduates. Sung et al. (2012) found that NMR expectancies were negatively correlated with anxiety among patients with social anxiety disorder. Finally, Kassel et al. (2006) prospectively studied the association of NMR expectancies with both depression and anxiety among undergraduate students. NMR expectancies measures at Time 1 predicted depression and anxiety at Time 2.

My study was the first to explore NMR expectancies as a moderator or mediator of the effects of peer victimization among children. Although the current study did not find that NMR expectancies moderated the relationship between peer victimization and internalizing problems, NMR expectancies did mediate the relationship between peer victimization and depression. Additionally, NMR expectancies partially mediated the relationship between peer victimization and anxiety. These findings are consistent with

previous research. Backenstrass et al. (2006) found that NMR expectancies mediated CBT treatment outcomes for depression. In another study, Tresno et al. (2013) found that NMR expectancies moderated the relationship between childhood maltreatment and NSSI. Catanzaro (1996) found that, for those who had high NMR expectancies, state anxiety seemed to enhance exam performance; that is NMR expectancies moderated the relationship between state anxiety and exam performance.

#### Limitations and Future Research

Although the findings from this study paralleled findings from previous research, the generalizability of the results is restricted by the small sample size. Furthermore, the sample came from one elementary school in Irvine, CA. Although the participants came from diverse ethnic backgrounds, the population may not be representative of the socioeconomic status of the broader population. The median household income in Irvine is \$91,999, in contrast to the national median of \$53,657 (US Census Bureau, 2015; DeNavas-Walt & Proctor, 2015). Another limitation of the study is that the data may be subject to respondent bias because many students did not answer all the questions and, due to the social undesirability of the questions, some may not have responded honestly. The effects of socially desirable responding could account for the lower mean scores—compared to norms—on the RCADS and the PIPS. Students may have under-reported their symptoms and bullying experiences. Response fatigue may also have affected students' responses, since the study took place after school.

Future research may consider broadening the population to include participants who represent more socioeconomic diversity. Additionally, to reduce respondent bias, future research could include a measure of social desirability and collect data through

multiple methods, such as interviews, parent reports, and peer reports, rather than only self-report questionnaires. Researchers should also conduct testing over multiple sessions to reduce response fatigue and to allow for drawing conclusions about cause.

### Conclusions and Implications

Overall, the main research hypotheses were supported, which provides a promising foundation for future research, clinical treatment, and interventions. While peer victimization has been associated with psychological problems, certain factors may protect students these include social support, prosocial behaviors, and high negative mood regulation expectancies. As this study has demonstrated that NMR expectancies may explain the relationship between peer victimization and depression, future research should continue to explore this phenomenon. Furthermore, these findings have implications for changing the focus of bullying intervention programs, which traditionally focus on preventing bullying, rather than on mitigating the effects for those who are bullied. Future interventions could focus on assessing NMR expectancies in children and changing the expectancies of children who have low NMR expectancies, thus giving them skills to withstand the deleterious effects of peer victimization.

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