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A LONGITUDINAL INVESTIGATION OF PEER VICTIMIZATION, SELF-ESTEEEM, DEPRESSION, AND ANXIETY AMONG ADOLESCENTS: A TEST OF COGNITIVE DIATHESIS-STRESS THEORY

by

Cixin Wang

A DISSERTATION

Presented to the Faculty of

The Graduate College at the University of Nebraska

In Partial Fulfillment of Requirements

For the Degree of Doctor of Philosophy

Major: Psychological Studies in Education

Under the Supervision of Professor Susan M. Swearer

Lincoln, Nebraska

May, 2011

A LONGITUDINAL INVESTIGATION OF PEER VICTIMIZATION, SELF-ESTEEEM, DEPRESSION, AND ANXIETY AMONG ADOLESCENTS: A TEST OF COGNITIVE DIATHESIS-STRESS THEORY

Cixin Wang, Ph.D.

University of Nebraska, 2011

Adviser: Professor Susan M. Swearer

This study examined the relationship between two types of peer victimization (overt and relational victimization), depressive symptoms, anxiety symptoms, and self-esteem over three time points. Participants were 1171 fifth, sixth, seventh, eighth, and ninth graders (623 females) recruited from four elementary schools, three middle schools, and two high schools in the Midwest. Students' self-report on peer victimization, depressive symptoms, anxiety symptoms, and self-esteem was collected. Structural Equation Modeling was used to examine the relationship among those variables. The results showed that self-esteem mediated the relationship between two types of peer victimization and depressive symptoms. Self-esteem was found to mediate the relationship between two types of peer victimization and anxiety symptoms only among older students. Self-esteem was also found to moderate the relationship between relational victimization and depressive symptoms among older students. The results suggest that cognitive diathesis-stress model for depression can be interpreted as both a mediation and moderation model for older students, but only as a mediation model for younger students. The cognitive diathesis-stress moderation model only applies to depressive symptoms instead of anxiety symptoms. The cognitive diathesis-stress

medication model for anxiety only applies to older students. Furthermore, the reciprocal relationship between relational victimization and depressive symptoms was also found. The results suggest that relational victimization contributes to the onset of depressive symptoms; meanwhile depressive symptoms also contribute to higher risk for later peer victimization. High self-esteem was found to protect adolescents from experiencing relational victimization and overt victimization six month later. The current study also found gender differences and transition group differences on the mean levels of the latent constructs and the relationship among those constructs. The implications for bullying prevention and intervention were discussed.

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ACKNOWLEDGEMENTS

First of all, I want to thank my advisor and mentor, Dr. Susan Swearer. During the past six years, Dr. Swearer has provided me with countless support, mentoring, and guidance through different stages of my graduate training. Her passion for research and practice as well as her work ethic serve as my role model. Without her support, I would not have finished my Ph.D. training.

Second, I want to thank my dissertation committee members, Drs. Beth Doll, Eric Buhs, and Julia Soulakova for providing me with helpful and timely feedback and suggestions on my dissertation. I want to thank Dr. Doll for introducing me to the field of School Psychology and for her unlimited encouragement and support during my training. Her support has always been very encouraging in my life as a graduate student. I want to thank Dr. Buhs for his support in my teaching and research. I want to thank Dr. Julia Soulakova for helping me with my training in statistics and applying the knowledge in my research.

Third, I want to thank my husband, David Karst, for his unconditional love and support during my graduate training. David has been the reader, proofreader, and editor for my dissertation and other papers. He believed in me and encouraged me during my struggles, worries, and failures. His patience and support helped me to finish my graduate training.

Fourth, I want to thank my family for their unconditional love and support. I want to thank my parents, Bibo Lang and Huishan Wang, my parents-in-laws, Nancy Karst and Otto Karst, and my godparents, Dr. Yan Xia and Dr. Zhi Zhou, for their unlimited support. I would not be here without you.

Fifth, I want to thank my friends for their support. I want to thank Chaorong Wu, Xiaoyun Zhang, Sherry Wang, and many others for the encouragement and support during my life at Lincoln, NE.

Sixth, I want to thank the Educational Psychology Department and the University of Nebraska-Lincoln for providing me with the great learning opportunity and final support during my graduate training. I will miss the nice buildings, the office, and the university library.

Finally, I want to thank the students and staff in Lincoln Public Schools who participated in the current study. Thank you very much for sharing your valuable experience with us.

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Chapter 1: Introduction

Bullying and peer victimization is a serious problem facing U.S. adolescents today. A large percentage of secondary school students have reported being the victims of bullying, ranging from 4.7% to 82.3%, at some point during their school years (e.g., Dake, Price, & Telljohann, 2003; Dulmus, Theriot, Sowers, & Blackburn, 2004; Dulmus, Sowers, & Theriot, 2006; Nansel, et al., 2001; National Center for Education Statistic, 2007). Research has repeatedly shown that the experience of peer victimization is associated with many negative outcomes, such as low self-esteem, depressive symptoms, and anxiety symptoms (see Hawker & Boulton, 2000 for a review).

Two distinct types of peer victimization have been documented in the literature, namely overt victimization and relational victimization (Crick & Grotpeter, 1995; 1996). Few studies have investigated the possible differential relationships among the overt and relational victimization and psychosocial adjustments (self-esteem, depressive symptoms, and anxiety symptoms) (Martin & Huebner, 2007). Considering relational victimization is a unique construct, and it might relate to psychological outcomes differently from overt victimization, failure to study this concept separately from overt victimization prevents us from better understanding peer victimization among adolescents.

The pathway through which peer victimization might lead to depressive and anxiety symptoms is not clear. Researchers have suggested that self-esteem might play a role in the relationship between peer victimization and internalizing symptoms. Specifically, experience of peer victimization might contribute to adolescents' negative views of self (i.e., low self-esteem), which then may contribute to the development and maintenance of internalizing symptoms. It is also possible that positive views of self

(i.e., high self-esteem) might protect adolescents from developing internalizing symptoms in the event of peer victimization. However, few studies have directly tested this relationship, and the existing results are mixed. Some studies have shown that self-esteem moderates the relationship between overt victimization and depressive symptoms (Gibb & Alloy, 2006) and anxiety symptoms (Grills & Ollendick, 2002). However, other studies did not find the moderating relationship (Adams & Bukowski, 2008), or found self-esteem to mediate the relationship between overt victimization and internalizing problems (Troop-Gordon & Ladd, 2005). The conflicting findings in the literature call for further investigation. Published studies on this topic have focused exclusively on overt victimization, and relational victimization has been missing from the picture. No published study has tested the mediating or moderating role of self-esteem in the relationship between relational victimization and depressive or anxiety symptoms. As a distinct and usually neglected construct, relational victimization warrants more attention. Failure to study relational victimization hinders our ability to better understand the potential role of self-esteem on the relationships between peer victimization and internalizing symptoms.

Another limitation in the peer victimization literature is the relatively fewer number of longitudinal studies. Most published studies on peer victimization and internalizing symptoms have utilized a cross-sectional design, which does not provide information about the sequencing of the events. As a result, the causality among victimization and depressive or anxiety symptoms is not clear. Depressive and anxiety symptoms might be the result of peer victimization. However, it is also possible that the characteristics of depressed or anxious adolescents might invite bullying behaviors from

their peers. Furthermore, some researchers have suggested that the relationship might be bidirectional. Symptoms of depression and anxiety might increase individuals' risk to be the target of bullying, and the experience of peer victimization might then lead to further increases in the symptoms of depression and anxiety (Gibb & Alloy, 2006; Vernberg, Abwender, Ewell, Beery, 1992). More longitudinal studies are necessary in order to address this important question.

Gender also plays a role in the associations among two types of peer victimization and internalizing problems. There is some evidence that boys experience more overt victimization than girls, whereas girls might experience more relational victimization than boys. However, mixed findings have emerged regarding this gender difference (Crick & Grotpeter, 1995; Crick, Grotpeter, & Bigbee, 2002; Espelage, Mebane, & Swearer, 2004; Paquette & Underwood, 1999). Some evidence has suggested that boys and girls might respond differently to overt victimization and relational victimization. Girls might be more vulnerable in the event of relational victimization compared with boys, because relational aggression targets what girls care most about (i.e., the formation or maintenance of close, intimate relationship with others) (Crick, 1995; Galen & Underwood, 1997; Paquette & Underwood, 1999). The pattern might be opposite for boys, with unique contributions from overt victimization onto internalizing symptoms for boys (Crick & Nelson, 2002). However, results are again mixed. Future studies are needed in order to better understand this relationship. Furthermore, gender differences have also been found in depression, anxiety and self-esteem, with lower self-esteem, and higher prevalence of depressive and anxiety symptoms among girls during adolescence (e.g., Alpert-Gillis & Connell, 1989; Cammack-Barry, 2005; Cantwell, 1990; Harper &

Marshall, 1991; Lewinsohn, Rohds, Seeley, Klein, & Gotlib, 2000; Reynolds & Paget, 1983). The reasons behind those gender differences can be both genetic as well as environmental, such as gender role socialization. A better understanding of the gender difference can provide useful information for developing prevention and intervention programs that target boys and girls separately based on their unique needs.

Adolescence is a period of dramatic changes in physical, cognitive, social, and emotional development. During this period, adolescents begin to spend the majority of their waking time with peers, and peers play an increasingly more important role in youngsters' development (McDevitt & Ormrod, 2009; Santrock, 2007). As a result, disturbances in peer relationships such as peer victimization might have a salient impact on adolescents. Advances in adolescents' cognitive ability such as perspective taking, information processing, strategy planning, and strategy evaluating, allows adolescents to use more sophisticated strategies in relational aggression (Creusere, 1999; Crick et al., 2001). Furthermore, adolescents' advanced reasoning ability and abstract thinking allow them to make more stable internal attributions about themselves, which might impact depressive and anxiety symptoms (Beck, 1967; 1976). Interactions with peers also contribute to the development of global self-esteem or self-worth (McDevitt & Ormrod, 2009). As a result, adolescence is an important period to study peer relationship, self-esteem, and internalizing problems such as depression and anxiety.

Definition of Constructs

Definition of early and middle adolescence. Early adolescence (ages 10 -14) is a period characterized by dramatic physical changes as well as reorganization in learning experience and peer relationships. Young adolescents often experience the physical

changes of puberty as confusing and puzzling. Physical changes together with changes in the environment such as transition from elementary school to middle school, and increased expectation from adults might be stressful for adolescents. During early adolescence, peers start to become more important to adolescents. Young adolescents rely on peers for emotional support, but also become increasingly concerned about how their peers might view them (McDevitt & Ormrod, 2009). Friendships during adolescence become more stable compared to childhood; however, conflicts such as bullying and victimization also increase during this period (Pellegrini, 2002).

Middle adolescence, from about age 14 to 18, is a period of continuing physical, cognitive, and emotional changes for teenagers. During this period, most adolescents have reached puberty, and are getting more used to the physical and emotional changes they are experiencing. Similar to the early adolescence period, peers continue to be important to adolescents during mid-adolescence (McDevitt & Ormrod, 2009; Santrock, 2007). Studies show that adolescents spend almost one third of their waking hours with peers, which is more than the time they spend with adults alone (Csikszentmihalyi, 1995; Rubin, Bukowski, & Parker, 2006). Peers continue to provide emotional support, and can serve a forum for adolescents to explore self identity and make sense of confusing life experience (McDevitt & Ormrod, 2009).

Dramatic changes during early and mid-adolescence have a major impact on adolescents' cognitive, social, and psychological development. Adolescents are able to think more abstractly, and this maturation in cognition helps them to better understand themselves, and their relationship with others. Adolescents' sense of self becomes more multifaceted and more stable during this period. Instead of overestimating one's ability,

adolescents develop more realistic view about self (McDevitt & Ormrod, 2009). Developmental changes during early and mid-adolescence also put adolescents at higher risk for developing anxiety and depression disorders (Essau, Conradt, & Petermann, 1999; Lewinsohn, Clarke, Seeley, & Rohde, 1994; McGee, Feehan, Williams, & Anderson, 1992; Westenberg, Siebelink, Warmenhoven, & Treffers, 1999). Anxiety and fear towards social evaluation also increases during mid-adolescence, which might be due to the increased expectation from adults during this period compared to childhood (Westenberg, Drewes, Goedhart, Treffers & Siebelink, 2004).

In summary, early and mid-adolescence are times in which peer relationships are becoming increasingly important to adolescents as they spend most of their waking time interacting with peers. The conflicts in peer relationships such as bullying and victimization also rise during this period, and relational aggression may take on more sophisticated forms (Pellegrini, 2002). The negative impact of peer victimization on adolescents' psychosocial adjustment is severe, especially when adolescents also encounter other stressors in life such as school transition.

Definition of school transition. School transition co-occurs with the onset of puberty during early to mid-adolescence. Researchers and educators generally agree that transition from elementary school to middle school and from middle school to high school can be stressful for most adolescents. Some educators view school transition as one of the most difficult times in students' educational life (Zeedyk et al., 2003). During transitions, students move from usually small and personal elementary schools to large and less supportive secondary schools (middle or high school). Often, students leave familiar peer groups and enter into new environments with unfamiliar peers. Depending

upon the school structure, they become the youngest among their peers after being the oldest in elementary school (Blyth, Simmons, & Carlton-Ford, 1983; Sutton, 2002). Inherent in transitions are many stressors, not only academically but also socially and psychologically, such as the disturbance of school environment, changes in peer relationships, and peer status. School transition has been found to relate to increases in mental health problems such as depression and anxiety, and decreases in self-esteem (Blyth, Simmons, & Carlton-Ford, 1983; Eccles, Midgley, & Adler, 1984; Wigfield, Eccles, Maclver, Reuman, & Midgley, 1991; Tram & Cole, 2006; Simmons & Blyth, 1987). Students' involvement in bullying and victimization may also increase after these transitional periods. Adolescents might use bullying as a means to gain dominant status in the new environment, which leads to an increase in bullying and possible peer victimization after school transitions (Pellegrini, 2002; Pellegrini & Long, 2004). Considering the changes in self-esteem, depression, anxiety, and peer victimization during school transitions, it is important to explore how those variables influence each other during transitional times.

Definition of bullying and victimization. There are more than 200 different definitions of aggressive behavior in the literature, most of which focus on the intent to harm others, and the victim feeling hurt (Underwood, 2002). Prior to the work of Björkqvist and colleagues (Björkqvist, Lagerspetz, & Kaukiainen, 1992; Lagerspetz, Björkqvist, & Peltonen, 1988) and Crick and colleagues (Crick & Grotpeter, 1995; 1996), published studies mainly focused on overt forms of aggression and victimization, and failed to assess the more subtle forms of aggression (i.e., relational aggression). Studies have supported the contention that physical aggression and relational aggression are two

distinct constructs (Crick & Grotpeter, 1995; 1996; Crick & Bigbee, 1998; Prinstein, Boergers, Vernberg, 2001; Underwood, 2002). Bullying is a special type of aggression, characterized by the repetition, imbalance of power, and intent to harm during aggressive acts (e.g., Camodeca & Goossens, 2005; Espelage & Swearer, 2003; Griffin & Gross, 2004; Kokkinos & Panayiotou, 2004; Smith, Talamelli, Cowie, Naylor, & Chauhan, 2004; Smith, Cowie, Olafsson, & Liefooghe, 2002; Unnever, 2005).

Some researchers identified two distinct forms of peer victimization, namely, overt victimization and relational victimization (Crick & Bigbee, 1998; Crick, Casas, & Ku, 1999; Crick, Casas, & Nelson, 2002; Crick & Grotpeter, 1996; Cullerton-Sen & Crick, 2005). Overt victimization refers to the experience of being harmed through physical assaults and/or verbal threats of harm. Relational victimization refers to being the recipient of those aggressive behaviors that damage adolescents' peer relationships through the manipulation and destruction of social status and friendships, such as spreading rumors, and excluding one from the desired peer group (Crick & Grotpeter, 1996).

Different terminologies have been used to describe the more subtle form of aggression and victimization. Researchers have used three different terms to describe the subtler forms of aggression: indirect aggression (e.g., Lagerspetz et al., 1988), relational aggression (e.g., Crick & Grotpeter, 1995; Crick, 1996), and social aggression (e.g., Cairns, Cairns, Neckerman, Ferguson, & Gariepy, 1989; Underwood, 2003). Indirect aggression is defined as "using others as means for attack instead of attacking oneself, or otherwise manipulating the social network of the class, in order to exclude the target person from friendship groups" (Björkqvist et al., 1992, p. 118). Relational aggression is

defined as "behaviors that harm others through damage (or threat of damage) to relationships or feelings of acceptance, friendship, or group inclusion" (Crick et al., 1999, p. 77). Social aggression was described as "the manipulation of group acceptance through alienation, ostracism, or character defamation" (Cairns et al., 1989, p. 323). Although the debate regarding the three terms is on-going, Björkqvist (2001) pointed out that these three concepts are actually describing the same or very similar phenomena. The intention of the all three types of aggression is to harm a relationship or group membership in a subtle way (see also Archer & Coyne, 2005). Definitions of different types of victimization match the definitions of different types of aggression. Indirect victimization describes the experience of being the recipient of indirect aggressive behavior, such as using others as means for attack, or manipulating the social network in order to exclude the target person from the peer groups (Bjorkqvist, 1994; Lagerspetz et al. 1988). Relational victimization refers to the experience of aggressive acts that are intended to cause damage to adolescent's friendships or feelings of inclusion by peers (Crick & Bigbee 1998; Martin & Huebner, 2007). Social victimization refers to the experience of being targeted by behaviors intended to harm social status, relationships, or self-esteem (Paquette & Underwood 1999; Underwood, 2003). Regardless of the terminology used, the three constructs share in common that the victims experience attacks that are intended to harm reputation, social relationship, or feelings of acceptance in the peer group (Björkqvist, 2001; Putallaz et al., 2007; Underwood, 2004). In the current study, the term relational victimization was used to as suggested by Crick and Grotpeter (1996).

Definition of depression. The term "depression" in the psychology and psychiatry literature has been used to refer to depressive symptoms, depressive syndrome, and depressive disorder (Angold, 1988; Reinemann & Swearer, 2005; Nurcombe, 1992; Sadock & Sadock, 2003). It is important to distinguish these three terms at the beginning of this literature review in order to prevent misunderstanding. Depressive symptoms usually refer to feeling sad, unhappy, or feeling down, which is common in daily life. The term depressive syndrome is defined as a constellation of symptoms or signs (physical, cognitive and emotional) that occur together dominated by depressed mood (Angold, 1988; American Psychiatric Association [APA], 2000; Nurcombe, 1992; Reinemann & Swearer, 2005). Depressive syndrome includes mood changes, such as feeling of unhappiness, as well as psychomotor and cognitive changes. Depressive syndrome is more severe and less common compared to depressive symptoms (Cantwell, 1990; Reinemann & Swearer, 2005). The existence of depressive symptoms and depressive syndrome may or may not constitute a depressive disorder; instead they may occur together with other psychiatric disorders (Cantwell, 1990; Gold, Goodwin, & Chrousos, 1988; Reinemann & Swearer, 2005).

When the term depressive disorder is used, it usually refers to more than the existence of depressive syndrome, but also the duration and negative impact of the syndrome (Cantwell, 1990). According to the Diagnostic and Statistical Manual of Mental Disorders, fourth edition, text revision (DSM-IV-TR; APA, 2000), depressive disorders include Major Depressive Disorder (MDD), Dysthymic Disorder (DD), and Depressive Disorder not Otherwise Specified (DDNOS). MDD is characterized by the presence of at least five symptoms, such as feelings of sadness/ depressed mood, loss of

interest or pleasure, significant weight loss, insomnia or hypersomnia, agitation or retardation, loss of energy, feeling of worthless or excessive guilt, inability to concentrate, and suicidal ideation, over at least 2 weeks of time. Symptoms of DD are less severe compared with MDD, but occur over a longer period of time; at least one year for children and adolescents. When some symptoms of mood disturbance exist, but the youth does not meet the criteria of MDD and DD, diagnosis of DDNOS might be given (APA, 2000; Stark et al., 2006).

Definition of anxiety. The term "anxiety" has also been used to refer to anxiety symptoms, anxiety syndrome, and anxiety disorders. The common symptoms of anxiety include feelings of fear, anxious or worrying, which can sometimes be a part of daily living (Lewis & Volkmar, 1990; Pliszka & Olvera, 1999). For example, one study on 193 children aged 8 to 13 years found that about 70% of children reported that they worried two to three times a week (Muris, Meesters, Merckelbach, Sermon, & Zwakhalen, 1998). The term anxiety syndrome also refers to a constellation of anxiety symptoms or signs (physical, cognitive and emotional) that occur together (APA, 2000). The existence of anxiety symptoms and syndrome may or may not indicate the existence of an anxiety disorder.

Anxiety disorders are much more severe and less common compared with anxiety symptoms, and are characterized by excessive distress or fear which significantly impact individuals' daily functioning (APA, 2000). Repeated studies have shown that anxiety disorders are the most common mental health disorders among children and adolescents relative to other mental health disorders (Albano, Charpita, & Barlow, 2003; March, 1997; Pliszka & Olvera, 1999). Children and adolescents can be diagnosed with

nine types of anxiety disorders according to DSM-IV-TR (APA, 2000): separation anxiety disorder (SAD), generalized anxiety disorder (GAD), specific phobia, social phobia, obsessive-compulsive disorder (OCD), acute stress disorder; post traumatic stress disorder (PTSD), agoraphobia and panic disorder. The only specific childhood anxiety disorder is separation anxiety disorder (SAD). All the nine disorders share in common the feature of anxiety and the enduring and excessive difficulty to control fear which negatively impact individuals' normal functioning (Albano et al., 2003; APA, 2000).

Definition of self-esteem. Self-esteem is one of the oldest concepts in psychology and has been widely studies in psychological literature. As a result, there are several definitions of self-esteem (Mruk, 2010). Rosenberg (1965) defined self-esteem as "an attitude concerning one's worth as a person" (Mruk, 2010, p. 1536). Many researchers have used Rosenberg's definition and measured self-esteem using self report. Branden, on the other hand, defined self-esteem as "the experience of being competent to cope with the basic challenges of life and of being worth of happiness" (Branden, 2011, para. 2). Branden's definition, known as the dynamic definition of self-esteem, is less frequently employed in research because it is more difficult to measure (Mruk, 2010). Research has shown that self-esteem plays an important role in individual's psychological well-being. For example, adolescents' view of self has been suggested to impact depressive and anxiety symptoms (Beck, 1967, 1976). Repeated studies have suggested that low self-esteem is related to depression and anxiety (Brage & Meredith, 1994; Coates, 1997; Hammond & Romney, 1995, Mruk, 2010).

Theoretically, there are some differences between self-esteem, self concept, and self-efficacy. Self-concept usually is referred to as a relatively broad concept, including

cognitive, emotional, and behavioral aspects of the self (Byrne, 1996). It includes knowledge and beliefs about self, and it addresses the question "Who am I?" On the other hand, self-esteem usually refers to the limited evaluation component of the broader self-concept term, and it addresses the questions "How good am I as a person?" (McDevitt & Ormrod, 2010). Self-efficacy represents "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances" (Bandura, 1986, p.391), whereas "self-esteem is concerned with judgments of self-worth" (Bandura, 1997, p.11). However, construct validity research provides few empirical evidence of discriminability between self-concept and self-esteem (Byrne, 1996). Many researchers tend to use the self-esteem, self-concept, and self-efficacy interchangeably. In the current study, the researcher is more interested in the evaluation component of the self (i.e., self-esteem) because self-esteem has been found to play an important role in individual's psychological well-being, such as depression and anxiety (Brage & Meredith, 1994; Coates, 1997; Hammond & Romney, 1995, Mruk, 2010). Rosenberg's definition and measure of self-esteem were used in this study.

Purpose of the current study

The purpose of the current study is to understand the relationship among overt victimization, relational victimization, self-esteem, depressive symptoms, and anxiety symptoms over time, and to understand the effects of gender and school transition on those relationships. To accomplish this objective, the current study investigated a cognitive diathesis-stress model of overt victimization, relational victimization, self-esteem, depressive symptoms, and anxiety symptoms. Specifically, the moderating or mediating role of self-esteem was examined. Self-esteem might mediate (Figure 1) or

moderate (Figure 2) the relationship between peer victimization and depressive or anxiety symptoms. In addition, gender differences were examined. The impact of school transition on the model was also examined. Lastly, the current study examined the potential reciprocal or bidirectional relationship among peer victimization, self-esteem, depressive symptoms, and anxiety symptoms. Longitudinal data were used to examine the research questions of interest. Longitudinal design was selected because it allowed for statistical control of previous internalizing symptoms and victimization experience in order to investigate whether experience of peer victimization leads to increases in internalizing symptoms, internalizing symptoms contribute to peer victimization, or the relationship is reciprocal. Structural Equation Modeling was utilized to evaluate the model. Participants included 1,171 fifth-, sixth-, seventh-, eighth-, and ninth-grade students at Time 1 (i.e., Fall 2005) and 1,112 fifth-, sixth-, seventh-, eighth-, and ninth-grade students at Time 2 (i.e., Spring 2006), and 995 sixth-, seventh-, eighth-, ninth-, and tenth- grade students at Time 3 (i.e., Fall 2006). Participants were recruited from four elementary schools, three middle schools, and two high schools in one city in the Midwest. Data from the current study would help researchers and educators understand which individual and environmental factors may contribute to the development of depressive and anxiety symptoms in early and mid-adolescence. Results may also be used to help develop prevention and intervention school programs for students who are victims of overt and relational forms of bullying.

Chapter Two: Literature Review and Theoretical Framework

Theories Underlining the Development of Depressive and Anxiety Symptoms

Currently most researchers agree that biological factors as well as psychosocial factors are involved in the development of depressive and anxiety symptoms. Biological, behavioral, cognitive, and interpersonal theories have been widely used to explain the onset and maintenance of depressive and anxiety symptoms. The current study focuses on the complex interaction among individual cognitive factors, interpersonal interaction, and internalizing symptoms. This study seeks to examine the longitudinal relationship among peer victimization, self-esteem, depressive symptoms, and anxiety symptoms using cognitive, interpersonal, and behavioral frameworks. Three theories are particularly important in guiding the conceptualization of the study: the integrative behavioral model of depressive symptoms (Lewinsohn, Hoberman, Teri, & Hautzinger, 1985), the cognitive diathesis-stress model of internalizing symptoms (Beck, 1967, 1976; Abramson, Metalsky, & Alloy, 1989; Wright & Beck, 1983), and the interpersonal theory of depression (Joiner & Coyner, 1999).

Negative life events theory for depressive symptoms and anxiety symptoms.

Negative life events and depressive symptoms. Stressful life events have been found to play a primary role in the development of depressive symptoms (Hammen & Rudolph, 2005; Garber & Horowitz, 2002). Cross-sectional studies as well as longitudinal studies have shown that negative life events, such as the loss of a parent during childhood or adolescence, the divorce of parents, and difficulties in peer relationships, are related to the onset and maintenance of depressive symptoms and depressive disorder (Allgood-Merten et al., 1990; Compas, 1987; Ge, Lorenz, Conger,

Elder, & Simons, 1994; Ge et al., 2001; Goodyer, Herbert, Tamplin, & Altham, 2000; Hammen, 1991; Hammen & Rudolph, 2005; Heller, 1996; Sadock & Sadock, 2003; Shu, Wang, Liu, 2006). However, the mechanism underlining this process is not clear (Garber & Horowitz, 2002; Lewinsohn & Essau, 2002). Since not all people who experience severe life events develop depressive symptoms, alternative etiologic arrangements are warranted.

Some studies have focused on biological responses related to stress in order to clarify the stress-generation process. Researchers suggest that stressful life events that precede the onset of depressive disorder might cause neurobiological changes in the brain (Gold, Goodwin, & Chrousos, 1988; Sadock & Sadock, 2003), or cause inflammation in the immune system (Miller & Blackwell, 2006). As a result of those biological changes, an individual might be at a higher risk to develop subsequent depressive symptoms or depressive disorders.

It is also possible that a stressful life event is the consequence instead of the cause of depressive symptoms. Hammen (1991), in a longitudinal study with adult women, found that depressed individuals contribute to the generation of stressful life events, and it is the mix of depressed women's personal characteristics and contextual factors that contributes to the stressful event occurrence. Similar results have been duplicated in other studies (Potthoff et al., 1995; Rudolph et al., 2000), suggesting the possible link from depressive symptoms to subsequent negative life events, which then contribute to later depressive symptoms.

Negative life events and anxiety symptoms. Researchers suggest that negative life events are related to the onset and maintenance of anxiety disorders. Studies have shown

that among patients with panic disorder, 80% have experienced some negative life events before his or her first panic attack (Barlow, 2002). Some evidence also exists that stressful experiences might precede the onset of social phobia (APA, 2000). Anxiety symptoms during childhood have shown to be predicted by negative life events (Shaw, Keenan, Vondra, Delliquadri, Giovannelli, 1997). Viewing peer victimization as a negative event, retrospective studies have shown that being victimized during elementary school is related to higher general anxiety symptoms and social anxiety symptoms during adolescence (Cammack-Barry, 2005). However, not everyone who experiences negative life events develops anxiety symptoms. Other factors might also play a role in the development of anxiety symptoms. It is possible that anxiety symptoms might contribute to the onset of stressful life events. For example, anxious individuals' tendency to perceive non-stressful events as threatening might lead to a higher frequency of perceived negative life events, such as peer victimization (Puliafico & Kendall, 2006).

Applying negative life events theory in the current study, adolescents' experience of overt victimization, relational victimization and school transition is conceptualized as negative life events, which might lead to later depressive and anxiety symptoms. Meanwhile, it is also possible that previous depressive and anxiety symptoms might lead to later stressful life events, which then contribute to the exacerbation and/or maintenance of subsequent depressive or anxiety symptoms. In summary, the relationship between two types of peer victimization (overt and relational) and depressive/ anxiety symptoms might be reciprocal instead of unidirectional. The current study tested the reciprocal model between victimization and depressive and anxiety symptoms.

Cognitive diathesis-stress model for depressive symptoms and anxiety symptoms.

Cognitive diathesis-stress model for depressive symptoms. According to the cognitive diathesis- stress model, depressive symptoms results from the interaction between individual cognitive vulnerability (the cognitive diathesis) and external stress. Having cognitive vulnerabilities alone is not enough to trigger the onset of depressive symptoms. Instead, an individual's diathesis is activated in the presence of stressful life events in order to trigger the onset of the depressive symptoms. Similarly, stressful life events alone do not trigger depressive symptoms; instead stressors lead to depressive symptoms only for those individuals who have the cognitive diathesis (Abramson et al., 1988; Beck, 1967). The cognitive diathesis has usually been conceptualized as distorted cognitions which individuals use to interpret life events in a depressive-inducing way (Hammen & Rudolph, 2005), for example, attributing negative events to global, stable, and internal factors (Abramson et al.; Lewinsohn, Joiner, & Rohde, 2001), depressive cognitive schemas, negative beliefs about self (i.e. low self-esteem), negative beliefs about future (Beck, 1967), and low perceived competence (Cole, 1990).

Beck and other cognitive psychologists have suggested that a negative view of the self is a central component in the development of depressive symptoms (Beck, 1967; 1976; Wright & Beck, 1983). They proposed that depressed individuals tend to have dysfunctional schemas when activated by negative life events (stress), leading to negative automatic thoughts, such as distorted views about the self, the world, and the future (cognitive triad), which then leads to depressive symptoms and depressive disorders. For example, the experience of victimization might activate student’s negative schema about

self, such as “I am a failure. Everyone hates me.” This schema then leads the individual to develop negative beliefs about him or herself such as “I am unlovable, worthless, and helpless,” and experience the world as hostile, and develop a negative outlook on the future. This individual is at risk for depressive symptoms (Rose & Abramson, 1992; Stark et al., 1995; Stark et al., 2006).

Another example of the cognitive diathesis-stress theory is the hopelessness theory of depression (Abramson, Metalsky, & Alloy, 1989), which proposes the causal pathway to hopelessness depression (one subtype of depression). In hopelessness theory, individuals use negative cognitive styles to interpret negative life events. Three types of negative inference or cognitive styles are more likely to lead to depressive symptoms: (1) attribute events to stable and global causes; (2) predict negative consequences of the event; and (3) perseverate on negative self-characteristics. This negative cognitive style or inferential style is the cognitive diathesis, which only operates in the presence of negative life events (stress), which then lead to depressive symptoms (Rose & Abramson, 1992).

Evidence exists for the cognitive diathesis-stress model of depressive symptoms. Studies show that individuals who perceive themselves as not competent, who maintain negative beliefs about the self, world, and future, and who make more stable and global attributions for their failure in lives, have an increased likelihood of developing depressive symptoms (Bruce, et al., 2006; Hilsman & Garber, 1995; Robinson, Garber, & Hilsman, 1995; Seroczynski, Cole, & Maxwell, 1997).

One challenge for the cognitive diathesis-stress model is that it is hard to rule out the possibility that negative cognitions are the concomitant or consequence of depressive

symptoms, instead of the cause. Some cross-sectional studies have provided support for the hypothesis that depressed children report a more negative attributional style than nondepressed children (Garber & Hilsman, 1992; Gladstone & Kaslow, 1995). However, cross-sectional studies cannot prove whether cognitive diathesis precedes or follows depressive symptoms. For example, in a five year longitudinal study, Nolen-Hoeksema and colleagues (Nolen-Hoeksema, Girgus, & Seligman, 1992) found that depressive symptoms predicted later pessimistic explanatory style after controlling for previous explanatory style. In other words, a period of depressive symptoms can lead a previously non-depressed child to develop a pessimistic explanatory style.

Some researchers suggest that negative cognitions, such as beliefs about the self and the world, develop with age, and the impact of negative cognitions on depressive symptoms also increases with age (Weisz, Southam-Gero, & McCarty, 2001). Among children, cognitive diatheses, such as self-esteem and attributional styles, are not fully developed, nor are they stable, and as a result, cannot serve as a moderator for depressive symptoms (Cole & Turner, 1993; Nolen-Hoeksema et al., 1992; Turner & Cole, 1994). Among adolescents, abstract thinking and reasoning ability become more advanced, which allows adolescents to develop more stable attributions about the self and the world. In Nolen-Hoeksema and colleagues' study (1992), among children (grade three through five), only major negative life events predicted the development of depressive symptoms. Pessimistic explanatory style and the interaction between negative life events and explanatory style played no role in the development of depressive symptoms. However, for adolescents in grades six through eight, the interaction of the two played an important role. Specifically, negative life events predicted the onset of depressive symptoms only

in the presence of a negative/pessimistic attributional style among adolescents, but not among younger children. The authors suggested that the lack of effect of cognitive factors or the interaction between stressful life events and cognitive factors in childhood depressive symptoms might be because younger children's explanatory style is still malleable. Similarly, Turner and Cole (1994) also found the influence of negative cognition on the onset of depressive symptoms only existed among eighth graders, but not fourth and sixth graders. As a result, researchers suggest that cognitive diathesis for depression emerges with age (Cole & Turner, 1993; Nolen-Hoeksema et al., 1992; Turner & Cole; Weisz, Southam-Gero, & McCarty, 2001). Only when children reach a more advanced level of cognitive development (e.g., concrete or formal operational thought) and develop relatively stable cognitive styles (e.g., attribution style) at about age 12, will cognitive diathesis moderate the relation between negative life events and depressive symptoms (Cole & Turner, 1993; Rose & Abramson, 1992, as cited in Gibb & Alloy, 2006; Turner & Cole, 1994). Before that, the cognitive diathesis might play a mediating role in the development of depressive symptoms among children and young adolescents. Specifically, the experience of stressful life events might lead to the development of negative cognitions over time, which then contributes to the onset of depressive symptoms (Cole & Turner, 1993). Recently, this mediation model has received some empirical support (Gibb & Alloy, 2006; Ladd & Troop-Gordon, 2003). However, the studies testing the cognitive diathesis-stress model among children and adolescents are far from conclusive.

Cognitive diathesis-stress model for anxiety symptoms. Besides being used to explain depressive disorders and depressive symptoms, the cognitive diathesis-stress

model can also be applied to anxiety disorders and anxiety symptoms. Some researchers suggest that the interaction between dysfunctional cognitive style and stressful life events might underlie the development of anxiety symptoms. Beck (1976; Beck, Emery, & Greenberg, 1985) suggested that anxious individuals tend to overestimate the threat of a given situation. This persistent tendency is the cognitive diathesis, which is activated in the presence of the stress, which then activates automatic physiological arousal, inhibition of behavior, and negative automatic thoughts. Taken together, they might lead to further arousal, and the development of anxiety symptoms (Kasper, Boer, & Sitsen, 2003). Schmidt, Polak, and Spooner (2001) suggested when individuals with a genetic diathesis experienced stressful life events, such as peer rejection, the experience might lead to different physiological reactions, such as increase in heart rate, cortisol, and abnormal EEG activity, which is too uncomfortable for the individual to maintain engagement in the social situation. This avoidance of social interaction might cause social anxiety symptoms over time. Other studies showed that anxiety sensitivity (a cognitive diathesis, defined as the fear of anxiety and anxiety-related sensations) interacted with stressful life events to predict panic symptoms among adolescents (Leen-Feldner, Zvolensky, & Feldner, 2006), posttraumatic stress disorder (PTSD) symptoms (Bernstein et al., 2005), and the number of panic attacks and agoraphobic avoidance among adults (Zvolensky, Kotov, Antipova, & Schmidt, 2005). Gazelle and Ladd (2003) also proposed that children's anxious solitude, such as feeling anxious about social situations, and behavioral inhibition, might serve as a cognitive diathesis, and peer victimization and school transition might function as stressors. The negative experience with peers, such as exclusion, confirms children's anxious solitude; as a result, children

might feel hopeless, or more anxious about future social situations. In conclusion, the combination of cognitive diathesis, such as tendency to overestimate the danger or anxious solitude or distorted schema about self, together with life stress, such as the experience of peer victimization, might lead to anxiety symptoms over time.

In summary, the cognitive diathesis-stress model has been applied to explain the onset of depressive and anxiety symptoms among children and adolescents, although the results are not conclusive. In the current study, the experience of peer victimization and school transition are conceptualized as negative life events. Low self-esteem is conceptualized as a cognitive diathesis. It is hypothesized that adolescents who have a cognitive diathesis (i.e., negative view of self) and who experience negative life events (i.e., overt and relational victimization and other disturbances during school transitions) are at increased risk for developing depressive and anxiety symptoms. Positive self-esteem may serve as a protective factor when adolescents experience negative life events. Specifically, those adolescents with a positive view of self might not be at as high risk for developing depressive and anxiety symptoms, in the event of negative life events.

Interpersonal theory for depressive symptoms and anxiety symptoms. Interpersonal theory suggests that interpersonal experience, especially relationships with significant people in life, "affects mood outcomes by laying down a negative and stable view of the interpersonal world" (Joiner & Coyner, 1999, p.13). This negative and stable viewpoint increases individuals' risk for developing depressive and anxiety symptoms (Joiner & Coyner; Sullivan, 1953, as cited in Bosacki, Dane, & Marini, 2007). Negative life events and interpersonally relevant maladaptive schemas might lead to negative interpersonal interactions, which reinforces negative self schemas, and reduces

individuals' opportunity to receive social support, or practice social skills, which contributes to the onset and maintenance of depressive symptoms (Reinemann & Swearer, 2005). According to Bowlby (1980), children develop "working models" based on their interactions with attachment figures in life, such as caregivers, teachers, and peers. Negative interpersonal interactions with important people in life lead to working models of the self as unworthy of love and others as untrustworthy. Such working models are likely to increase children or adolescents' vulnerability to depressive symptoms (Lewinsohn & Essau, 2002). According to Sullivan's interpersonal theory (1953, as cited in Bosacki, Dane, & Marini, 2007), children with peer relationship difficulties are also at high risk for developing social anxiety symptoms.

Cross-sectional research has shown that dysfunctional interpersonal patterns, such as insecure attachment with parents, relationship difficulties with peers, are related to depressive and anxiety symptoms among children and adolescents (Hawker & Boulton, 2000; Kenny, Moilanen, Lomanx, & Brabeck, 1993; Rudolph, K. D., Hammen, C., & Burge). However, given the lack of longitudinal studies in this domain, it is unclear whether interpersonal difficulties are a cause, correlate, or consequence of adolescent depressive symptoms and anxiety symptoms. It is possible that relationship problems precede depressive symptoms, which then contribute to later interpersonal difficulties. Depressed children have interpersonal difficulties (e.g. limited social skills) that prevent them from developing new and positive interpersonal relationships. As a result, the relationship between interpersonal difficulties and depressive symptoms is more likely to be bidirectional among adolescents (Coyne, 1976; Lewinsohn & Essau, 2002). The same

logic holds true for anxiety symptoms, although not discussed explicitly in the interpersonal theory.

According to interpersonal theory, adolescent girls put more emphasis on peer relationships compared with younger children or boys. As a result, negative interpersonal experiences with peers might be more detrimental to adolescent girls. The link from interpersonal stress to depressive symptoms might be more salient for females (Garber & Flynn, 2001). Considering girls value close relationships and place great importance on the close, dyadic interactions during middle childhood (Maccoby, 1990; Underwood, 2002), it is plausible that being betrayed by close friends can be very upsetting for young girls, which might cause subsequent depressive symptoms.

In regards to the current study, negative experience in the interpersonal relationship (i.e., experience of peer victimization) are hypothesized to lead to depressive and anxiety symptoms in adolescents, especially among adolescent girls. The relationship is also hypothesized to be bidirectional, meaning depressive symptoms and anxiety symptoms might contribute to later peer victimization.

Overview of Previous Literature on Peer Victimization, School Transition, Self-esteem, Depressive Symptoms and Anxiety Symptoms

Prevalence and commobidity.

Prevalence of bullying and victimization. Bullying is a pervasive problem facing adolescents today. The estimated prevalence of bullying varies greatly as the result of the different definitions and methods used to measure bullying. Different studies have found that 4.7% to 82.3% of secondary school students report being bullied (e.g., Bond, Carlin, Thomas, Rubin, & Patton, 2001; Dake, Price, & Telljohann, 2003; Dulmus, Theriot,

Sowers, & Blackburn, 2004; Dulmus, Sowers, & Theriot, 2006; Marini, Dane, Bosacki, & YLC-CURA, 2006; Nansel, et al., 2001; National Center for Education Statistic, 2007), and 9% to 28% students report bullying others (e.g., Duncan, 1999; Marini et al., 2006; Nansel, et al., 2001). The wide range of estimates from different studies is due to the different age groups studied, and various definitions of bullying and assessment methods used. For example, some studies used a more lenient frequency cut-off point in their definition of bullying. Some studies used students' self-report, but other studies used teacher report or observation to measure bullying.

Prevalence of depressive symptoms and depressive disorders. Research has shown that depressive symptoms are not uncommon among adolescents. For example, researchers found that about 40% of adolescents (ages 14 and 15) reported experiencing depressive symptoms, such as depressed mood (Rutter, Tizard, & Whitmore, 1970, as cited in Kendall, 1993). Children and adolescents may experience some depressive symptoms, but not meet the criteria for depressive disorders. As a result, depressive disorders are less common compared to depressive symptoms. Angold and colleagues conducted a review of 21 population-based studies published between 1987 to 1997 on children and adolescents, and found that the prevalence rate (3 month to 12 month) of depressive disorders varied from 0.3% to 8 % (Angold, Costello, & Erkanli, 1999). Other recent studies suggest that rates of depressive disorders among adolescents ranges from 2.6% to 24% (Costello, Mustillo, Erkanli, & Keeler, & Angold, 2003; Garber, 2000; Lewinsohn, Clarke, Seeley, & Pohde, 1994; Riolo, Nguyen, Greden, & King, 2005; Rushton, Forcier, & Schectman, 2003). The large variation of the prevalence rate of depressive disorders might be due to different composition, such as age and ethnicity of

samples, and different prevalence intervals used. Studies with shorter intervals, such as three-month interval, and a single data wave usually show lower prevalence rates compared with longer intervals such as 12-month or lifetime (Costello, Egger, & Angold, 2004). Studies on adolescents from clinic samples usually show higher prevalence rate of depressive disorders, ranging from 13% to 61% (e.g., Hodge & Siegel, 1985; Peterson et al., 1993), compared to adolescents in community samples.

Prevalence of anxiety symptoms and anxiety disorders. Research has shown that anxiety disorders are the most common form of mental disorders in children and adolescents (March, 1997). The estimated prevalence rate of anxiety symptoms, such as worries and fears, has been found to be as high as 69% among children (Muris et al., 1998; Spence, 1997). The estimated prevalence rate (3-month to 12-month) of anxiety disorders varies from 1% to 19.7% with a median of 7.4% based on 21 population based studies (Angold et al., 1999). Similarly, another review found 2.8% to 20.3% of adolescents met the criteria for any anxiety disorder currently or within 3-12 months (Costello et al., 2004). The rate of anxiety disorders in a clinical sample can be as high as 76% (Last, Hersen, Kazdin, Finkestein, & Strauss, 1987). The results on the prevalence rate of anxiety symptoms is not clear either, but it is reasonable to expect that the rate of anxiety symptoms is higher than the rate of anxiety disorders because individuals may experience some anxiety symptoms but not enough to meet the diagnostic criteria for any anxiety disorders. The variability of the prevalence rate might be due to the sample composition and the different intervals used.

Comorbidity of depression and anxiety. During the past two decades, many studies have documented the high comorbidity between anxiety disorders and depressive

disorders among children and adolescents. The comorbidity rates of depressive and anxiety disorders vary greatly among different studies. In a review of 21 population-based studies on adolescents (mostly 10-18 years old), researchers found among youth with anxiety disorders, 0–69% (median = 17%) of them had a comorbid depressive disorder, while 0–75% (median = 40%) of depressed youth also had an anxiety disorder (Angold et al., 1999). Other studies and reviews also found the comorbidity rate of anxiety disorders and depressive disorders ranged from 15.9 to 61.9% (Brandy & Kendall, 1992; Last et al., 1987; Lewinsohn et al., 1994). The comorbidity rate in clinic samples is higher, ranging from 24 to 79% (see Dadds, Jamies, Barrett, & Verhulst, 2004 for a review). The large variation in the comorbidity rates might be attributed to the differences in criteria used such as DSM-III versus DSM-IV, specific disorders included in the studies, data collection methods used, such as relying only on parent report versus child self-report, age of the sample, and the sample size (Lewinsohn et al., 1994).

Peer victimization and psychosocial adjustment.

Cross-sectional studies on peer victimization and psychosocial adjustment. A number of cross-sectional studies have shown that peer victimization is related to psychosocial adjustment, such as depressive symptoms (e.g., Boivin, Hymel, & Bukowski, 1995; Faust, Baum, & Forehand, 1985; Hodges, Boivin, Vitaro, & Bukowski, 1999; Slee 1995; Swearer et al., 2001; Raskauskas, 2005), general anxiety symptoms (Crick & Bigbee, 1998; Crick & Grotpeter, 1996; Duncan, 1999; Graham, Bellmore, & Juvonen, 2003; Green, 1988; Olweus, 1978), social anxiety symptoms(Craig, 1998; Marini et al., 2006; Slee, 1994; Storch, Brassard, & Masia-Warner, 2003; Storch & Masia-Warner, 2004), and low self-esteem (Graham et al., 2003; Green, 1988; Mynard,

Joseph, & Alexander, 2000; Raskauskas, 2005). In a recent review of cross-sectional studies published between 1978 and 1997, researchers found that being victimized by the peers was significantly correlated with depressive symptoms (r = .29), generalized anxiety symptoms (r = .21), social anxiety symptoms (r = .14), and lower global/general self-esteem (r = .21) for studies avoiding shared method variance, or r = .45, .25, .25, .39 respectively, for studies with shared method variance (Hawker & Boulton, 2000).

Relational victimization as a unique phenomenon independent from overt victimization has not been widely studied. Few studies have tested the unique contribution of relational victimization to internalizing symptoms. When taking a close look at different types of victimization, there is some evidence that relational victimization and overt victimization might lead to different psychosocial outcomes, especially when gender and ethnicity are considered. In a recent study using multiple informants (self, teacher, peer, and observer), relational victimization was found to relate to more psychosocial adjustment problems, such as stronger correlation with social avoidance as assessed by teachers, sadness by observer, and self-reported loneliness, compared with overt victimization among fourth grade girls (Putallaz et al., 2007). Another study found that relational victimization, instead of overt victimization, correlated to girls' depressive symptoms and self-esteem, while overt victimization correlated to boys' depressive symptoms (Prinstein et al., 2001). One study on American and Hispanic American elementary school students (aged 8 to 13) found that overt victimization, but not relational victimization, correlated to anxious and depressive symptoms (Storch, Zelman, Sweeney, Danner, & Dove, 2002). Victims of both forms of aggression (physical and relational) were at greater risk for developing internalizing

symptoms compared with those who only experienced one type of victimization (Prinstein et al., 2001).

In summary, sufficient evidence suggests that victimization is significantly related to concurrent psychosocial adjustment (e.g., depressive symptoms, anxiety symptoms, and low self-esteem). However, because most studies used cross-sectional designs, it is not clear whether or not victimization precedes or follows adjustment difficulties. Researchers have suggested that "there is little need now for further cross-sectional studies of peer victimization and psychosocial maladjustment. It is clear enough already that victims are distressed" (Hawker & Boulton, 2000, p. 453). However, the causality among victimization and depressive symptoms/anxiety symptoms is less clear. More longitudinal studies are necessary in order to address this important question (Hawker & Boulton, 2000).

Does peer victimization predict later depressive symptoms and anxiety symptoms? Besides negative life event theory, a number of other theories have also suggested that the experience of victimization plays an important role in the development of depressive symptoms and anxiety symptoms, such as Gilbert's (1992, cited in Hawker & Boulton, 2000) social rank theory. Gilbert proposed that bullying attacks individual's social ranks in the peer group, which makes victims feel powerless, which in hence leads to depressive symptoms. It is also possible that the experience of victimization leads to negative perceptions of self, less social support and pleasurable experiences with peers, which causes internalized distress or anxiety towards future social situations (Crick & Bigbee, 1998; Prinstein, et al., 2001; Owens et al., 2000; Vernberg, 1990). Researchers found that children who were victimized were also rejected and disliked by their peers

(Dempsey et al., 2006; Veenstra, et al., 2005), and more isolated than peers (Veenstra, et al., 2005), which might result in the development of depressive and anxiety symptoms (Dempsey et al., 2006). As mentioned above, most studies on the relationship between peer victimization and depressive symptoms and anxiety symptoms are cross sectional studies (see Hawker & Boulton, 2000, for a review), or case studies (e.g., West & Salmon, 2000). Fewer longitudinal studies have explored the long term effect of victimization on depressive symptoms and anxiety symptoms.

Several retrospective studies have shown the correlation between childhood victimization and adult depressive symptoms and anxiety symptoms. Adults who experienced bullying during childhood had higher levels of general state anxiety symptoms, and were more likely to be diagnosed with social phobia, agoraphobia, and non-melancholic depression compared with adults who did not experience bullying (Gladstone, Parker, & Malhi, 2006). College students who reported childhood victimization had significantly higher levels of depressive and anxiety symptoms (Duncan, 1999; Roth, Coles, & Heimberg, 2002) compared with students who were not victimized in childhood. A retrospective study also showed that being victimized during elementary school related to higher general anxiety symptoms, social anxiety symptoms, and low self-esteem during adolescence (Cammack-Barry, 2005). However, retrospective studies might be biased because depressed or anxious adults might have a distorted memory about their childhood experience. Longitudinal studies are needed to rule out the confounding variable of memory distortion.

A few longitudinal studies support the long term effect of victimization on self-reported depression and anxiety symptoms. Olweus (1993a) was among the first

researchers to document the longitudinal link between victimization and depressive symptoms. In his study, boys who were victimized during grade six to nine were more depressed, and had lower self-esteem as adults at age 23 compared with boys who were not victimized during adolescence. Other more recent studies also found that adolescents' experience of rejection by peers predicted subsequent depressive symptoms (Hanish & Guerra, 2002; Nolan et al., 2003) and anxiety symptoms (Hanish & Guerra, 2002). However, at least one study does not support the long-term effect of victimization on depression. Students who were victimized previously were more likely to have a previous diagnosis of depression, but not a current diagnosis of depression (i.e., at the time of data collection). This finding does not support the longitudinal relationship between students' previous experience of victimization and later depressive symptoms (Mills, Guerin, Lynch, Daly, & Fitzpatrick, 2004). This inconsistent finding might be due to the long interval between the assessment of previous peer victimization and later depression measure, as well as the frequency and severity of the victimization experience. When the interval is too long, the potential effects of victimization on depression might be obscured (Gibb & Alloy, 2006). Furthermore, Mill et al.'s study (2004) only reported the data on the diagnosis of depressive disorders. It is possible that students who were victimized did develop more depressive symptoms later, but not severe enough for the diagnosis of depressive disorders.

Does depressive symptoms predict later victimization? Hammen's (1991) stress generation theory proposed that people who are depressed respond to their environment in a certain way that leads to more stressful life events, which causes additional depressive symptoms. Applying Hammen's theory in the peer victimization context,

researchers suggested that it is also possible that depressed youngsters, because of their negative perception of self and others and their lack of social competence, might "invite" bullying from peers (Rudolph & Clark, 2001). Studies have shown that children and adolescents who acted in a depressed manner or displayed depressive symptoms are rated by peers as less popular compared with those who did not show depressive symptoms (Connolly, Geller, Marton, & Kutcher, 1992; Peterson, Mullins, & Ridley-Johnson, 1985). Adolescents with depressive symptoms were found to have maladaptive problem solving styles, evidenced by more hostility and withdrawal in social interactions (Quiggle et al., 1992; Rudolph, Hammen, & Burge, 1994), engaging in less prosocial behavior and more aversive behavior (Altmann & Gotlib, 1988; Rudolph et al., 1994), being less accepted by their peers (Patterson & Stoolmiller, 1991), and having poorer friendship quality (Goodyer, Wright, &Altham, 1990). Taken together, because of their characteristics associated with depression, those adolescents might be more frequent targets for peer victimization.

Some empirical studies have partially supported the link from depressive symptoms to peer victimization. One longitudinal study showed that students' self-reported depressive symptoms at age eight significantly predicted experience of victimization at age 16 (Sourander, Helstelä, Helenius, & Piha, 2000). However, another study did not find that depressive symptoms predicted subsequent peer rejection from sixth grade to eighth grade (Nolan et al., 2003). It is plausible that depressive symptoms might predict victimization; however, the results are still mixed. More empirical studies are needed before any definitive conclusion can be made.

Does anxiety symptoms predict later victimization? It is also possible that the characteristics of anxious adolescents, such as fearfulness, social withdrawal, and lack of social competence, invite victimization from their peers (Bernstein & Watson, 1997; Hodges & Perry, 1999; Olweus, 1993a). Some studies have indirectly shed light on this hypothesis. Adolescents with anxiety disorders have been rated by parents or teachers as less socially competent (e.g., Benjamin, Costello,&Warren, 1990; Biederman, Rosenbaum, Bolduc- Chansky, & Kendall, 1997), rejected and neglected more often by their peers (e.g., Ginsburg et al., 1998, Hanish & Guerra, 2002; La Greca and Stone, 1993), lack positive interaction with friends (La Greca and Lopez, 1998), and avoid social interaction with peers (Storch et al, 2005). Taken together, the symptoms and characteristics related to anxiety put those adolescents at greater risk for victimization.

The existing literature provides limited empirical support for the hypothesis that social anxiety and phobia may predict peer victimization over time. Based on retrospective parental interview, adolescent boys who were victimized at school showed anxious characteristics, such as being sensitive and cautious, from early childhood (Olweus, 1993a). In a cross-sectional study, researchers found an indirect pathway linking social anxiety symptoms with decreased peer acceptance through social withdrawn behavior and a direct link from social anxiety symptoms to increased peer victimization (Erath, Flanagan, & Bierman, 2007). Hodges and Perry (1999) also found that internalizing problems and physical weakness among children and adolescents (grades three through seven) contributed uniquely to gains in peer victimization one year later. In another longitudinal study, although social anxiety and social phobia symptoms did not predict later victimization, increases in social anxiety and social phobia symptoms

for boys were positively associated with increases in relational victimization over time (Storch et al., 2005). However, the link from anxiety symptoms to peer victimization was not found in some studies. Vernberg et al. (1992) found that social anxiety symptoms did not significantly predict overt victimization or social exclusion eight months later. Bond et al. (2001) found that general anxiety symptoms and depressive symptoms at age 13 did not predict peer victimization one year later. It is plausible that anxiety symptoms might predict victimization; however, more empirical support is needed before any conclusions can be made.

Reciprocal relationship. The inconsistent findings on victimization, depressive symptoms, and anxiety symptoms have led some researchers to suggest that the vicious cycle of victimization and depressive symptoms and anxiety symptoms might explain these contradictory findings (Marini, Dane, Bosacki, & YLC-CURA, 2006; Vernberg et al., 1992). Some symptoms of depression and anxiety might exist before the individual is victimized, while other symptoms might develop as the result of peer victimization (Bernstein & Watson, 1997). Specifically, adolescents who are depressed or anxious in social situations might be more likely to be picked on or teased than other adolescents. This experience of victimization might further reinforce their negative beliefs about self ("I am unlovable") and others ("no one likes me" and "everyone wants to embarrass me"), which contributes to the maintenance and/or the increase of their depressive symptoms and anxiety symptoms. On the other hand, adolescents who are bullied by others might develop schemas or beliefs that the world is unsafe and dangerous and bullying is not within their control, which might lead to feelings of helplessness and excessive worries, and symptoms of depression and anxiety. Then, those adolescents who experience

anxious feelings and depressed mood because of victimization might develop avoidance towards social situations in order to reduce the uncomfortable feelings or physiological arousal related to the symptoms. However, avoidance of social interactions deprives them of future opportunities to practice their social skills and to experience positive interactions with peers, which might further increase their probability to be the victim of bullying again in the future (Craig, 1998; Hodges & Perry, 1999; Grills, & Ollendick, 2002; Roth, Coles, & Heimberg, 2002). In sum, it is possible that the reciprocal relationship exists, and symptoms of depression and anxiety might increase individuals' risk to be the target of bullying, and the bullying experience might then lead to further increases in the symptoms of depression and anxiety (Marini et al., 2006; Vernberg et al., 1992).

Some longitudinal studies have provided some empirical support towards the reciprocal relationship between depressive symptoms/anxiety symptoms and victimization. Vernberg (1990) found that peer victimization predicted depressive symptoms six months later and that depressive symptoms also contributed to the increase in peer victimization six month later. A transactional relationship among verbal victimization, attributional style, and depressive symptoms was found among fourth and fifth grade students over a six-month interval (Gibb & Alloy, 2006). However, Vernberg et al. (1992) did not find this reciprocal relationship. Vernberg and colleagues found that previous social anxiety symptoms predicted the emergence of companionship and intimacy in newly formed friendships, but not peer victimization eight months later, while previous victimization predicted fear of negative evaluation for both boys and girls, and social avoidance for girls six month later. In summary, although the findings are

mixed, a reciprocal rather than a unidirectional relationship might exist between peer victimization, depressive symptoms, and anxiety symptoms. The current longitudinal study tested this reciprocal model.

Effect of school transition on self-esteem, depressive symptoms, anxiety symptoms, bullying, and victimization.

School transition as a negative life event. Researchers and educators generally agree that the transition from elementary school to middle school or from middle school to high school can be stressful for some adolescents. Some educators view school transition as one of the most difficult times in students' educational life (Zeedyk et al., 2003). During transition, students move from usually small and personal elementary school to large and less supportive secondary school (middle or high school). There is less individualized instruction in the secondary school, and teacher-student relationships are typically more superficial. Standards for assigning grades become more rigorous and competition among classmates increases. Adolescents leave a familiar peer groups and enter into a new and unfamiliar environment. Also their status at school changes from the oldest in elementary school to the youngest in the secondary school (Blyth, Simmons, & Carlton-Ford, 1983; McDevitt & Ormrod, 2009; Sutton, 2002). Transition brings along with it a lot of stressors, not only academically but also socially and psychologically, such as the disturbance of school environment, changes in peer relationships, and peer status. Among the stressors experienced by adolescents during transition, concern about bullying was ranked top one by students (as well as parents) in UK during transition to both middle school and high school (Zeedyk et al., 2003). In another study, peer relationships were ranked as the number two stressor (next to the

academic challenges) by ninth graders (Newman, Lohman, Newman, Myers, & Smith, 2000) in the U.S. This concern about bullying and peer relationships after the school transition is consistent with dominance theory, which suggests that bullying might increase shortly after the school transition (Pellegrini, 2002; Pelegrini & Long, 2004). Thus, the school transition can be conceptualized as a stressful life event for adolescents.

School transition and self-esteem. Difficulties during the school transition might have a long-term negative impact on students. Some researchers found that student's general self-esteem and self-concept of academic abilities declined after the transition into middle school (Blyth et al., 1983; Eccles et al., 1984; Wigfield et al., 1991; McDevitt & Ormrod, 2009) and high school (Eccles, Lord, Roeser, Barber, & Josefowicz-Hernandez, 1997; Simmons, Rosenberg, & Rosenberg, 1973), although one researcher found self-esteem increased again later in seventh grade (Wigfield et al., 1991). Researchers have suggested that the changes in young adolescents' self-esteem and self perception might be the result of differences in the school environments between elementary and junior high school. For example, elementary schools are usually smaller than junior high schools, and the student-teacher relationship is usually closer and more personal in elementary school than junior high school (Blyth et al., 1983; Simmons et al., 1973, Wigfield et al., 1991).

School transition and depressive symptoms and anxiety symptoms. Studies have found increases in mental health problems such as depressive symptoms and anxiety symptoms after school transitions (Adams & Adams, 1991; Eccles et al., 1997; McDevitt & Ormrod, 2009; Roeser, Eccles, & Freedman-Doan, 1999; Tram & Cole, 2006; Simmons & Blyth, 1987). For example, ninth graders were found to report more

depressive symptoms (Felner et al., 1993; Newman, Newman, Griffen, O'Connor, & Spas, 2007) and anxiety symptoms (e.g., Benner, 2008) after the transition to high school. The struggle continued into the later part of the first year or even the second year after the transition for some adolescents (Benner; Stradling & MacNeil, 2000, as cited in Zeedyk et al., 2003). However, not all students experience an increase in mental health problems after these transitions (Roeser et al., 1999; Wallis & Barrett, 1998). Individual factors (e.g., academic competence, motivation, self-regulation) and environmental factors (e.g., school climate) have been used to explain the variability in how adolescents adapt after the school transition (Roeser & Eccles, 1998; Roeser et al., 1999; Rudolph, Lambert, Clark, & Kurlakowsky, 2001).

School transition and bullying and victimization. Dominance theory (Dunbar, 1988) suggests that individuals are motivated to gain dominance status which leads to access to resources. After transition into a new environment, individuals renegotiate dominance status, mainly through agonistic strategies in the initial stage (Hawley, 1999; Pellegrini & Long, 2002). Once the dominance hierarchy is stabilized, individuals are more likely to use prosocial means to maintain their status, and the rates of aggression/bullying subsequently decrease (Pellegrini, 2002; Pellegrini & Long, 2004). Sutton (2002) suggested that when students move from the small and personal elementary school to the large and less supportive secondary school, they leave the familiar peer group and enter into an unfamiliar environment. They might use bullying as a strategy to re-establish dominance because peer relationships are important to students during that time. Large scale cross-sectional studies have shown that the rates of bullying increased during transition from primary to secondary school (Olweus, 1993b), and then declined in

high school (Pepler, et al., 2006; Rigby, 1996; 1997, as cited in Pellegrini, 2002). Several longitudinal studies have demonstrated an initial increase in aggression after transition into middle school, and then a general decreasing trend afterwards (Pellegrini & Bartini, 2000, 2001; Pellegrini & Long, 2002). Research also shows that if adolescents at a similar age did not change schools, as in Ireland and England, the prevalence of bullying generally declines (Smith, Madsen, & Moody, 1999). However, one study on adolescents in British Columbia found that youth who were in a transition year, and those same grade peers who did not change schools reported similar rates of reciprocated aggression and peer victimization after controlling for gender and grade. The author suggested that aggression might only increase for a brief period and then decrease after the dominance hierarchy was stabilized. As a result, the study did not capture the potentially brief increase in aggression (Van Blyderveen, 2008).

Corresponding to the possible increase in bullying after the school transition, students' attitudes towards aggression became more positive during middle school years compared to elementary school (Graham & Juvonen, 1998; Olive, Hoover, & Hazler, 1994; Pellegrini, & Bartini, 2000), and students were more attracted to aggressive peers after entering middle school (Bukowski, Sippola, & Newcombe, 2000). Furthermore, adolescents who were aggressive during middle school were as popular as the non-aggressive peers, and were identified as the nuclear members of the social network (Cairns, Cairns, Neckeman, Gest, & Gariepy, 1988). One study also found that students who were nominated as bullies were significantly less isolated compared to all the other peers including victims, bully/victims, and uninvolved students, which suggests that children who were aggressive were also socialized in their peer groups (Veenstra et al.,

2005). Taken together, young adolescents might affiliate with aggressive peers or tolerate aggressive behaviors in order to "explore new social roles and challenge adult-endorsed social norms" (Pellegrini, 2002, p. 152), which provides an environment that allows aggressive behaviors to increase after transition to middle school or high school.

Corresponding to the possible increase in bullying and aggression after school transition, it is reasonable to expect the rate of peer victimization might also increase shortly after the transition. However, few empirical studies have examined the change in peer victimization after school transition, and the findings are not consistent (Pellegrini & Long, 2002). It is also unclear whether or not this possible change in peer victimization relates to internalizing symptoms during school transition. It is possible that multiple stressors (i.e., transition to new schools and experience of peer victimization) occurring together are more detrimental for adolescents, which might link to even higher levels of depressive and anxiety symptoms, compared with when only one stressor (i.e., peer victimization) occurs. The current study utilized a longitudinal database to examine whether or not peer victimization increases after the school transition, and if the relationship between peer victimization, self-esteem, depressive symptoms and anxiety symptoms is different for students who experienced the school transition compared with those who did not.

Peer victimization, self-esteem, and internalizing symptoms: Testing a cognitive diathesis-stress model. The cognitive diathesis- stress model suggests negative life events and cognitive diathesis together contribute to the onset of internalizing problems. The model has received much empirical support during the past two decades (Borucki, 1991; Follette & Jacobson, 1987; Garber & Hilsman, 1992; Gibb

& Alloy, 2006; Hammen, Marks, Mayol, & deMayo, 1985). As mentioned above, the experience of peer victimization can be conceptualized as a negative life event, and has been shown to relate to depressive and anxiety symptoms. However, few studies have directly tested the cognitive diathesis-stress model in the peer victimization context. Self-esteem can be conceptualized as a cognitive diathesis (Beck, 1967). However, most studies have examined the role of attributional style or social cognition as cognitive diatheses for depression. The impact of self-esteem in the relationship between peer victimization and depressive symptoms and anxiety symptoms among adolescents is unclear. Some researchers have proposed that cognitive factor might mediate instead of moderate the relationship between peer victimization and depressive symptoms (Cole & Turner, 1993; Gibb & Alloy, 2006; Turner & Cole, 1994), although no definitive conclusion has been reached at this point.

Correlation between self-esteem and depressive symptoms. The relationship between low self-esteem and depressive symptoms has been documented. Several studies have found significantly lower self-esteem among depressed children compared with non-depressed children (Asarnow & Bates, 1988; Asarnow et al., 1987; Kaslow, Rehm, & Siegel, 1984 ; Saylor, Finch, Baskin, Furey, & Kelly, 1984; Robinson, Garber, & Hilsman, 1995). In community samples, studies have shown a significantly negative correlation between self-esteem and depressive symptoms in adolescents (Allgood-Merten, Lewinsohn, & Hops, 1990; Brage, & Meredith, 1994; Coates, 1997; Hammond, & Romney, 1995; Heller, 1996; Rawson, 1992; Shu, Wang, Liu, 2006; Yanish, & Battle, 1985). However, inconsistent findings regarding self-esteem and depressive symptoms still exist. Some studies fail to demonstrate any difference in self-esteem between

depressed children and non-depressed children (Kazdin, Colbus, & Rodgers, 1986; Kazdin, French, Unis, Esveldt-Dawson, & Sherick, 1983). One study found that low self-esteem predicted nonaffective diagnoses instead of mood disorders in children (Hammen, 1988). Asarnow and Bates (1988) found 45% of depressed children scored more similarly to nondepressed children regarding their cognitive pattern (i.e., hopelessness, negative self-perceptions), and the researchers suggested that childhood depressive disorders "may be heterogeneous with respect to cognitive patterns" (p. 601). Considering discrepant findings regarding self-esteem and depressive symptoms, it is reasonable to expect that some other factors in addition to self-esteem might play a role in the onset and maintenance of depressive symptoms among adolescents. Another limitation in the current literature regarding self-esteem and depressive symptoms is that most research only demonstrated correlations of self-esteem with concurrent depressive symptoms. It is still unclear whether self-esteem is an antecedent, a consequence, or merely a symptom of depression. Considering the heterogeneity of depression among children and adolescents and the unclear relationship between self-esteem and the onset and maintenance of depressive symptoms, longitudinal data are necessary to better understand the phenomenon (Zeiss, 2006).

The moderating role of self-esteem in the development of depressive symptoms. Research findings have supported the cognitive diathesis-stress model by showing that the cognitive diathesis, such as negative self schema, interacts with stressful life events to predict depressive symptoms among young adults (Borucki, 1991; Follette & Jacobson, 1987; Hammen, Marks, Mayol, & deMayo, 1985; Metalsky, Joiner, Hardin, & Abramson, 1993) and children (Gibb & Alloy, 2006; Hilsman & Garber, 1995; Panak &

Garber, 1992; Robinson, Garber, & Hilsman, 1995). For example, Metalsky and Joiner (1992) tested the cognitive diathesis-stress model with three cognitive diatheses (belief about self, belief about consequences, and attributional style) among college students. Each diathesis was found to interact with negative life events to predict the onset of depressive symptoms five weeks later, but not anxiety symptoms, suggesting the three cognitive diatheses tested in the study are specific to depressive symptoms. Specifically, participants who exhibited a given cognitive diathesis only showed increases in depressive symptoms when the cognitive diathesis was combined with high levels of stress. In Panak and Garber's (1992) study, after controlling for the initial levels of depressive symptoms and peer rejection, the interaction between the increases in peer rejection and negative attributional style significantly predicted depressive symptoms one year later among elementary school students.

The studies testing for the cognitive diathesis-stress interaction among adolescents still have mixed results. Hammen (1988) found both self-esteem and negative life events predicted subsequent depressive symptoms in an additive instead of interactive way. In a different study, Hammen and colleagues (Hammen, Adrian, & Hiroto, 1988) found an interaction between stressful life events and self-concept and between stressful life events and attributional style in a sample of children and adolescents ages 6 to 18 years. However, these interactions only predicted changes in children's nonaffective disorder but not depressive symptoms or anxiety symptoms. Two studies found a more complex three-way interaction among attributional style, low self-esteem, and life stress contributed significantly to the prediction of the subsequent depressive symptoms (Metalsky, Joiner, Hardin, & Abramson, 1993; Robinson et al.,

1995). Taken together, the cognitive diathesis-stress model of depressive symptoms might be more complex than was proposed (Robinson et al., 1995). Most studies examining the cognitive diathesis-stress model have focused on attribution style as the cognitive diathesis, and other cognitive diathesis, such as self-esteem, has not received much attention. Considering the important role of self-esteem in the development of depressive symptoms, Robinson and colleagues suggested that future studies should also consider the potential buffering effect of high self-esteem (Robinson et al., 1995).

Few studies have examined cognitive diathesis-stress model in the peer victimization context. One study showed that attributional styles both mediated and moderated the relationship between verbal victimization and depressive symptoms six months later among fifth graders (Gibb & Alloy, 2006). Some evidence supporting the reciprocal relationship between victimization and depressive symptoms also emerged (Gibb & Alloy, 2006). Another study provided little support for the diathesis-stress model in that attributional styles were found to moderate the relationship between victimization and coping strategies, which then led to depressive symptoms and anxiety symptoms. This finding suggests the process between victimization and depressive symptoms is more complex than the two-way interaction proposed in the cognitive diathesis-stress model (Raskauskas, 2005). Considering the inconsistent findings in the literature, better models are needed to better capture the complex relationships among cognitive diathesis (self-esteem), negative life events (overt and relational peer victimization), and depressive symptoms.

The mediating role of self-esteem in the development of depressive symptoms. The moderation model of cognitive diathesis-stress has a fundamental assumption that

the cognitive diathesis remains stable and independent from the negative life events. However, researchers have suggested that youngster's attributional style and self-esteem may not be fully developed or stable until adolescence (Nolen-Hoeksema, Girgus, & Seligman, 1992; McDevitt & Ormrod, 2009). Young children usually have difficulties in articulating their beliefs about self, and tend to overestimate their abilities. The development in youngsters' cognitive abilities, such as the advanced reasoning ability and abstract thinking, allows adolescents to develop more sophisticated pictures about self and beliefs about one's own ability. Instead of overestimating one's ability, adolescents develop more realistic view about self (McDevitt & Ormrod, 2009; Santrock, 2007). This calls into question the applicability of traditional cognitive diathesis-stress moderation model of depression among children and young adolescents. As an alternative to the moderation model, researchers suggest that self-esteem might mediate the relationship between negative life events and depressive symptoms among children (Cole & Turner, 1993; Garber & Hilsman, 1992; Gibb & Alloy, 2006; Turner & Cole, 1994). Some empirical studies have shed light on the mediation hypothesis. Several studies have tested the mediating role of cognitive factors on the relationship between victimization and depressive symptoms and anxiety symptoms. At least three cross-sectional studies tested the mediation effect of cognitive diathesis on the relationship between negative life events and internalizing symptoms. One study showed that self-esteem mediated the relationship between social environmental stress (e.g. lack of parental support, employment problems) and adolescent depressive symptoms (Simons, & Miller, 1987). Another study found that adolescents' self-esteem partially mediated the relations between peer relationship problems (i.e. social isolation and alienation) and both

depressive symptoms and social anxiety symptoms, although the linkages between peer relationships and depressive symptoms were more strongly mediated by self-esteem than those between peer relationships and social anxiety symptoms (Bosacki, Dane, & Marini, 2007). The third study found that social perspective taking (i.e., adolescents' awareness of peers' thoughts and feelings in conflict situations) mediated the relationship between victimization (both physical and relational victimization) and depressive symptoms and anxiety symptoms (Hoglund & Leadbeater, 2007). However, in Hoglund and Leadbeater's study, depressive symptoms and anxiety symptoms were measured together by Youth Self-Report (YSR; Achenbach, 1991), and as a result, one cannot tell the specific impact of victimization and social perspective taking on depressive symptoms and anxiety symptoms separately. The cross-sectional nature of the above studies provides limited support for the sequencing of these associations or the causal relationship among peer victimization, depressive symptoms and anxiety symptoms.

A few longitudinal studies have also investigated the mediation model among children and young adolescents. One study found that self perception partially mediated the relationship between overt victimization between first and third grade and internalizing problems during fourth grade (Ladd & Troop-Gordon, 2003). The other study has shown that an increase in overt victimization indirectly was associated with an increase in internalizing problems through changes in social self-acceptance among fourth, fifth, and sixth graders (ages 9 to 11) (Troop-Gordon & Ladd, 2005). However, in both studies, the internalizing problems were measured using the depressive symptoms/anxiety symptoms subscale of the Child Behavior Checklist (CBCL; Achenbach, 1991) or the Teacher Report Form (TRF; Achenbach, 1991). Considering

depressive symptoms and anxiety symptoms are two different constructs, measuring them together in one scale fails to capture the unique characteristics of each construct. As a result, the unique linkages from overt victimization to depressive symptoms and anxiety symptoms separately were not tested. Another study showed that attributional style mediated the relation between verbal victimization and depressive symptoms during a 6 month follow-up among fourth graders, but attributional style both mediated and moderated the relationship between verbal victimization and depressive symptoms among fifth graders (Gibb & Alloy, 2006). However, a mediated pathway was not found from victimization to self-concept to depressive symptoms over four year periods among 1,287 12-years-old adolescents (Adams & Bukowski, 2008).

In summary, it appears that no longitudinal study has tested the mediating role of self-esteem in the relationship between relational victimization and depressive symptoms, although similar concepts have been under investigation, such as self concept and self-acceptance. No longitudinal study has directly compared the mediation or moderation role of self-esteem in the relationship between two types of peer victimization and depressive symptoms among adolescents. Baron and Kenny (1986) suggested that it is important to distinguish between mediation and moderation effects. On the other hand, these two effects are not mutually exclusive, and they can be integrated to form more complex models to reflect more sophisticated theories, which might be necessary in order to explain the complexity of cognitive diathesis-stress model. The current longitudinal study compared the mediation and moderation model of adolescent depressive symptoms. It is possible that self-esteem might mediate the relationships between peer victimization

and depressive symptoms among younger adolescents, while moderate the same relationships among older adolescents.

The reciprocal model for depressive symptoms through self-esteem. In addition to the mediation or moderation model, the relationship between victimization, self-esteem, and depressive symptoms might also be reciprocal, meaning previous depressive symptoms or low self-esteem might increase adolescents' risk of experiencing peer victimization, while the victimization experience might make adolescents more depressed and have lower self-esteem. One cross-sectional study has tested the reciprocal model through social cognition. Hoglund and Leadbeater (2007) found social cognitive process (perspective taking and interpersonal skills) partially mediated the influence of depressive symptoms/anxiety symptoms (measured together) on relational and physical victimization, as well as the influence of two types of victimization on depressive symptoms/anxiety symptoms. The authors suggested that the transactional association between victimization and depressive symptoms/anxiety symptoms might exist. However, because the data were cross-sectional, no causal relationship can be inferred from the results. Currently, few longitudinal studies have empirically tested this reciprocal relationship.

Evidence has been emerging regarding the reciprocal relationship between self-esteem and victimization. For example, retrospective studies have showed that victimization experience in childhood predicted lower self-esteem during adolescence (Cammack-Barry, 2005) and young adulthood (Ledley et al., 2006). On the other hand, negative self-perception has been identified as a risk factor for the increase in peer victimization (Caldwell, Rudolph, Troop-Gordon, & Kim, 2004; Egan & Perry, 1998).

There is also a growing body of literature suggesting that depressed individuals may contribute to the generation of stressful life events because of their depressive characteristics (Daley et al., 1997; Davila et al., 1995; Hammen, 1991; Potthoff, Holahan, & Joiner, 1995; Rudolph et al., 2000).

Only one longitudinal study has examined the reciprocal relationship between peer victimization and depressive symptoms as opposed to general internalizing problems. One six-month longitudinal study supported the reciprocal relationship between verbal victimization and depressive symptoms among fourth and fifth graders (Gibb & Alloy, 2006). As a result, researchers suggested that the relations among victimization, cognitive-diathesis, and depressive symptoms may be more complicated than that originally proposed in the cognitive-diathesis model. It may be more accurately described by a reciprocal or transactional model rather than a unidirectional model (Gibb & Alloy, 2006; Hankin & Abramson, 2001). However, this transactional pattern of victimization and depressive symptoms is far from clear. More longitudinal studies are needed in order to better understand the reciprocal relationship among victimization, self-esteem, and depressive symptoms. The current study seeks to fill this gap in the literature.

The potential role of self-esteem in the development of anxiety symptoms. Low self-esteem has also been found to relate to anxiety symptoms in adolescents (Coates, 1997; Lewinsohn, Gotlib, Lewinsohn, Seeley, & Allen, 1998; Many & Many, 1975; Rawson, 1992; Trimpey, 1989). In the cognitive diathesis-stress theory (Beck, 1967; 1976), self-esteem is not mentioned explicitly as a cognitive diathesis for anxiety; however, the possibility still exists. High self-worth (a concept similar to self-esteem) has been conceptualized by some researchers as a protective factor for anxiety symptoms

in the presence of stressful life events or fearful stimulus (La Greca & Fetter, 1995, as cited in Grills & Ollendick, 2002; Ollendick, 1983). However, few studies have empirically tested the moderating role of self-esteem in the development of anxiety symptoms. One study found that global self-worth moderated the relation between overt victimization and anxiety symptoms in sixth grade boys, but not in girls. Boys with higher global self-worth reported fewer anxiety symptoms than boys with lower global self-worth while being overtly victimized (Grills & Ollendick, 2002). However, Grills' study did not examine relational victimization, which might contribute to anxiety symptoms differently for boys and girls. One study did not find the moderating role of belief of self in the relationship between negative life events and anxiety symptoms (Metalsky & Joiner, 1992), suggesting belief of self might be a unique cognitive diathesis for depressive symptoms, not anxiety symptoms.

It is also possible that self-esteem mediates the relationship between peer victimization and anxiety symptoms. According interpersonal theory (Sullivan, 1953, as cited in Bosacki, Dane, & Marini, 2007), children with peer relationship difficulties are at high risk for developing social anxiety symptoms. Peer relationship plays an important role in the development of self perception and self-esteem (McDevitt & Ormrod, 2009). Experience of peer victimization has repeatedly been shown to relate to low self-esteem (see Hawker & Boulton, 2000 for a review). Self perception is also believed to play an important role in the development of anxiety disorders (e.g., Beck, 1987; Gotlib & Abramson, 1999, as cited in Bosacki, Dane, & Marini, 2007). As a result, it is reasonable to expect that self-esteem might mediate the relationship between peer victimization and anxiety symptoms. Two studies have tested the mediation role of self-esteem or self-

worth in the context of peer relationship and anxiety symptoms (Bosacki et al., 2007; Grills & Ollendick, 2002). It is found that adolescents' self-esteem partially mediated the relations between peer relationship problems (i.e. social isolation and alienation) and both depressive symptoms and social anxiety symptoms, although the mediation linkages between peer relationship problems and anxiety were less strong compared with the linkages between peer relationships and depressive symptoms among adolescents ages 13 to 18 **(**Bosacki et al., 2007). However, in Bosacki's study, social isolation was measured by how much participants were bothered by isolation from peers, and alienation was measured by the negative affect in the attachment relationship. Peer indirect and direct victimization were treated as dichotomous variables, and served as control variables and not tested in the mediation relationship. As a result, it is not clear from Bosacki and colleagues' study whether self-esteem mediated the relationship between peer victimization and depressive symptoms and anxiety symptoms. In another study, global self- worth (a similar concept to self-esteem) was found to mediate the relation between peer victimization and anxiety symptoms among sixth grade girls, but moderated this relationship among boys. However, only overt victimization was studied, but not relational victimization (Grills & Ollendick, 2002). In summary, few studies have explored the role of self-esteem in the development of anxiety symptoms, and the pattern is far from clear. No longitudinal studies have examined overt victimization, relational victimization, self-esteem, and anxiety symptoms simultaneously. In the current study, the mediation model and moderation model of self-esteem were both tested in the context of peer victimization (overt and relational) and anxiety symptoms. The possible

reciprocal relationship between peer victimization and anxiety symptoms through self-esteem was also tested.

Gender differences. Different theories have suggested that boys and girls are socialized in different ways in our society from an early age (e.g., Maccoby, 1995). Two Cultures Theory has proposed that children develop in separate cultures defined by gender since early childhood (Maccoby, 1995). Specifically, "the distinctive play styles of the two sexes manifest themselves in distinctive cultures that develop within boys' and girls' groups as the children grow older" (Maccoby, 1998, p.78). Since early childhood, boys and girls prefer mainly same-gender peer groups which differ significantly in terms of their play style, activity preference, discourses, etc. (e.g., Golombok, & Hines, 2002; Maccoby, 1998; Underwood, 2003). Compared with boys, girls' interaction emphasizes more intimate relationships instead of structured games (Lagerspetz, et al., 1988; Underwood, 2003). Furthermore, the social groups among girls tend to be smaller compared with those among boys, and girls' relationship involves high level of self-disclosure and intimacy (Maccoby, 1995; 1998; Underwood, 2003; 2004). Girls spend much more time sharing personal feelings, offering emotional support, telling secrets, while boys emphasize more on physical activities (Berndt, 1992; Jones & Dembo, 1989). When talking about friendships, girls mention intimate conversations with friends more often and express more worry/concerns about being rejected by their friends than boys do (Berndt, 1982). Given that girls value relationship more than boys do, it is reasonable to believe that relational aggression, such as exclusion or harming friendships, is a powerful and effective way to hurt girls, because it targets what girls care most about (Crick & Grotpeter, 1995; Paquette, & Underwood, 1999; Underwood, 2004). Victims of

relational aggression are in a difficult position to defend themselves, because they might not know who is responsible for their victimization. Even if they know who is responsible, this type of aggression might be "easier to explain away" (Lagerspetz, et al., 1988, p. 412), because a negative comment about a friend can be explained as one's true feelings, instead of trying to be mean or aggressive.

Social Role Theory suggests that males and females take different roles in the society, and society has different expectations on them. For example, women are more likely to take up domestic roles, while men are working outside of the home (Archer, 2004; Eagly & Steffen, 1986). Male gender role tends to emphasize the characteristics of being tough and aggressive, while female gender role tends to emphasize on caring and avoiding harm (Archer, 2004; Eagly & Steffen, 1986). Those different gender roles lead to different expectations and different socialization processes for boys and girls. Girls are expected to be caring, sociable, dependent, sensitive, and tolerant, while boys are expected to be confident, assertive, and dominant (Quatman & Watson, 2001). Boys might learn to use aggression as an effective way to demonstrate their masculinity, while girls are expected to avoid aggression in order to fit their feminine role (Archer, 2004). The different expectations our society places on boys and girls might help to explain gender difference in self-esteem, depressive symptoms, anxiety symptoms, bullying/victimization, and adolescents' response to peer victimization.

Gender differences in depressive symptoms. Researchers found no gender difference in depressive symptoms during childhood (e.g., Speier, Sherak, Hirsch, & Cantwell, 1995). During adolescence, more girls are diagnosed with a depressive disorder than boys (Cantwell, 1990; Hankin et al., 1998; Lewinsohn et al., 1993, 1994;

Lewinsohn et al., 2000; McGee et al., 1992). The gender difference seems to emerge during early adolescence between age 12 to age 15 (Cohen 1993; Ge, Conger, & Elder, 2001; Hankin et al., 1998; Petersen, Sarigiani, & Kennedy, 1991), and the greatest gender difference has been found to be between age 15 and age 18 (Hankin et al., 1998). By the end of late adolescence, the female-to-male ratio in depressive disorders is similar to that in adults (Lewinsohn & Essau, 2002).

Different theories have been developed to explain the gender difference in depression during adolescence, such as the hormonal changes during puberty, different coping styles (e.g., females use more rumination strategies), more negative body image, and stressful life events (Lewinsohn & Essau, 2002; Nolen- Hoeksema & Girgus, 1994; Petersen et al., 1991). Puberty is likely to have more negative meanings for girls than boys (Petersen, 1979), and girls have been found to experience more stressors than boys during adolescence (Petersen et al., 1991). Compared with males, evidence suggests that females tend to use more rumination coping strategies when depressed, which may amplify the depressive symptoms. Findings have also suggested that the difference in rumination is the result of gender role socialization and stereotyping (Nolen- Hoeksema, 1987; Nolen- Hoeksema & Girgus, 1994).

In summary, depressive symptoms and the prevalence of depressive disorders increase from childhood to adolescence. Starting in adolescence, girls are more likely to experience depressive symptoms and be diagnosed with depressive disorders than boys. The gender difference can be attributed to biological as well as environmental reasons. Considering the increase in the prevalence of depression and the emergence of gender

difference during adolescence, adolescent years have been suggested to be the best time to study depression (Hankin et al., 1998).

Gender differences in anxiety symptoms. Gender differences in anxiety disorders are less clear (Lewis & Volkmar, 1990; Albano, Chorpita & Barlow, 2003). Some studies found that more female adolescents were diagnosed with anxiety disorders than were male adolescents (Burke, Burke, Regier, & Rae, 1990; Lewinsohn et al., 1998; McGee et al., 1992). In a study with 1,709 high school students, researchers found that female adolescents were significantly more likely to be diagnosed as having anxiety disorder, and females reported more anxiety symptoms than males. Survival analysis showed that the difference emerged as early as age 6, when twice as many girls had anxiety disorders compared with boys. The gender difference continued to increase from childhood to adolescence. The rate at which girls developed anxiety disorders increased much faster than the rate for boys (Lewinsohn et al., 1998). However, other studies have shown the opposite results. One study found preadolescent boys in a clinic sample reported more social phobia symptoms than did girls (Compton, Nelson, & March, 2000). Preadolescent boys in community samples have also been found to have more anxiety disorders such as phobic disorder, social anxiety, and OCD than girls (Anderson et al., 1987; Last & Strauss, 1989). This apparent discrepancy might reflect a methodological difference, such as clinical samples versus community samples, different types of anxiety disorders studied, and the age of the participants. It might also relate to reporting bias in clinical sample where boys with symptoms of separation anxiety may be more likely to catch parental and professional attention than girls with similar symptoms, because those symptoms are perceived as less acceptable among boys (Compton et al., 2000).

When looking at anxiety symptoms instead of anxiety disorders in community samples, most findings suggest that girls report more anxiety symptoms than boys (e.g., Cammack-Barry, 2005; Compton et al., 2000; Gullone et al., 2001; Lewinsohn et al., 1998; Muris et al., 1998; Ollendick, Yang, Dong, Xia, & Lin, 1995; Reynolds & Paget, 1983; Reynolds & Richmond, 1978). However, this gender difference might be moderated by age and ethnicity. One study found that boys and girls were not different on self reported anxiety scores at sixth grade, but girls scored higher on anxiety than did boys during late adolescence (ages 16 and 17.5) (Bosquet & Egeland, 2006). European and Hispanic girls reported more worries than boys in elementary school, but the gender difference did not exist among African American students (Silverman, La Greca, & Wasserstein, 1995).

Both genetic factors and environment factors (e.g. social role theory, coping style) can be used to explain the gender difference in anxiety (Lewinsohn et al., 1998). In one study, the gender difference in anxiety symptoms and anxiety disorder diagnosis was not accounted for by the gender difference in 10 psychosocial variables (e.g., stressful life events, self-esteem, coping skills). As a result, the authors suggested that the female vulnerability to anxiety is associated with some type of genetic factors, rather than purely environmental factors (e.g., gender role difference) (Lewinsohn et al., 1998).

In summary, during adolescence, girls appear more likely to report anxiety symptoms and to be diagnosed with anxiety disorder than boys, although the pattern is less clear among younger children and preadolescents. The gender difference in anxiety might be due to both genetic and environmental factors. Adolescence might also be a good period to study gender difference in anxiety.

Gender difference in self-esteem. Global self-esteem refers to the level of general and comprehensive belief one has for the self, including judgments and feelings about self value and worth (Harter, 1993; Mcdevitt & Ormrod, 2009). During early adolescence, individuals start to develop more sophisticated pictures about self and beliefs about one's own ability (Mcdevitt & Ormrod, 2009). Repeated studies on preadolescents and adolescents have documented gender difference in self-esteem, with girls reporting overall lower self-esteem or lower self-concept than boys (Alpert-Gillis & Connell, 1989; Harper & Marshall, 1991; Marsh, 1989; Khanlou, 2004; Quatman & Watson, 2001; Simmons & Blyth, 1987; Zimmerman, Coperland, Shope, & Dielman, 1997) and in the presence of stressful life events (i.e. before examination) (Locker & Cropley, 2004). In order to better understand this moderate but well-established gender difference in self-esteem, Quatman and Watson (2001) studied different components of adolescent's self-esteem. They found that adolescent boys scored higher than girls on global self-esteem and six out of the eight specific self-esteem domains (personal security, home/parents, attractiveness, personal mastery, psychological permeability, and athletic competence), except for two domains, peer popularity and academic competence. Self-esteem was found to significantly relate to depressive symptoms (Quatman & Watson, 2001).

Age and school transition might also moderate the gender difference in self-esteem. Longitudinal studies have documented the drop of self-esteem during early adolescence when adolescents transit from elementary school to secondary school (Marsh, 1989; Zimmerman, et al., 1997); the drop appears to be more severe for

adolescent girls than for boys (Block & Robins, 1993; Harter, 2006; Mcdevitt & Ormrod, 2009; Simmons & Blyth, 1987).

One explanation for these gender differences is that society values and promotes masculine over feminine attributes (Dyson & Szirom, 1983; Harper & Marshall, 1991). From the gender role socialization, girls learn that they "are expected to be sociable, dependent, sensitive, and tolerant, while boys are expected to be confident, assertive, and dominant" (Harper & Marshall, 1991, p. 806). When adolescent girls search for their identity by adopting the female role our society places on them, they might become conflicted and confused. In order to achieve academically at school, girls need to be competitive and assertive, which conflicts with their "feminine" role. Adolescent girls might wonder if their success is perceived as "unfeminine" or threatening to boys. The role conflict might lead to lower self-esteem for girls (Harper & Marshall, 1991; Quatman & Watson, 2001).

Some researchers also suggest that the gender difference in self-esteem is related to the difference in adolescent boys' and girls' view of self. Self-in-relation theory has suggested that female's self-esteem is developed through their relations to others (Jordan, Kaplan, Miller, Stiver, & Surrey, 1991). Studies found that adolescent girls' self-esteem is more interpersonally oriented and less self-oriented compared with boys' self-esteem (Block & Robin, 1993; Little & Garber, 2000). Interconnectedness with others was associated with higher levels of self-esteem in female, but not in male (Josephs, Markus, & Tafarodi, 1992). Disturbance in the peer relationship during adolescence (e.g., school transition or peer victimization) might be more detrimental to girls' self-esteem, but not to boys'.

Gender difference in aggression and bullying. Empirical studies of gender differences in aggression contain contradictory findings. Results on physical aggression are more consistent, with boys usually engaging in more physical aggression than do girls (e.g., Bjorkqvist, Lagerspetz, & Kaukiainen,1992; Craig, 1998; Crick & Grotpeter, 1995; Owens & MacMullin, 1995; Prinstein, Boergers, Vernberg, 2001; Robinson, 1999; Rys & Bear, 1997; Scharf, 2000). However, findings on verbal and relational aggression are less consistent. Some researchers have found that both elementary and secondary school boys engage in more verbal aggression than do girls (e.g., Owens & MacMullin, 1995). Other researchers found no gender difference in verbal aggression among elementary and junior high school students (e.g. Bjorkqvist, Lagerspetz, & Kaukiainen, 1992; French, Jansen, & Pidada, 2002; Lagerspetz, et al., 1988), as well as high school students (e.g., Evans, 2006; Robinson, 1999; Scharf, 2000). Using the same measure with two groups of Singapore students, Ang (2007) found more verbal aggression among boys in one sample (grades 5 to 10), but no gender difference in the other sample (grades 8). In a recent meta-analysis study, Archer (2004) reviewed articles published between 1967-1996 on gender difference in aggression, and found on average boys engage in more physical aggression, with an effect size of 0.39 from 111 samples. Archer (2004) also found boys engaged in more verbal aggression than did girls, although the effect size was generally smaller than those for physical aggression (d = .30 for self-reports, 0.14 for observations). Similarly, in a recently published meta-analysis study, researchers reviewed 107 studies and found the boys engaged in more physical aggression (d = .73), and verbal aggression (d = .38) than did girls (Card, Stucky, Sawalani, & Little, 2008).

The inconsistent findings on gender differences may have been the result of different data collection methods used (Archer, 2004). Observation studies showed the largest effect size, in the female direction (d = .74), although there were only four observational studies in Archer's meta-analysis. Peer ratings showed a smaller effect size (d = .19), followed by teacher reports (d = .13). Peer nominations (d = .01) and self – reports (d = -.03) both indicated that there were no significant gender differences because the overall effect sizes were close to zero. Furthermore, different studies using peer nomination and self-report have also yielded very different results, regarding the effect size, as well as the direction of the difference (Archer, 2004). Similar to Archer's finding, some recently studies published after 1996 found more indirect aggression among girls, while other studies found no gender difference on relational aggression and relational victimization (most studies used self-report) (Paquette & Underwood, 1999; Prinstein et al., 2001; Rys & Bear, 1999), or boys engaged in more indirect aggression than did girls, especially young boys (e.g., Crick, Casas, & Mosher, 1997; Goldstein, Tisak, & Boxer, 2002; Henington, Hughes, Cavell, & Thompson, 1998; Tomada & Schneider, 1997). In a recently published meta-analysis study, Card and colleagues (2008) found gender difference on indirect aggression was significant from zero but trivial (d = -.06), with girls engaging in more indirect aggression. Parents and teachers reported girls being more indirectly aggressive, while self-reports on average showed boys being more indirectly aggressive. Some researchers suggest that children and adolescents tend to use aggression towards same gender peers (Paquette & Underwood, 1999; Pellegrini & Long, 2002). Considering that boys engage in more overt forms of aggression and girls might engage in more relational aggression, if the aggressive acts are

targeted mainly towards same-gender peers, it is possible that boys experience more overt victimization and girls experience more relational victimization.

Gender differences in peer victimization. Fewer studies have examined gender differences in victimization, and the findings are inconsistent. Examining overt and relational types of victimization, some studies have found that boys were more intensively/frequently victimized than were girls (Erath et al., 2007; Nadeau, Tessier, Lefebvre, & Robaey, 2004). When looking at different victimization separately, boys reported being overtly victimized more than did girls (Martin & Huebner, 2007; Putallaz et al., 2007; Prinstein, Boergers, & Vernberg, 2001; Rigby, 1998; Storch et al., 2003; 2005). Girls have been found to experience more relational victimization compared with boys based on self-report (Crick & Bigbee, 1998; Crick et al., 1999; Crick, Bigbee, & Howes, 1996; Crick, Casas**,** Nelson, 2002; Crick & Grotpeter, 1996; Dempsey, Fireman, & Wang, 2006; Putallaz et al., 2007) and observation (Ostrov, Woods, Jansen, Casas, & Crick, 2004). However, in other studies, the absence of gender differences in relational victimization has also been documented (Storch et al., 2003; 2005). Furthermore, at least one study has found that male students reported significantly more relational victimization than female students (Martin & Huebner, 2007). When looking at different types of victimization experienced by the individuals, some studies found that girls were more relationally victimized than physically victimized, and boys were more physically than relationally victimized based on self-report (Crick & Bigbee, 1998; Crick & Grotpeter, 1996; Lagerspetz & Björkqvist, 1994; Ostrov & Keating, 2004; Schäfer, Werner, & Crick, 2002), and peer and teacher report (Cullerton-Sen & Crick, 2005). However, other studies reported that boys and girls viewed themselves as equally

relationally and physically victimized (Cullerton-Sen & Crick, 2005; Paquette & Underwood, 1999; Prinstein et al., 2001; Rys & Bear, 1997). In summary, research shows that boys tend to experience more overt victimization than girls; however, gender difference in relational victimization is less clear. The difference in the results might be due to different data collection methods used (self-report vs. peer/ teacher report), different age groups studied (upper-elementary-aged students vs. middle school students), and different definitions of victimization used. Future studies are needed to continue to explore the gender difference in peer victimization.

Gender difference in adolescents' response to victimization. Boys and girls may respond differently to different types of peer victimization. Girls view relational aggression as more harmful than do boys (Crick, Bigbee & Howes, 1996), and relational aggression episodes are more distressful and upsetting for girls (Crick, 1995; Galen & Underwood, 1997). Girls who experience victimization reported more negative thoughts and feelings, and more negative self-worth compared with boy victims (Paquette & Underwood, 1999). At least two studies showed that relational victimization was uniquely associated with depressive and anxiety symptoms for adolescent girls but not for boys (McGee et al., 2001; Storch & Masia-Warner, 2004). Instead, boys have been found more likely to respond to victimization with anger and externalizing behaviors, such as delinquency (McGee et al., 2001). One study found the unique contribution of physical and relational victimization to adjustment is different for boys and girls. For boys, friend relational victimization contributed little to internalizing problems after controlling for physical victimization, whereas for girls, the pattern was reversed. Overt

victimization had little unique contribution, while relational victimization added significantly to the prediction of internalizing problems for girls (Crick & Nelson, 2002).

The gender difference might be due to the fact that girls value interpersonal relationships more than boys (Little & Garber, 2000; Smith, O'Keeffe, & Jenkins, 1988; Underwood, 2003). Relational victimization hurts girls because relational aggression targets what they care more about in social relationship, and as a result, is more likely to lead to negative outcomes for girls. It is also suggested that the experience of relational victimization might negatively influence girls' beliefs of self (e.g., they might view themselves as less competent) and others (e.g., they might see others as not trustworthy), which prevents them from having positive interaction with others in the future (Paquette & Underwood, 1999). In summary, there is growing evidence suggesting that the experience of relational victimization is more detrimental for girls than for boys, possibly due to girls' high interpersonal orientation.

Although boys are less interpersonally oriented compared with girls, interpersonal orientation still appears to play a role in the development of depressive symptoms among boys. For example, Little and Garber (2000) found that for boys with high levels of interpersonal orientation, experience of social stressor, such as peer victimization, predicted depressive symptoms, but this was not true for boys with low levels of interpersonal orientation. Similarly, Smith and colleagues (1988) found that the interaction of interpersonal orientation and negative life events was a significant predictor for depressive symptoms among males. In summary, some studies have suggested that boys and girls might respond to peer victimization differently, partially because girls

value interpersonal relationship more than do boys. However, more studies are needed in order to better understand these gender differences.

Research Questions and Hypotheses

The current study seeks to examine the cognitive diathesis-stress theory by examining the role of self-esteem (cognitive diathesis) in the relationship between overt and relational victimization (stress), depressive symptoms, and anxiety symptoms over time, and examine the group differences in this relationship. This study first examined the longitudinal relationship between relational victimization, overt victimization, depressive symptoms, and anxiety symptoms. Repeated cross-sectional studies have provided support for this association among children and adolescents (Cullerton-Sen & Crick, 2005; Prinstein et al., 2001; Storch et al., 2003); however, the cross-sectional nature of the data provide very limited information for the sequencing of the variables, and do not permit any test for causality. Few studies have explored the relationship among two types of peer victimization and two types of internalizing problems simultaneously. The current study rectified these limitations in the current literature. Next, the current study examined the potential moderating or mediating effect of self-esteem in the associations among overt and relational victimization, depressive symptoms, and anxiety symptoms. Some studies have supported the cognitive diathesis-stress model in the development of depressive symptoms, although few studies have utilized self-esteem as a cognitive diathesis in the context of different types of peer victimization. There has also been some debate in the literature regarding whether cognitive factors mediate or moderate the relationship between peer victimization and depressive symptoms, and the answer to this question is far from clear. Furthermore,

limited empirical support exists for the cognitive diathesis-stress model in the development of anxiety symptoms, although theoretically, self-esteem might play a role in the relationship between peer victimization and anxiety symptoms. The current study tried to fill these gaps in the literature.

This study also examined the role of gender and school transition in the model. Specifically, this study attempted to determine if the strength of the associations among victimization and internalizing symptoms differed for boys and girls and if the associations differed for students who experienced school transition (from elementary school to middle school, and from middle school to high school) and those who did not. Lastly, this study examined the potential reciprocal relationship among peer victimization, self-esteem, depressive symptoms, and anxiety symptoms. Some researchers have suggested that the relationship between peer victimization and depressive symptoms is reciprocal instead of unidirectional (e.g., Gibb & Alloy, 2006); however, few longitudinal studies have tested this reciprocal model. Longitudinal studies allow for statistical control of previous internalizing symptoms and victimization experience in order to investigate whether experience of peer victimization leads to increases in internalizing symptoms or whether internalizing symptoms contribute to peer victimization, or whether the relationship is reciprocal. Currently, there are no longitudinal studies using three data points to analyze the effect of the two types of peer victimization on depressive and anxiety symptoms over time. There are no longitudinal studies that investigate the mediating and moderating role of self-esteem in the relationship between two types of peer victimization and both depressive and anxiety symptoms. Additionally, there are no longitudinal studies that investigate the role of

gender and school transition on the associations among peer victimization, self-esteem, and internalizing symptoms over time.

Based on the review of existing research on overt victimization, relational victimization, self-esteem, depressive symptoms, and anxiety symptoms, the current study addressed the following research questions and hypotheses:

(1) Did the experience of overt and relational victimization predict later depressive and anxiety symptoms in adolescents?

Hypothesis I: It was hypothesized that the experience of higher levels of overt and relational victimization at Time 1 would predict greater depressive and anxiety symptoms at Time 2; and the experience of overt and relational victimization at Time 2 would predict greater depressive and anxiety symptoms at Time 3.

(2) Did self-esteem at Time 2 moderate the relationships between peer victimization (overt and relational) at Time 2 and internalizing symptoms (depression and anxiety) at Time 3? (Figure 1)

Hypothesis I: It was hypothesized that self-esteem would moderate the relationships between two types peer victimization and depressive symptoms among older adolescents (sixth graders and older).

Hypothesis II: It was hypothesized that self-esteem would moderate the relationships between two types peer victimization and anxiety symptoms among older adolescents (sixth graders and older).

(3) Did self-esteem at Time 2 mediate the relationships between peer victimization

(overt and relational) at Time 1 and internalizing symptoms (depression and anxiety) at Time 3? (Figure 2)

Hypothesis I: It was hypothesized that self-esteem would mediate the relationships between two types of peer victimization and depressive symptoms among younger adolescents (fifth graders).

Hypothesis II: It was hypothesized that self-esteem would mediate the relationships between two types of victimization and anxiety symptoms among younger adolescents (fifth graders).

(4) Did the relationships among victimization, self-esteem, depressive symptoms, and anxiety symptoms differ for boys and girls?

Hypothesis I: It was hypothesized that the relationships might be different for boys and girls. Specifically, the linkage between relational victimization and depressive symptoms as well as the linkage between relational victimization and anxiety symptoms would be stronger for girls than for boys.

Hypothesis II: It was hypothesized that there were main level gender differences on self-esteem, depressive symptoms, and anxiety symptoms, with girls reporting lower self-esteem, higher depressive symptoms, and higher anxiety symptoms than boys.

(5) Did the relationships among peer victimization, self-esteem, depressive symptoms, and anxiety symptoms differ for students who experienced school transition and who did not?

Hypothesis I: It was hypothesized that the relationships might be different for students who experienced school transition and those who did not. The

relationships between victimization and internalizing symptoms (depression and anxiety symptoms) might be stronger for students who experienced transition than those who did not.

Hypothesis II: It was hypothesized that self-esteem might decrease and depressive and anxiety symptoms might increase after school transition. It was hypothesized that peer victimization might increase after school transition.

(6) Was the relationship between victimization and depressive symptoms unidirectional or reciprocal?

Hypothesis I: It was hypothesized that the relationship between victimization and depressive symptoms would be reciprocal. Specifically, higher levels of previous overt victimization and relational victimization would predict higher levels of later depressive symptoms directly or through self-esteem; higher levels of previous depressive symptoms would predict higher levels of later overt victimization and relational victimization directly or through self-esteem (Figure 3).

(7) Was the relationship between victimization and anxiety symptoms unidirectional or reciprocal?

Hypothesis I: It was hypothesized that the relationship between victimization and anxiety symptoms would be reciprocal. Specifically, higher levels of previous overt victimization and relational victimization would predict higher levels of later anxiety symptoms directly or through self-esteem; higher levels of previous anxiety symptoms would predict higher levels of later overt victimization and relational victimization directly or through self-esteem (Figure 4).

Chapter 3: Methods

Participants

Data for the current investigation are part of a larger international longitudinal study examining students' self-report of peer relationships and psycho-social adjustment among adolescents from the United States, Japan, Korea, Australia, and Canada. Only the data collected in the United States are included in the current study. The participant sample included 1,171 fifth-, sixth-, seventh-, eighth-, and ninth-grade students at Time 1 (i.e., Fall 2005) and 1,112 fifth-, sixth-, seventh-, eighth-, and ninth-grade students at Time 2 (i.e., Spring 2006), and 995 sixth-, seventh-, eighth-, ninth-, and tenth- grade students at Time 3 (i.e., Fall 2006). Participants were recruited from four elementary schools, three middle schools, and two high schools in one city in the Midwest. The attrition rate was 5.0% from Time 1 to Time 2 and 10.4% from Time 2 to Time 3. Students' attrition from the study was mostly due to students moving to a different school and absence from class at the time of assessment. A series of *t* tests and chi-square tests were conducted to determine if attriting adolescents differed from non-attriting adolescents on any of the Time 1 variables in the study. None of these analyses were significant. Participants' age ranged from 10 to 16 at Time 1 (M = 12.20, SD = 1.29), 10 to 16 at Time 2 (M = 12.57, SD = 1.27), and 10 to 17 at Time 3 (M = 13.11, SD = 1.29) at Time 3. Two subjects were excluded from further analysis due to self-reported age of 9 at Time 1; which is younger than what is considered to be early adolescence (McDevitt & Ormrod, 2009). The resultant sample includes 623 female students (53.2%) and 549 male students (46.8%) at Time 1, 588 female students (53.0%) and 524 male students (47.0%) at Time 2, and 534 female students (52.8%) and 471 male students (47.2%) at

Time 3. The grade distribution of all the participants was 118 fifth-graders, 370 sixth-graders, 312 seventh-graders, 248 eighth-graders, and 125 ninth graders at Time 1, 113 fifth- graders, 347 sixth-graders, 303 seventh-graders, 235 eighth-graders, and 116 ninth graders at Time 2, and 99 sixth-graders, 318 seventh-graders, 288 eighth-graders, 183 ninth graders, and 109 tenth-graders at Time 3. The majority of the participants in the current study were European Americans, which was consistent with the ethnic distribution of the city where the participants were recruited (See Table 1 for more details about the ethnic distribution).

Instrumentation

Demographic variables. The demographic variables including self-reported and school-reported age, gender, race, grade, and academic grades from the school records were collected. School-reported demographics and office referral data were collected shortly after survey completion at each time point.

Self-description Questionnaire-I (SDQ-I; Marsh, 1988; Appendix A). Self-description Questionnaire-I is an Australian-developed 76-item self-report measure designed to evaluate self concept among children and adolescents. The original measure included seven subscales measuring self concept in four nonacademic areas (Physical Ability, Physical Appearance, Peer Relations, and Parent Relations) and three academic areas (Reading, Mathematics, and General-School). Later, the General-Self subscale derived from the Rosenberg (1965) *Self-esteem* scale was added into the measure. According to the SDQ-I manual, the General-Self subscale measures the "child's perception of himself or herself as an effective, capable individual, proud of and satisfied with the way he or she is" (Marsh, 1988, p. 23-24). This is consistent with Rosenberg's

definition of self-esteem as one's sense of personal worth (Rosenberg, 1965). In the current study, only the General-Self subscale was used. The students were asked to respond to eight items describing themselves, such as "I do lots of important things," on a four-point scale: (1) *no, not at all*, (2) *no, not much*, (3) *yes, a little*, and (4) *yes, strongly agree*. Research has shown that the General-Self subscale has high internal consistency, α ranged from .81 to .88 (Leach, Henson, Odom, & Cagle, 2006; Marsh, 1988), and high validity, as indicated by high correlation with *Perceived Competence Scale* (r ranged from .57 to. 74, Harter, 1982, 1983 as cited in Marsh, 1988). In the current study, the coefficient alpha for the General-Self subscale was .85 at Time 1, .87 at Time 2, and .89 at Time 3, indicating good internal consistency for the measure.

Marsh (1988) and other researchers (Ireson, Hallam, & Plewis, 2001; Watkins & Dong, 1994; Watkins, Qi, & Yong, 1997; Watkins & Gutierrez, 1990) have used both "self-esteem" and "general self concept" to describe the General-Self subscale in SDQ. For example, in SDQ-III (designed for high school students), Marsh (1988) referred to the General-Self subscale as "general esteem subscale." Furthermore, the General-Self subscale was originally derived from the Rosenberg (1965) *Self-esteem* scale (Marsh, 1988). As a result, the construct measured by the General-Self subscale is referred to as self-esteem in the current study.

Social Experiences Questionnaire (SEQ; Crick & Grotpeter, 1996; Appendix A). The Social Experiences Questionnaire is a 15-item self-report measure designed to measure the frequency of victimization and the frequency with which one is the recipient of prosocial behavior. The measure consists of three subscales: (1) overt victimization, (2) relational victimization, and (3) recipient of prosocial behavior. The items are rated

on a five-point Likert-type scale: (1) *never*, (2) *almost never*, (3) *sometimes*, (4) *almost all the time*, and (5) *all the time*. Overt victimization items in the SEQ include physical and verbal victimization, such as being hit, being yelled at or called mean names, being pushed or shoved, being kicked or pulled hair, and being threatened to be beat up. Relational victimization items include behaviors that damage the relationship, such as "leave you out on purpose", "try to get back at you by not letting you be in their group", "tell lies about you to make other kids not like you anymore", "say they won't like you unless you do what they want", and "keep others from liking you by saying mean things about you." The current study used the overt victimization and relational victimization subscales. Several empirical studies were conducted to test the reliability and validity of the measure (Crick & Grotper, 1996; Crick & Bigbee, 1998; Cullerton-Sen & Crick, 2005; Frerichs, 2009). For example, Crick and Grotpeter (1996) conducted a principal components factor analysis and found three distinct factors in the SEQ as designed (i.e., relational victimization, overt victimization, receipt of prosocial behavior). Relational victimization accounted for 34.9% of the variation in the measure, and overt victimization accounted for 15.6% of the variation in the measure. Similarly, three distinct factors were also found in another study: (1) relational victimization, accounting for 34.8% of the variation, (2) overt victimization, accounting for 8.1% of the variation, (3) receipt of prosocial behavior, accounting for 17.7% of the variation (Frerichs, 2009). Previous studies suggested that the SEQ had good reliability. The internal consistency reliability coefficient ranged from .80 to .89 for relational victimization subscale, and .74 to .90 for overt victimization subscale (Crick & Bigbee, 1998; Cullerton-Sen & Crick; Martin & Huebner, 2007; Frerichs, 2009). In the current study, the coefficient alpha for

the overt victimization subscale was .78 at Time 1, .83 at Time 2, and .80 at Time 3; the coefficient alpha for the relational victimization subscale was .84 at Time 1, .87 at Time 2, and .87 at Time 3. The results suggest that the overt victimization and relational victimization subscales have good internal consistency in the current study.

The Children's Depression Inventory-Short (CDI-S; Kovacs, 1992; Appendix A). The Children's Depression Inventory is the most commonly used self-report measure of depressive symptomatology for children 7 to 17 years of age. The CDI-S (Children's Depression Inventory-Short) is a 10-item measure comprised of a subset of the original CDI items (Kovacs, 1992), designed as a screening measure. Items on the CDI-S are summed to reach a total depressive symptom score. Participants are asked to rate the severity of each item on a 3-point scale from 0 to 2 during the two weeks prior to testing, with higher scores indicating more severe symptoms. Raw scores range from 0-20 and are converted to T scores. A T score greater than 65 is suggested to be clinically significant (Kovacs, 1992). The CDI-S demonstrated high reliability with alpha reliability coefficients of .83 (Houghton, Cowley, Houghton, & Kelleher, 2003), and .84 (Frerichs, 2009). At least one study reported a significant positive correlation between the CDI and CDI-S (r = .91; Houghton et al., 2003). In the current study, the internal consistency reliability for the CDI-S using coefficient alpha was .84 at Time 1, .87 at Time 2, and .85 at Time 3, suggesting high internal consistency of the measure.

The Multidimensional Anxiety Scale for Children-10 (MASC-10; March, 1997; Appendix A). The Multidimensional Anxiety Scale for Children is a self-report measure designed to assess symptoms of anxiety in children ages 8 to 19. The MASC has demonstrated high test-retest reliability with the internal consistency alpha of .83 (March,

1997). The MASC-10 is the short version of MASC, and it consists of 10 items assessing general symptoms of anxiety. The students were asked to respond to ten items on a four-point scale: 0= *never true about me*, 1= *rarely true about me*, 2= *sometimes true about me*, 3=*often true about me.* MASC-10 has demonstrated satisfactory internal consistency with the coefficient alpha of .67 for females and .68 for males. The test-retest reliability for MASC-10 was also high (alpha = .82) (March, 1997). In the current study, the internal consistency reliability for the MASC-10 using coefficient alpha was .76 at Time 1, .80 at Time 2, and .81 at Time 3, suggesting good internal consistency of the measure.

Procedures

Data for the larger longitudinal study were collected across Fall 2005, Spring 2006, and Fall 2006 from four elementary schools, three middle schools, and two high schools in Lincoln, Nebraska, which is a Midwestern urban community of approximately 225,000 people. A six-month interval between each data collection time was selected in order to maximize the chances of detecting significant changes in adolescents' peer victimization, self-esteem, depressive symptoms and anxiety symptoms. Researchers have suggested using a six-month interval because when the interval is too long, the potential effects of victimization and self-esteem on depressive symptoms might be obscured (Gibb & Alloy, 2006).

Approval for the larger longitudinal study was obtained from the University of Nebraska-Lincoln's Institutional Review Board (Appendix B). After the nine school principles volunteered their interest in participating in the study, a joint letter from the school principal and the principal investigator of the longitudinal study (Appendix C) and the consent form (Appendix D) were distributed to all parents with children from fifth

grade to ninth grade in the participating schools. Parents and/or guardians and the students were presented with the opportunity to participate in the larger longitudinal study. Parents were informed that the individual results of the study would be confidential, that their child would not be personally identified to school personnel, and that they could withdraw their consent at any time without penalty. About 53% of the consent forms were returned by the parents and/or guardians. Among the parents and/or guardians who returned the consent form, 81.1% of them gave consent for their children to participate in the study. Students were also given a youth assent form (Appendix E). Students were explained that they were not required to participate despite parental/guardian consent and they could withdraw from the study anytime without penalty. Almost all students (97%) gave assent to participate the study. Only the students whose parents gave consent and the students who gave assent were included in the study.

Prior to data collection, data collectors (i.e., graduate students) were trained to administer the measures. During training, a copy of the measures was provided to the data collectors along with additional details regarding areas in which participants may have difficulty.

Students completed the instruments in large groups at school (e.g., classroom, lunchroom, etc.) during the regular school day according to procedures arranged by each participating school. Data collectors were present at all data collection sessions to answer any questions students had about the study. Depending upon reading fluency, students took approximately 45 minutes to one hour to complete the battery of measures for the longitudinal study. The order of all instruments used was counterbalanced across

participants. In order to reduce missing data in the study, data collectors checked the measures with the participants when they finished the survey, and the participants were asked to complete the identified missing items.

Following data collection, data were entered into an SPSS database by trained data entry personnel. Every fourth survey was checked for accuracy after data entry. Incorrectly keyed information was corrected. Data sets were re-entered when there were many errors in the initial entry.

Analysis Plan

The current study used Structural Equation Modeling (SEM) to test for the hypothesized model. Mplus 5.2 software was used (Muthen & Muthen, 2007) to analyze the data. SEM was chosen as the preferred method of statistical analysis because it provided a convenient way to control for measurement error. SEM is a set of statistical techniques for testing and estimating causal relationships. Each structural equation model usually includes a measurement component, which indirectly measures unobserved or hypothetical constructs using observable measures, and a structural component, which specifies relationship among latent constructs. Latent variables in SEM are theoretical constructs about characteristics of measures, such as method effects (e.g. parent vs. child informants, or different measures of the same constructs). Using latent variables allows researchers to better control for measurement error, which was a confounding factor in previous studies using traditional regression methods (Kline, 2005). The use of SEM also helps to control for shared informant variance, which is likely to inflate the relationships among variables of interest in the study (Kline, 2005).

In order to compare which model fits the data best, SEM provides a number of fitness indices, such as chi-square, comparative fit index (CFI), and the root mean square error of approximation (RMSEA). Chi-square statistic should not be significant if the model fits well; however, chi-square is sensitive to the sample size. The larger the sample size, the more likely chi-square statistic is to be significant, and the more likely the model is rejected. Chi-square is "more useful for comparisons between models in assessing whether additional complexity gives significantly better fit" (Sweeing et al., 2006, p. 581). So chi-square is not a good index for data with large sample size, such as the current study. On the other hand, chi-square is still very important, because chi-square difference tests can be used to identify the best fitting model from a group of nested models. In the current study, a series of chi-square difference tests was used to compare nested models. When the sample size is large, and the chi-square is significant, CFI and RMSEA should be considered as better indices of model fit. CFI varies from 0 to 1, with higher values indicating better fit. CFI equal to or greater than 0.90 is considered acceptable, and equal or greater than 0.95 is considered a good fit (Bentler, 1990; Kline, 2005). RMSEA equal or less than 0.05 is considered a good fit (Browne & Cudeck, 1993). In the current study, CFI and RMSEA were used to identify the model with the best fit. In the current study, the maximum likelihood estimator was used in all the analysis except when the interaction between two latent factors was examined. As suggested by Muthen and Muthen (2007) and Marsh, Wen, and Hau (2004), a model with a random effect was estimated and a maximum likelihood estimator with robust standard errors using a numerical integration algorithm was used to examine the interaction between two latent factors.

Before testing the structural model, a measurement model was created first. Item parceling procedure was used to simplify the model and create reliable and representative indicators (Bandalos & Finney, 2001; Little, Cunningham, Golan & Widaman, 2002). Parceling is a measurement practice that is used most commonly with latent-variable analysis, such as SEM. A parcel is an aggregate-level indicator comprised of the sum (or average) of two or more items, responses, or behaviors (Little et al., 2002). Parcels have more psychometric merits than do items in terms of higher reliability, higher communality, and smaller likelihood of distributional violations. Fewer parameters are needed to define a construct when parcels are used, and as a result, parcels are preferred when sample sizes are relatively small considering the complexity of the model. Models based on parceled data are more parsimonious, and are less likely to have correlated residual errors or double loadings compared with models using item scores (McCallum 1999; Little et al., 2002). As a result, instead of using item-level data, parcels were used in the analysis. In order to build balanced parcels for each latent construct, exploratory factor analyses (EFA) was conducted for each measure. Using the factor loadings as a guide, the three items with the highest loadings were used to anchor the three parcels. The next three items with the highest loading were added to the parcels in an inverted order. The procedure was continued until all the items are placed in the parcels by placing lower loaded items with higher loaded items. This approach, which has been shown to have satisfactory statistical properties, is widely used in structural equation modeling studies (Bandalos & Finney, 2001; Kline, 2005; Little et al., 2002). In the current study, the measure model was built using the balanced parcels (Figure 5). In Mplus, as a default, the residuals of all the endogenous variables were allowed to

correlate with each other and all the exogenous variables were also allowed to correlate with each other. The current study's research hypotheses were statistically analyzed as follows:

1. It was hypothesized that the experiences of overt and relational victimization at Time 1 would predict depressive and anxiety symptoms at Time 2. Similarly, the experience of overt and relational victimization at Time 2 would predict depressive and anxiety symptoms at Time 3.

A structural model was specified in which (a) overt victimization and relational victimization at Time 1 predicted depressive symptoms and anxiety symptoms at Time 2, (b) overt victimization and relational victimization at Time 2 predicted depressive symptoms and anxiety symptoms at Time 3. Overall model fit was examined using chi-square, CFI, and RMSEA. If the model demonstrates a good fit, and specific path loadings are significant, the hypothesis is supported.

2. It was hypothesized that self-esteem at Time 2 would moderate the relationship between peer victimization at Time 2 and depressive symptoms at Time 3 among older adolescents (sixth graders and older). Self-esteem at Time 2 would moderate the relationship between peer victimization at Time 2 and anxiety symptoms at Time 3 among older adolescents (sixth graders and older).

In order to test the moderation model for depressive symptoms, a structural model was specified in which (a) Time 2 overt victimization, self-esteem, and relational victimization predicted Time 3 depressive symptoms, (b) Time 2 overt victimization * Time 2 self-esteem interaction term predicted depressive symptoms, (c) Time 2 relational victimization * Time 2 self-esteem interaction term predicted depressive symptoms, (d)

each of the exogenous variables were allowed to correlate with one another (Figure 2). Overall model fit was examined using chi-square, CFI, and RMSEA. If the model demonstrates a good fit, and overt victimization * self-esteem and relational victimization * self-esteem interactions are significant predictor for students' depressive symptoms, the moderation model is accepted. A similar procedure was used to test the moderation model for anxiety symptoms.

3. It was hypothesized that self-esteem at Time 2 would mediate the relationship between peer victimization at Time 1 and depressive symptoms at Time 3. Self-esteem at Time 2 would also mediate the relationship between peer victimization at Time 1 and anxiety symptoms at Time 3.

Two methods were used to test the mediation model, the traditional four-step testing procedures by Baron and Kenny's (1986) and the procedure using SEM proposed by Cole and Maxwell (2003). According to the hypothesis, experiences of overt victimization and relational victimization at Time 1 would contribute to the development of negative self-esteem at Time 2, which then would leave the adolescents vulnerable to developing depressive symptoms at Time 3. In order to test the mediation model using SEM with the procedures proposed by Cole and Maxwell (2003), a completely saturated model was specified in which (a) all exogenous variables (overt victimization and relational victimization at Time 1) were allowed to correlate with one another; (b) direct paths were specified from each exogenous variable to every endogenous variable (self-esteem at Time 2, depressive symptoms and anxiety symptoms at Time 3), and (c) each of the error terms associated with endogenous variables were allowed to correlated with one another. Then, both full mediation (each victimization variable was specified to have

effects on adolescent depressive symptoms only through self-esteem) and partial mediation (each victimization variable was specified to have direct effects on adolescent depressive symptoms in addition to indirect effects through self-esteem) models were examined. In testing the full mediation model, a structural model was specified in which (a) Time 1 overt and relational victimization predicted Time 2 self-esteem, (b) Time 2 self-esteem predicted Time 3 depressive symptoms. In testing the partial mediation model, two more paths were added: one path from overt victimization at Time 1 to depressive symptoms at Time 3, and the other path from relational victimization at Time 1 to depressive symptoms at Time 3. Then the fit of the hypothesized full mediation model or partial mediation model was evaluated by comparing them to the fully saturated model using chi-square difference test.

A mediation model was also tested using Baron and Kenny's (1986) testing procedures. According to Baron and Kenny, in order to establish a mediation model, first, the initial variables (relational victimization and overt victimization at Time 1) are correlated with the outcome variables (i.e., adolescent depressive and anxiety symptoms at Time 3). Second, the initial variables are correlated with the mediator (self-esteem at Time 2). Third, the mediator (self-esteem at Time 2) is shown to affect the outcomes (depressive and anxiety symptoms at Time 3) after controlling for the initial variables (relational victimization and overt victimization at Time 1). Fourth, to establish a complete mediation, the effect of the initial variables on outcome variables when the mediator is controlled should be nonsignificant. The effects in both steps three and four are estimated in the same regression equation. The same procedure was used to test the mediation model for anxiety symptoms.

4. It was hypothesized that the relationships among peer victimization, self-esteem, depressive symptoms, and anxiety symptoms might be different for boys and girls. In specific, the linkages between relational victimization and depressive symptoms as well as relational victimization and anxiety symptoms would be stronger for girls than for boys. It was also hypothesized that there were main level differences on self-esteem, depressive symptoms, and anxiety symptoms between boys and girls, with girls reporting lower self-esteem, higher depressive symptoms, and higher anxiety symptoms.

Based on the results from the previous tests, the best fitting model was selected for the further analysis. A multi-group analysis was conducted to test for gender differences in the mean levels of the latent variables (self-esteem, depressive symptoms, and anxiety symptoms) and the associations among the latent constructs. First, the measurement invariance was tested before the model was examined for structural invariance. Measurement invariance was tested by comparing one measurement model with all measurement path loadings constrained to be equal across girls and boys against a model with all measurement parameters freed to be estimated. Cheung and Rensvold (2002) suggested that chi-square is sensitive to the sample size, and is not a good estimation of model fitness in the case of large sample size. They suggested that when ΔCFI between two models was smaller or equal to 0.01, the null hypothesis of invariance should not be rejected, and the two measurement models can be considered invariant. If the two measurement models were not invariant, parameters were freed one by one, and a series of CFI comparisons were done until ΔCFI between two models was smaller or equal to 0.01, meaning partial measurement invariant was achieved. After the

measurement model was shown to be invariant (or partially invariant) across gender, the researcher moved on to compare the structural part of the model. Similar to the measurement invariant comparison, structural invariance in the models was tested by comparing a model with all structural path parameters constrained to be equal across girls and boys against a model with all structural parameters freed to be estimated. Because the constrained model was nested within the unconstrained model, a chi-square difference test was used to determine whether allowing the paths to vary across gender provided a better fit to the data than constraining the paths to be equal. If the two models fit equally well, the more parsimonious model (i.e., the constrained model) was chosen, suggesting the model fits boys and girls equally well. If the constrained model fit the data significantly worst, the unconstrained model was chosen, suggesting there are significant differences among boys and girls.

5. It was hypothesized that the relationship among peer victimization, self-esteem, depressive symptoms, and anxiety symptoms might be different for students who experienced school transition and those who did not. The relationship between victimization and depressive symptoms, victimization and anxiety symptoms might be stronger for students who experienced transition than those who did not.

A similar process of multi-group comparisons as specified previously was used to compare two groups of students, those who experienced school transition from elementary schools to middle schools or middle schools to high schools (fifth and eighth graders at Time 1), and those who did not experience school transition (sixth, seventh, and ninth graders at Time 1), to examine the group differences in the mean levels of the latent variables (self-esteem, depressive symptoms, and anxiety symptoms) and the

associations among the latent constructs. In addition, in order to examine the changes of latent variables over time, five multiple indicator linear growth models were specified for each latent variable (Figure 6). As suggested by Muthen and Muthen (2007), the multiple indicator linear growth model requires measurement invariance of the indicators across time. In the current study, this was realized by holding the intercept and factor loadings of each factor indicators equal over three time points. Two transition groups were also analyzed separately for each latent construct to examine whether or not the change in the latent construct was different between groups.

6. It was hypothesized that the relationship between victimization and depressive symptoms would be reciprocal. Previous overt victimization and relational victimization would predict later depressive symptoms directly or through self-esteem; previous depressive symptoms would predict later overt victimization and relational victimization directly or through self-esteem.

In order to test this model, a structural model was specified in which (a) each Time 1 variable predicted its Time 2 counterpart, (b) each Time 2 variable predicted its Time 3 counterpart, (c) Time 1 overt and relational victimization predicted Time 2 self-esteem and depressive symptoms, (d) Time 2 self-esteem predicted Time 3 depressive symptoms, (e) Time 1 depressive symptoms predicted Time 2 overt and relational victimization, (f) Time 2 overt and relational victimization predicted Time 3 self-esteem and depressive symptoms, (g) Time 2 depressive symptoms predicted Time 3 overt and relational victimization; (h) all variables at same time point were allowed to correlate with each other, for example, Time 1 overt victimization, relational victimization, depressive symptoms, and self-esteem correlated with each other. The hypothesized

reciprocal effect model was modified based on the model modification index. Non-significant paths were deleted if doing so did not cause the model to fit significantly worse than the previous model based on chi-square difference test. Additional meaningful paths were added if doing so led to significant improvement in model fit based on the chi-square difference test.

7. It was hypothesized that the relationship between victimization and anxiety symptoms would be reciprocal. Previous overt victimization and relational victimization would predict later anxiety symptoms directly or through self-esteem; previous anxiety symptoms would predict later overt victimization and relational victimization directly or through self-esteem.

A similar process as specified in hypothesis six was used to test the model for anxiety symptoms.

Chapter 4: Results

The analyses were conducted in two steps. First valid measurement models for peer victimization, depressive symptoms, and anxiety symptoms were established using Confirmatory Factor Analysis (CFA). Adequate factor loadings of item parcels (i.e., standardized factor loadings > .40), acceptable model fit indices (CFI > 0.95, TLI > 0.95, RMSEA < 0.06, and SRMR< 0.06), measurement invariance across gender and transition groups, and mean level differences across groups were obtained at this step. The second step was to conduct the structural models to examine the seven hypotheses proposed earlier. In this step, estimated correlations for latent constructs were obtained to facilitate hypothesis testing. Presented below are the results from the measurement models and structural models, respectively.

Measurement Models and Mean Level Differences

Measurement models for peer victimization. As mentioned earlier, in order to build balanced parcels for peer victimization, exploratory factor analysis was conducted for the *Social Experiences Questionnaire* (SEQ; Crick & Grotpeter, 1996). Principal Axis Factoring with Oblimin with Kaiser rotation was used with all ten items in the overt victimization and relational victimization subscales at Time 1. The factor analysis result was similar to Crick and Grotpeter's (1996) original finding. Two distinct factors, named "overt victimization" and "relational victimization" were found, and the model explained 49.93% of the total variance (Table 2). Different from Crick and Grotpeter's original finding, one item "How often does another kid yell at you and call you mean names" was found to have double loading on both overt victimization and relational victimization factors, as a result, this item was not included in further analyses. Using the factor

loadings as a guide, the three items with the highest loadings were used to anchor the three parcels. The next three items with the highest loading were added to the parcels in an inverted order. The procedure was continued until all the items were placed in the parcels by placing lower loaded items with higher loaded parcels (Little et al., 2002). Three parcels were created for relational victimization and two parcels were created for overt victimization.

In order to examine if the measurement model using those parcels fit the data well, CFA was conducted. The measurement model for two types of victimization at Time 1 fit the data well, $\chi^2 = 6.23$, df = 4, $p = .18$, CFI = 0.999, TLI = 0.998, RMSEA = 0.02, SRMR = 0.01. The measurement model for two types of victimization at Time 2 also fit the data well, $\chi^2 = 16.48$, df = 4, $p < .002$, CFI = 0.996, TLI = 0.99, RMSEA = 0.05, SRMR = 0.01. The measurement model for two types of victimization at Time 3 also fit the data well, $\chi^2 = 5.00$, df = 4, $p = .29$, CFI = 1, TLI = 0.999, RMSEA = 0.02, SRMR = 0.01. The measurement model for two types of victimization over three time points fit the data well, $\chi^2 = 196.95$, df = 75, $p < .001$, CFI = 0.99, TLI = 0.98, RMSEA = 0.04, SRMR = 0.02. Due to the longitudinal nature of the data, each item parcel was measured three times through data collection, and it is reasonable to expect each parcel at Time 1 correlated to its Time 2 and Time 3 counterparts. This shared-method variance was modeled by correlating the errors of same item parcel with its counterparts over time, for example, parcel one for relational victimization at Time 1 was allowed to correlate with parcel one for relational victimization at Time 2 and Time 3. After adding the correlated error, the model fit significantly better, $\chi^2 = 121.41$, df = 60, $p < .001$, CFI = 0.99, TLI = 0.99, RMSEA = 0.03, SRMR = 0.02. $\chi^2_{diff} = 75.56$, $\Delta df = 15$, $p < .001$. As a result,

correlated errors for each item parcel over time were included in all the measurement models to improve the model fit.

Measurement models for depressive symptoms. Principal Axis Factoring with Oblimin with Kaiser rotation was used with all ten items in *The Children's Depression Inventory-Short (CDI-S; Kovacs, 1992)* at Time 1. One factor, named "depressive symptoms" was found and the model explained 35.9% of the total variance (Table 3). Three item parcels were created based on the factor loading using the method mentioned earlier. CFA was used to examine the model fit using the item parcels. The measurement model for depressive symptoms at Time 1 was a saturated model, so it fit the data perfectly, $\chi^2 = 0$, df = 0, $p = 0$, CFI = 1, TLI = 1, RMSEA = 0, SRMR = 0. The measurement model for depressive symptoms at Time 2 and the measurement model for depressive symptoms at Time 3 were saturated models too, and fit the data perfectly. The measurement model for depressive symptoms over three time points fits the data well, $\chi^2 = 21.66$, df = 15, $p = .12$, CFI = 0.999, TLI = 0.997, RMSEA = 0.02, SRMR = 0.01.

Measurement models for anxiety symptoms. Principal Axis Factoring with Oblimin with Kaiser rotation was used with all ten items in *The Multidimensional Anxiety Scale for Children-10* (*MASC-10*; March, 1997) at Time 1. One factor, named "anxiety symptoms" was found and the model explained 37.06% of the total variance (Table 4). Three item parcels were created based on the factor loading using the same method mentioned earlier. CFA was used to examine the model fitness for those item parcels. The measurement model for anxiety symptoms at Time 1, the measurement model for anxiety symptoms at Time 2, and the measurement model for anxiety symptoms at time were saturated models too, and fit the data perfectly, $\chi^2 = 0$, df = 0, $p = 0$, CFI = 1, TLI =

1, RMSEA = 0, SRMR = 0. The measurement model for anxiety symptoms over three time points fit the data well, χ^2 = 28.16, df = 15, p = .02, CFI = 0.997, TLI = 0.99, RMSEA = 0.03, SRMR = 0.02.

Measurement models for general self. Principal Axis Factoring with Oblimin with Kaiser rotation was used with all eight items in the General Self subscale in *Self-description Questionnaire-I* (*SDQ-I*; Marsh, 1988) at Time 1. One factor, named "general self-esteem" (referred to as "self-esteem" in the dissertation) was found and the model explained 42.78% of the total variance (Table 5). Three item parcels were created based on the factor loading using the same method mentioned earlier. CFA was used to examine the model fitness for those item parcels. The measurement model for self-esteem at Time 1, the measurement model for self-esteem at Time 2, and the measurement model for self-esteem at time were saturated models, and fit the data perfectly, χ^2 = 0, df = 0, p = 0, CFI = 1, TLI = 1, RMSEA = 0, SRMR = 0. The measurement model for self-esteem over three time points fit the data well, χ^2 = 18.32, df = 15, p = .25, CFI = 0.999, TLI = 0.999, RMSEA = 0.01, SRMR = 0.01.

Measurement models for all latent constructs. Using all the item parcels, the measurement models for all five latent constructs over three time points also fit the data well, χ^2 = 1391.95, df = 672, p < .001, CFI = 0.97, TLI = 0.97, RMSEA = 0.03, SRMR = 0.03. All standardized loadings were larger than 0.60 and significantly different from zero (p < .001) (Table 6). The mean, standard deviation, and distribution of all the item parcels are listed in Table 7. The estimated correlations among all the latent variables are listed in Table 8. The latent construct of overt victimization, relational victimization, depressive symptoms, anxiety symptoms, and general self-esteem over three time points

highly correlated with each other, except for the relationship between overt victimization at Time 2 and anxiety symptoms at Time 1, as well as the relationship between overt victimization at Time 3 and anxiety symptoms at Time 1 ($.05 < ps < .10$). The measurement models for the four latent constructs (overt victimization, relational victimization, depressive symptoms, and self-esteem) over three time points also fit the data well, $\chi^2 = 852.76$, df = 396, $p < .001$, CFI = 0.98, TLI = 0.97, RMSEA = 0.03, SRMR = 0.03. The measurement models for the four latent construct (overt victimization, relational victimization, anxiety symptoms, and self-esteem) over three time points also fit the data well, $\chi^2 = 801.89$, df = 396, $p < .001$, CFI = 0.98, TLI = 0.97, RMSEA = 0.03, SRMR = 0.03.

Gender differences in the measurement model. A multi-group analysis was conducted to test for gender differences in the measurement model. Measurement invariance was tested by comparing one measurement model with all measurement path loadings constrained to be equal across girls and boys against a model with all measurement parameters freed to be estimated. The measurement model with all measurement path loadings constrained to be equal across boys and girls fit the data acceptably, $\chi^2 = 2529.84$, df = 1413, $p < .001$, CFI = 0.96, TLI = 0.97, RMSEA = 0.05, SRMR = 0.07. The model with all measurement parameters freed to be estimated for boys and girls also fit the data well, $\chi^2 = 2344.02$, df = 1371, $p < .001$, CFI = 0.96, TLI = 0.95, RMSEA = 0.04, SRMR = 0.04. Cheung and Rensvold (2002) suggested that chi-square is sensitive to the sample size, and is not a good estimation of model fitness in the case of large sample size. They suggested that when ΔCFI between two models is smaller or equal to 0.01, the null hypothesis of invariance should not be rejected, and the

two measurement models can be considered invariant. In the current study, ΔCFI was less than .01, so the measurement model can be considered invariant across gender.

When all measurement path loadings were constrained to be equal across girls and boys, significant mean level differences were found in several latent constructs. Boys reported lower depressive and anxiety symptoms and higher overt victimization than girls. The mean difference on depressive symptoms was 0.25 (p <.001) at Time 1, 0.12 (p = .05) at Time 2, and 0.22 (p = .001) at Time 3. The mean difference on anxiety symptoms was 0.67 (p < .001) at Time 1, 0.62 (p < .001) at Time 2, and 0.54 (p < .001) at Time 3. The mean difference on overt victimization was 0.40 (p < .001) at Time 1, 0.44 (p < .001) at Time 2, and 0.39 (p < .001) at Time 3. Boys reported slightly lower levels of relational victimization at Time 1 (mean difference = 0.11, p = .07), but similar levels of relational victimization at Time 2 (mean difference = -0.05, p = .39), and Time 3 (mean difference = 0.01, p = .78). Boys reported similar levels of self-esteem (mean difference < 0.04, p > .50) compared with girls at all three time points.

Transition group differences in the measurement model. A multi-group analysis was conducted to examine whether the measurement model was invariant between the transition group and non-transition group. In the current study, the transition group included fifth graders and eighth graders who transited to a new school at Time 3. Measurement invariance was tested by comparing one measurement model with all measurement path loadings constrained to be equal across transition groups (fifth graders and eighth graders) and non-transition groups (sixth, seventh, and eighth graders) against a model with all measurement parameters freed to be estimated. The measurement model with all measurement path loadings constrained to be equal fit the data well, χ^2 =

2413.30, df = 1413, $p < .001$, CFI = 0.963, TLI = 0.96, RMSEA = 0.04, SRMR = 0.06. The model with all measurement parameters freed to be estimated also fit the data well, $\chi^2 = 2296.87$, df = 1371, $p < .001$, CFI = 0.966, TLI = 0.96, RMSEA = 0.03, SRMR = 0.04. Cheung and Rensvold (2002) suggested that when ΔCFI between two models is smaller or equal to 0.01, the null hypothesis of invariance should not be rejected, and the two measurement models can be considered invariant. In the current study, ΔCFI was less than .01, so the measurement model can be considered invariant across transition and non-transition groups.

The transition group reported higher relational victimization (mean difference = 0.15, $p = .03$) at Time 1, more depressive symptoms at Time 1 (mean difference = 0.25, $p < .001$), Time 2 (mean difference = 0.24, $p < .001$), and Time 3 (mean difference = 0.29, $p < .001$), more anxiety symptoms at Time 2 (mean difference = 0.26, $p < .001$) and Time 3 (mean difference = 0.17, $p = .03$), and lower self-esteem at Time 1 (mean difference = 0.20, $p < .01$), Time 2 (mean difference = 0.18, $p < .01$), and Time 3 (mean difference = 0.32, $p < .001$), than the non-transition group. However, two groups were not significantly different on overt victimization over three time points ($p > .05$).

Research Question 1: Did the Experience of Overt and Relational Victimization Predict Later Depressive and Anxiety Symptoms in Adolescents?

It was hypothesized that the experiences of overt and relational victimization would predict later depressive and anxiety symptoms. Two structural equation models were examined to test this hypothesis. In the first model, overt victimization and relational victimization at Time 1 was hypothesized to positively predict depressive symptoms and anxiety symptoms at Time 2. In the second model, overt victimization

and relational victimization at Time 2 was hypothesized to positively predict depressive symptoms and anxiety symptoms at Time 3.

Peer victimization at Time 1 and internalizing symptoms at Time 2. The first model fit the data well, χ^2 = 104.25, df = 38, p < .001, CFI = 0.99, TLI = 0.98, RMSEA = 0.04, SRMR = 0.03. Relational victimization at Time 1 significantly predicted depressive symptoms at Time 2, standardized loading = 0.33, Est. (estimated loading)/S.E = 6.39, p < .001. Overt victimization at Time 1 negatively predicted depressive symptoms at Time 2, although the relationship was not significant, standardized loading = -0.01, Est. /S.E = -0.22, p = .82. Similarly, relational victimization at Time 1 significantly predicted anxiety symptoms at Time 2, standardized loading = 0.26, Est./S.E = 4.79, p < .001. Overt victimization at Time 1 negatively predicted depressive symptoms at Time 2, although the relationship was not significant, standardized loading = -0.08, Est./S.E =-1.42 , p = .16 (Table 9).

The negative effects of overt victimization at Time 1 on depressive symptoms and anxiety symptoms at Time 2 were unexpected. In order to understand the phenomenon better, overt victimization and relational victimization at Time 1 were entered into the model separately. When only relational victimization at Time 1 was in the model, the model again fit the data well, χ^2 = 65.20, df = 24, p < .001, CFI = 0.99, TLI = 0.99, RMSEA = 0.04, SRMR = 0.03. Relational victimization at Time 1 significantly predicted depressive symptoms at Time 2, standardized loading = 0.32, Est./S.E = 10.15, p < .001. Relational victimization at Time 1 significantly predicted anxiety symptoms at Time 2, standardized loading = 0.21, Est./S.E = 6.02, p < .001. When only overt victimization was in the model, the model again fit the data well, χ^2 = 78.60, df = 17, p <

.001, CFI = 0.98, TLI = 0.97, RMSEA = 0.06, SRMR = 0.03. Overt victimization at Time 1 significantly predicted depressive symptoms at Time 2, standardized loading = 0.21, Est./S.E = 6.15, $p < .001$. Overt victimization at Time 1 significantly predicted anxiety symptoms at Time 2, standardized loading = 0.10, Est./S.E = 2.65, $p = .01$.

These results suggested that while overt victimization at Time 1 had positive correlations with depressive symptoms and anxiety symptoms at Time 2, once relational victimization at Time 1 was taken into account, higher overt victimization at Time 1 predicted lower depressive symptoms and anxiety symptoms, although the relationships were not significant. By including both relational victimization at Time 2 and overt victimization at Time 1 into the model, both effects of relational victimization at Time 1 on depressive symptoms and anxiety symptoms at Time 2 increased. The standardized loading for relational victimization increased from 0.21 to 0.26 for anxiety symptoms. The standardized loading for relational victimization increased from 0.32 to 0.33 for depressive symptoms. Conversely, the standardized loading for overt victimization decreased from 0.20 to -0.15 for depressive symptoms. The standardized loading for overt victimization decreased from 0.25 to -0.20 for anxiety symptoms. This finding suggested that overt victimization might serve as a suppressor in the model.

Peer Victimization at Time 2 and Internalizing Symptoms at Time 3. The second model also fit the data well, $\chi^2 = 100.96$, df = 38, $p < .001$, CFI = 0.99, TLI = 0.98, RMSEA = 0.04, SRMR = 0.03. Relational victimization at Time 2 significantly predicted depressive symptoms at Time 3, standardized loading = 0.33, Est./S.E = 6.39, $p < .001$. However, overt victimization at Time 2 negative predicted depressive symptoms at Time 3, standardized loading = -0.15, Est./S.E = 2.02, $p < .05$. Similarly, relational

victimization at Time 2 significantly predicted anxiety symptoms at Time 3, standardized loading = 0.40, Est./S.E = 5.26, $p < .001$. However, overt victimization at Time 2 negatively predicted anxiety symptoms at Time 3, standardized loading = -0.20, Est./S.E = -4.59, $p = .01$ (Table 10).

The significant negative effects of overt victimization on depressive symptoms and anxiety symptoms were again unexpected. In order to understand the phenomenon better, overt victimization and relational victimization were entered into the model separately. When only relational victimization was in the model, the model again fit the data well, $\chi^2 = 69.99$, df = 25, $p < .001$, CFI = 0.99, TLI = 0.98, RMSEA = 0.04, SRMR = 0.03. Relational victimization at Time 2 significantly predicted depressive symptoms at Time 3, standardized loading = 0.31, Est./S.E = 9.40, $p < .001$. Relational victimization at Time 2 significantly predicted anxiety symptoms at Time 3, standardized loading = 0.25, Est./S.E = 6.76, $p < .001$. When only overt victimization was in the model, the model again fit the data well, $\chi^2 = 42.93$, df = 17, $p < .001$, CFI = 0.99, TLI = 0.99, RMSEA = 0.04, SRMR = 0.03. Overt victimization at Time 2 significantly predicted depressive symptoms at Time 3, standardized loading = 0.20, Est./S.E = 5.35, $p < .001$. Overt victimization at Time 2 significantly predicted anxiety symptoms at Time 3, standardized loading = 0.13, Est./S.E = 3.47, $p = .001$.

By including both relational victimization at Time 2 and overt victimization at Time 2 into the model, the effect of relational victimization on depressive symptoms and anxiety symptoms both increased. The standardized loading of relational victimization increased from 0.31 to 0.40 for anxiety symptoms. The standardized loading of relational victimization increased from 0.31 to 0.33 for depressive symptoms. Conversely, the

standardized loading for overt victimization decreased from 0.20 to -0.15 for depressive symptoms. The standardized loading for overt victimization decreased from 0.25 to -0.20 for anxiety symptoms. In summary, while overt victimization at Time 2 had positive correlations with depressive symptoms and anxiety symptoms at Time 3, once relational victimization at Time 2 was taken into account, higher overt victimization predicted lower depressive symptoms and anxiety symptoms. These results suggest that overt victimization might serve as a suppressor in the model.

Research Question 2: Did self-esteem at Time 2 Moderate the Relationships between Peer Victimization (Overt and Relational) at Time 2 and Internalizing Symptoms (Depression and Anxiety) at Time 3?

It was hypothesized that self-esteem at Time 2 would moderate the relationship between peer victimization at Time 2 and depressive symptoms as well as the relationship between peer victimization at Time 2 and anxiety symptoms at Time 3, especially among older adolescents (sixth graders and older). The hypothesized model was first examined among all students, and then among older adolescents (sixth to ninth graders), and last among younger adolescents (fifth graders).

Moderation model among all students. First, the model was examined among all students without the interaction terms between victimization and self-esteem using maximum likelihood estimator. The model fit the data well, $\chi^2 = 194.52$, df = 67, $p <$ .001, CFI = 0.98, TLI = 0.98, RMSEA = 0.04, SRMR = 0.03, log-likelihood= -10376.27, number of free parameters = 52, Akaike (AIC) = 20856.53, Bayesian (BIC) = 21118.37, sample-Size Adjusted BIC = 20953.20. When the interaction terms between two types of victimization and self-esteem were added into the model, log-likelihood= -10363.33,

number of free parameters = 56, Akaike (AIC) = 20838.66, Bayesian (BIC) = 21129.67, sample-Size Adjusted BIC = 20942.76. Because the model without interaction terms was nested in the model with interaction terms, chi-square difference test was used to examine whether the model fit improved significantly by adding the interaction terms. The chi-square difference test showed that the model fit improved significantly by adding the interaction terms, $\Delta\chi^2$= -10363.33–(-10376.27) = 12.94, Δdf= 4, $p < .05$, as a result, the model with the interaction terms was preferred. However, result showed that the two interaction terms were not significant predictors for depressive or anxiety symptoms (*p*s > .05). The main effects of relational victimization, overt victimization, and self-esteem were all significant for depressive and anxiety symptoms. Specifically, relational victimization at Time 2 significantly predict depressive symptoms at Time 3, estimated loading = 0.16, Est./S.E = 3.01, $p = .003$, and anxiety symptoms at Time 3, estimated loading = 0.26, Est./S.E = 4.07, $p < .001$. For every unit increase in relational victimization scores, depressive symptom scores increased by 0.16, and anxiety symptom scores increased by 0.26 when self-esteem scores and overt victimization scores were constant. Overt victimization at Time 2 significantly predict depressive symptoms at Time 3, estimated loading = -0.12, Est./S.E = -2.08, $p = .04$, and anxiety symptoms at Time 3, estimated loading = -0.19, Est./S.E = -2.68, $p = .01$. For every unit increase in overt victimization scores, depressive symptom scores decreased by 0.12, and anxiety symptom scores decreased by 0.19 when self-esteem scores and relational victimization scores were constant. Self-esteem significantly and negatively predicted depressive symptoms at Time 3, estimated loading = -0.22, Est./S.E = -6.65, $p < .001$, and anxiety symptoms at Time 3, estimated loading = -0.13, Est./S.E = -2.44, $p = .02$. For every unit

increase in self-esteem scores, depressive symptom scores decreased by 0.22, and anxiety symptom scores decreased by 0.13 when overt victimization and relational victimization scores were constant (Table 11).

In order to explore the negative relation of overt victimization to depressive and anxiety symptoms, relational victimization and overt victimization were tested separately in two models. In the model with only relational victimization, self-esteem, and their interaction term, log-likelihood= -8471.12, number of free parameters = 44, AIC = 17030.25, BIC = 17251.8, sample-Size Adjusted BIC = 17112.04. Self-esteem at Time 2 moderated the relationship between relational victimization at Time 2 and depressive symptoms at Time 3, standardized loading = -0.12, Est./S.E = -2.54, $p = .01$, but it did not moderate the relationship between relational victimization and anxiety symptoms, estimated loading = -0.09, Est./S.E = -1.19, $p = .23$. Self-esteem at Time 2 significantly predicted depressive symptoms at Time 3, standardized loading = -0.21, Est./S.E = -6.46, $p < .001$, and anxiety symptoms at Time 3, estimated loading = -0.12, Est./S.E = -2.21, $p = .03$. Relational victimization at Time 2 positively predicted depressive symptoms and anxiety symptoms at Time 3, estimated loading = 0.07, Est./S.E = 4.37, $p < .001$, standardized loading = 0.14, Est./S.E = 4.26, $p < .001$, respectively (Table 12). The results suggest that the relationship between relational victimization at Time 2 and depressive symptoms at Time 3 are influenced by different levels of self-esteem. For every unit increase in self-esteem, the relationship between relational victimization and depressive symptoms decreased by 0.12. The relationship between relational victimization at Time 2 and anxiety symptoms at Time 3 did not vary across different levels of self-esteem. For every unit increase in relational victimization scores, anxiety

symptom scores increased by 0.14 when self-esteem scores were constant. For every unit increase in self-esteem scores, anxiety symptom scores decreased by 0.12 when relational victimization scores were constant.

In the model with only overt victimization, self-esteem, and their interaction term, log-likelihood= -7023.26, number of free parameters = 41, AIC = 14128.53, BIC = 14334.97, sample-Size Adjusted BIC = 14204.75. Self-esteem at Time 2 also moderated the relationship between overt victimization at Time 2 and depressive symptoms at Time 3, estimated loading = -0.10, Est./S.E = -2.90, p = .004, but it did not moderate the relationship between overt victimization and anxiety symptoms, estimated loading = -0.08, Est./S.E = -1.17, p = .24. Self-esteem at Time 2 significantly predicted depressive symptoms at Time 3, estimated loading = -0.23, Est./S.E = -8.32, $p < .001$, and anxiety symptoms at Time 3, estimated loading = -0.17, Est./S.E = -3.32, p = .001. Overt victimization at Time 2 positively predict depressive symptoms and anxiety symptoms at Time 3, although the result was not significant, estimated loading = 0.03, Est./S.E = 1.53, p = .13, estimated loading = 0.05, Est./S.E = 1.46, p = .15, respectively (Table 13). The results suggest that the relationship between overt victimization at Time 2 and depressive symptoms at Time 3 are influenced by different levels of self-esteem at Time 2. For every unit increase in self-esteem, the relationship between overt victimization and depressive symptoms decreased by 0.10. The relationship between overt victimization at Time 2 and anxiety symptoms at Time 3 did not vary significantly across different levels of self-esteem at Time 2. For every unit increase in self-esteem scores, anxiety symptom scores decreased by 0.17 when overt victimization scores were constant.

By including relational victimization at Time 2, overt victimization at Time 2, and the interaction terms between victimization and self-esteem at Time 2 into the model, the effect of relational victimization on depressive symptoms and anxiety symptoms both increased. The estimated loading of relational victimization increased from 0.14 to 0.26 for anxiety symptoms. The loading of relational victimization increased from 0.08 to 0.16 for depressive symptoms. The loading for overt victimization decreased from 0.03 to -0.12 for depressive symptoms. The loading for overt victimization decreased from 0.05 to -0.19 for anxiety symptoms. In summary, while overt victimization at Time 2 has small but positive correlations with depressive symptoms and anxiety symptoms at Time 3, once relational victimization at Time 2 is taken into account, higher overt victimization predicted lower depressive symptoms and anxiety symptoms. These results again suggest that overt victimization might serve as a suppressor in the model.

Moderation model among older students. The moderation model was also tested among older adolescents (sixth graders and older). First, the model was examined without interaction term using maximum likelihood estimator. The model fit the data well, χ^2 = 188.76, df = 67, $p < .001$, CFI = 0.98, TLI = 0.98, RMSEA = 0.04, SRMR = 0.03, log-likelihood= -9202.54, number of free parameters = 52, AIC = 18509.08, BIC = 18765.52, sample-Size Adjusted BIC = 18600.36. When the interaction terms between two types of victimization and self-esteem were added into the model, log-likelihood = -9192.19, Number of free parameters = 56, AIC = 18496.39, BIC = 18772.55, sample-size adjusted BIC = 18594.69. The chi-square difference test showed that the model fit improved significantly by adding the interaction terms, $\Delta\chi^2$= -9192.19–(-9202.54) = 10.34, Δdf= 4, $p < .05$, as a result, the model with the interaction terms was preferred.

However, results showed that two interaction terms were not significant predictors for depressive symptoms or anxiety symptoms (*p*s > .05). Relational victimization at Time 2 significantly predicted depressive symptoms at Time 3, estimated loading = 0.13, Est./S.E = 2.50, *p* = .01, and anxiety symptoms at Time 3, estimated loading = 0.26, Est./S.E = 3.92, *p* < .001. For every unit increase in relational victimization scores, depressive symptom scores increased by 0.13, anxiety symptom scores increased by 0.26 when self-esteem scores and overt victimization scores were constant. Overt victimization at Time 2 did not significantly predict depressive symptoms at Time 3, estimated loading = -0.10, Est./S.E = -1.77, *p* = .08, but it predicted anxiety symptoms at Time 3, estimated loading = -0.19, Est./S.E = -2.57, *p* = .01. For every unit increase in overt victimization scores, anxiety symptom scores decreased by 0.19, when self-esteem scores and relational victimization scores were constant. Self-esteem significantly and negatively predicted depressive symptoms at Time 3, estimated loading = -0.21, Est./S.E = -6.20, *p* < .001, and anxiety symptoms at Time 3, estimated loading = -0.13, Est./S.E = -2.32, *p* = .02 (Table 14). For every unit increase in self-esteem scores, depressive symptom scores decreased by 0.21, and anxiety symptom scores decreased by 0.13, when overt victimization and relational victimization scores were constant.

In order to explore the negative impact of overt victimization on depressive and anxiety symptoms, relational victimization and overt victimization were tested separately in two models. In the model with only relational victimization, self-esteem, and their interaction, self-esteem at Time 2 moderated the relationship between relational victimization at Time 2 and depressive symptoms at Time 3, estimated loading = -0.11, Est./S.E = -2.24, *p* = .03, but not the relationship between overt victimization at Time 2

and anxiety symptoms at Time 3, estimated loading = -0.09, Est./S.E = -1.20, p = .23. Self-esteem at Time 2 significantly predicted depressive symptoms at Time 3, estimated loading = -0.20, Est./S.E = -6.05, p < .001, and anxiety symptoms at Time 3, estimated loading = -0.12, Est./S.E = -2.17, p = .03. Relational victimization at Time 2 positively predicted depressive symptoms and anxiety symptoms at Time 3, estimated loading = 0.05, Est./S.E = 3.38, p = .001, estimated loading = 0.13, Est./S.E = 4.05, p < .001, respectively (Table 15). The results suggest that the relationship between relational victimization and depressive symptoms depend on different levels of self-esteem. For every unit increase in self-esteem scores, the relationship between relational victimization scores and depressive symptom scores decreased by 0.11. The relationship between relational victimization scores and anxiety symptom scores did not differ at different levels of self-esteem. For every unit increase in relational victimization scores, anxiety symptom scores increased by 0.13 when self-esteem scores were constant. For every unit increase in self-esteem scores, anxiety symptom scores decreased by 0.12 when relational victimization scores were constant.

In the model with only overt victimization, self-esteem, and their interaction term, log-likelihood = -7491.76, Number of free parameters = 44, AIC = 15071.52, BIC = 15288.50, sample-size adjusted BIC = 15148.75. Self-esteem at Time 2 did not moderate the relationship between overt victimization at Time 2 and depressive symptoms at Time 3 or the relationship between overt victimization at Time 2 and anxiety symptoms at Time 3 (ps > .05). Only self-esteem was a significant predictor for depressive symptoms, estimated loading = -0.22, Est./S.E = -6.18, p < .001. For every unit increase in self-esteem scores, depressive symptom scores decreased by 0.2 when overt victimization

scores were constant. Only self-esteem was a significant predictor for anxiety symptoms, estimated loading = -0.18, Est./S.E = -3.19, p <.001 (Table 16). For every unit increase in self-esteem scores, anxiety symptom scores decreased by 0.18 when overt victimization scores were constant.

By including relational victimization at Time 2, overt victimization at Time 2, and the interaction terms between victimization and self-esteem at Time 2 into the model, the effect of relational victimization on depressive symptoms and anxiety symptoms both increased. The loading of relational victimization increased from 0.13 to 0.26 for anxiety symptoms. The loading of relational victimization increased from 0.05 to 0.16 for depressive symptoms. The loading for overt victimization decreased from 0.02 to -0.12 for depressive symptoms. The loading for overt victimization decreased from 0.05 to -0.19 for anxiety symptoms. In summary, while overt victimization at Time 2 had small but positive correlations with depressive symptoms and anxiety symptoms at Time 3, once relational victimization at Time 2 was taken into account, higher overt victimization predicted lower depressive symptoms and anxiety symptoms. These results again suggest that overt victimization might serve as a suppressor in the model.

Moderation model among younger students. When the moderation model was tested among younger adolescents (fifth graders), the two interaction terms were not significant predictors for depressive symptoms or anxiety symptoms (ps > .05). Only self-esteem was a significant predictor for depressive symptoms, estimated loading = -0.39, Est./S.E = -3.17, p = .002. For every unit increase in self-esteem scores, depressive symptom scores decreased by 0.39 when overt victimization and relational victimization scores were constant. When the moderation model was tested among younger

adolescents separately for overt victimization and relational victimization, in both models, the interaction term was not a significant predictor for internalizing symptoms (*p*s > .05).

Research Question 3: Did self-esteem at Time 2 Mediate the Relationships between Peer Victimization (Overt and Relational) at Time 1 and Internalizing Symptoms (Depression and Anxiety) at Time 3?

Self-esteem at Time 2 was hypothesized to mediate the relationship between peer victimization at Time 1 and depressive symptoms at Time 3 as well as the relationship between peer victimization at Time 1 and anxiety symptoms at Time 3, especially among younger students (fifth graders). The mediation model was examined using SEM model as well as the traditional Baron and Kenny's (1986) four step testing procedures. In SEM model, full mediation model and partial mediation model were compared using chi-square difference test to examine whether the model fit improved significantly by adding the correlation between peer victimization at Time 1 and internalizing symptoms at Time 3. The mediation model was first examined among all students, and then among younger adolescents students (fifth graders), and last among older adolescents (sixth to ninth graders).

Mediation model among all students. When both overt victimization and relational victimization were entered into the model, the full mediation model fit the data well, $\chi^2 = 185.25$, df = 70, $p < .001$, CFI = 0.98, TLI = 0.98, RMSEA = 0.04, SRMR = 0.06. The partial mediation model also fit the data well, $\chi^2 = 124.22$, df = 66, $p < .001$, CFI = 0.99, TLI = 0.99, RMSEA = 0.03, SRMR = 0.02. Because the full mediation model was nested in the partial mediation model, chi-square difference test was used to compare the two models. The partial mediation model was shown to fit the data

significantly better than the full mediation model, $\Delta\chi^2 = 61.03$, $\Delta df = 4$, $p < .001$. As a result, partial mediation model was preferred. In the partial mediation model, relational victimization at Time 1 significantly predicted depressive symptoms at Time 3, standardized loading = 0.29, Est./S.E = 5.45, $p < .001$, anxiety symptoms at Time 3, standardized loading = 0.29, Est./S.E = 4.74, $p < .001$, and self-esteem, standardized loading = -0.20, Est./S.E = -3.67, $p < .001$. Overt victimization negatively predicted depressive symptoms and anxiety symptoms, although the effect was not significant, standardized loading = -0.05, Est./S.E = -0.90, $p > .05$, standardized loading = -0.11, Est./S.E = -1.80, $p > .05$, respectively. Overt victimization did not predict self-esteem, standardized loading = -0.07, Est./S.E = -1.25, $p > .05$. Self-esteem at Time 2 also significantly predicted depressive symptoms and anxiety symptoms at Time 3, standardized loading = -0.33, Est./S.E = -9.36, $p < .001$, standardized loading = -0.15, Est./S.E = -3.64, $p < .001$, respectively, suggesting higher self-esteem at Time 2 predicted lower depressive symptoms and anxiety symptoms at Time 3 (Table 17). As a result, self-esteem at Time 2 mediated the relationship between relational victimization at Time 1 and depressive symptoms at Time 3 among all students, indirect effect = 0.03, Est./S.E = 3.39, $p = .001$. Self-esteem at Time 2 also mediated the relationship between relational victimization at Time 1 and anxiety symptoms at Time 3, indirect effect = 0.02, Est./S.E = 2.62, $p < .01$. Self-esteem at Time 2 did not mediate the relationship between overt victimization at Time 1 and depressive symptoms at Time 3, indirect effect = 0.02, Est./S.E = 1.23, $p > .05$, or the relationship between overt victimization at Time 1 and anxiety symptoms at Time 3, indirect effect = 0.01, Est./S.E = 1.17, $p > .05$.

The negative effect of overt victimization on depressive symptoms and anxiety symptoms disappeared when only overt victimization (not relational victimization) was used in the model. The model still fit the data well, $\chi^2 = 78.80$, df = 37, $p < .001$, CFI = 0.99, TLI = 0.99, RMSEA = 0.03, SRMR = 0.02. After controlling for self-esteem, overt victimization positively predicted depressive symptoms, standardized loading = 0.14, Est./S.E = 3.74, $p < .001$, as well as anxiety symptoms, although the effect was not significant, standardized loading = 0.08, Est./S.E = -1.92, $p > .05$. Self-esteem at Time 2 also significantly predicted both depressive symptoms (standardized loading = -0.37, Est./S.E = -10.54, $p < .001$) and anxiety symptoms at Time 3 (standardized loading = -0.19, Est./S.E = -4.60, $p < .001$) (Table 18). Self-esteem at Time 2 mediated the relationship between overt victimization at Time 1 and depressive symptoms at Time 3, indirect effect = 0.07, Est./S.E = 5.03, $p < .001$. Self-esteem at Time 2 also mediated the relationship between overt victimization at Time 1 and anxiety symptoms at Time 3, indirect effect = 0.04, Est./S.E = 3.58, $p < .001$.

The positive relationship between relational victimization and depressive symptoms and anxiety symptoms became smaller when only relational victimization (not overt victimization) was included in the model. The model still fit the data well, $\chi^2 = 98.29$, df = 47, $p < .001$, CFI = 0.99, TLI = 0.99, RMSEA = 0.03, SRMR = 0.03. Relational victimization positively predicted depressive symptoms, standardized loading = 0.26, Est./S.E = 5.42, $p < .001$, as well as anxiety symptoms, standardized loading = 0.22, Est./S.E = 5.42, $p < .001$. Self-esteem at Time 2 also significantly predicted both depressive symptoms (standardized loading = -0.33, Est./S.E = -9.32, $p < .001$) and anxiety symptoms at Time 3 (standardized loading = -0.15, Est./S.E = -3.56, $p < .001$)

(Table 19). Similarly to the previous model, self-esteem at Time 2 mediated the relationship between relational victimization at Time 1 and depressive symptoms at Time 3, indirect effect = 0.03, Est./S.E = 5.45, p <.001. Self-esteem at Time 2 mediated the relationship between relational victimization at Time 1 and anxiety symptoms at Time 3, indirect effect = 0.02, Est./S.E = 3.15, p < .01. These results suggest that overt victimization served as a suppressor variable because by adding overt victimization into the model, the effect of relational victimization at Time 1 on depressive symptom at Time 3 and anxiety symptoms at Time 3 both increased, and the relationship between overt victimization and depressive symptoms as well as anxiety symptoms changed from positive to negative.

To confirm the mediation result from SEM, mediation model was also tested using Baron and Kenny's (1986) four step testing procedures. In step one, the initial variables (relational victimization and overt victimization at Time 1) was entered in the model to predict the outcome variables without the mediating variable. The model still fit the data well, χ^2 = 46.29, df = 37, p > .05, CFI = 1.00, TLI = 1.00, RMSEA = 0.02, SRMR = 0.02. Relational victimization positively predicted depressive symptoms, standardized loading = 0.37, Est./S.E = 6.70, p < .001, as well as anxiety symptoms, standardized loading = 0.33, Est./S.E = 5.34, p < .001. Overt victimization did not significantly predict depressive symptoms (standardized loading = -0.03, Est./S.E = -0.54, p > .05) or anxiety symptoms (standardized loading = -0.10, Est./S.E = -1.66, p > .05). In step two, the initial variables were used to predict the mediator (self-esteem at Time 2). The model still fit the data well, χ^2 = 40.65, df = 17, p > .05, CFI = 0.99, TLI = 0.99, RMSEA = 0.03, SRMR = 0.02. Relational victimization at Time 1 positively

predicted self-esteem at Time 2, standardized loading = -0.20, Est./S.E = -3.63, $p < .001$. Overt victimization at Time 1 did not significantly predict self-esteem at Time 2, standardized loading = -0.07, Est./S.E = -1.28, $p > .05$. In step three, the mediator (self-esteem at Time 2) must be shown to affect the outcomes (depressive and anxiety symptoms at Time 3) when the initial variables (relational victimization and overt victimization at Time 1) were entered into the model simultaneously. As reported in the last paragraph, self-esteem at Time 2 significantly predicted depressive symptoms at Time 3 and anxiety symptoms at Time 3, when two types of victimization were also entered into the model. In conclusion, self-esteem at Time 2 mediated the relationship between relational victimization at Time 1 and depressive symptoms at Time 3. It also mediated the relationship between relational victimization at Time 1 and anxiety symptoms at Time 3.

Mediation model among older students. The same mediation models were also examined among 1060 sixth to ninth graders. When both overt victimization and relational victimization were entered into the full mediation model, the model fit the data well, $\chi^2 = 144.84$, df = 70, $p < .001$, CFI = 0.99, TLI = 0.98, RMSEA = 0.03, SRMR = 0.05. The partial mediation model also fit the data well, $\chi^2 = 104.44$, df = 66, $p < .05$, CFI = 0.99, TLI = 0.99, RMSEA = 0.02, SRMR = 0.02, and was significantly better than the full mediation model, $\Delta\chi^2 = 44.40$, Δdf = 4, $p < .001$. As a result, the partial medication model was again preferred. Relational victimization at Time 1 significantly predicted depressive symptoms at Time 3, standardized loading = 0.26, Est./S.E = 4.50, $p < .001$, anxiety symptoms at Time 3, standardized loading = 0.24, Est./S.E = 3.94, $p < .001$, and self-esteem at Time 2, standardized loading = -0.20, Est./S.E = -3.61, $p < .001$.

Overt victimization did not significantly predicted depressive symptoms, standardized loading = -0.05, Est./S.E = -0.90, $p > .05$, anxiety symptoms, standardized loading = -0.09, Est./S.E = -1.39, $p > .05$, or self-esteem, standardized loading = -0.06, Est./S.E = -1.12, $p > .05$. Self-esteem at Time 2 also significantly predicted depressive symptoms at Time 3, standardized loading = -0.33, Est./S.E = -8.74, $p < .001$, and anxiety symptoms at Time 3, standardized loading = -0.16, Est./S.E = -3.80, $p < .001$, suggesting higher self-esteem at Time 2 predicted lower depressive symptoms and anxiety symptoms at Time 3 (Table 20). As a result, self-esteem at Time 2 mediated the relationship between relational victimization at Time 1 and depressive symptoms at Time 3 among older students, indirect effect = 0.03, Est./S.E = 3.30, $p = .001$, and the relationship between relational victimization at Time 1 and anxiety symptoms at Time 3 among older students, indirect effect = 0.02, Est./S.E = 2.61, $p < .01$. Self-esteem at Time 2 did not mediate the relationship between overt victimization at Time 1 and depressive symptoms at Time 3 among older students, indirect effect = 0.01, Est./S.E = 1.10, $p > .05$, or the relationship between overt victimization at Time 1 and anxiety symptoms at Time 3 among older students, indirect effect = 0.01, Est./S.E = 1.06, $p > .05$.

When relational victimization and overt victimization were examined separately among older students, the overt victimization model fit the data well, $\chi^2 = 100.14$, df = 38, $p < .001$, CFI = 0.99, TLI = 0.98, RMSEA = 0.04, SRMR = 0.03. Overt victimization positively related to depressive symptoms (standardized loading = 0.11, Est./S.E = 2.71, $p < .01$) and anxiety symptoms (standardized loading = 0.04, Est./S.E = 0.84, $p > .05$) after controlling for self-esteem. Self-esteem was found to mediate the relationship between overt victimization and depressive symptoms (indirect effect = 0.03, Est./S.E =

4.15, $p < .001$), as well as the relationship between overt victimization and anxiety symptoms (indirect effect = 0.03, Est./S.E = 3.08, $p < .01$). The relational victimization only model again showed that self-esteem mediated the relationship between relational victimization and internalizing symptoms.

Mediation model among younger student. The same mediation models were examined among 116 fifth graders. When both overt victimization and relational victimization were entered into the full mediation model, the model did not fit the data well, $\chi^2 = 110.31$, df = 70, $p < .01$, CFI = 0.94, TLI = 0.98, RMSEA = 0.07, SRMR = 0.11. The partial medication model fit the data well, $\chi^2 = 89.69$, df = 66, $p < .05$, CFI = 0.96, TLI = 0.95, RMSEA = 0.06, SRMR = 0.05, and was significantly better than the full mediation model, $\Delta\chi^2 = 20.62$, Δdf = 4, $p < .001$. As a result, the partial medication model was again preferred. Relational victimization at Time 1 significantly predicted depressive symptoms at Time 3, standardized loading = 0.42, Est./S.E = 2.42, $p < .05$, and anxiety symptoms at Time 3, standardized loading = 0.45, Est./S.E = 2.24, $p < .05$. However, relational victimization did not predict self-esteem at Time 2, standardized loading = -0.18, Est./S.E = -0.88, $p > .05$, suggesting self-esteem did not mediate the relationship between relational victimization and internalizing symptoms. Overt victimization did not significantly predicted depressive symptoms, standardized loading = 0.07, Est./S.E = 0.38, $p > .05$, anxiety symptoms, standardized loading = -0.06, Est./S.E = -0.27, $p > .05$, or self-esteem, standardized loading = -0.14, Est./S.E = -0.70, $p > .05$. Self-esteem at Time 2 significantly predicted depressive symptoms at Time 3, standardized loading = -0.35, Est./S.E = -3.35, $p = .001$, suggesting higher self-esteem at Time 2 predicted lower depressive symptoms at Time 3. Self-esteem at Time 2 did not

significantly predicted anxiety symptoms at Time 3, standardized loading = -0.04, Est./S.E = -0.33, $p > .05$ (Table 21). In summary, among fifth graders, the mediation hypothesis was not supported. Self-esteem at Time 2 did not mediate the relationship between relational victimization at Time 1 and depressive symptoms at Time 3, indirect effect = 0.03, Est./S.E = 0.88, $p > .05$, or the relationship between relational victimization at Time 1 and anxiety symptoms at Time 3, indirect effect = 0.01, Est./S.E = 0.33, $p > .05$. Self-esteem at Time 2 did not mediate the relationship between overt victimization at Time 1 and depressive symptoms at Time 3, indirect effect = 0.04, Est./S.E = 0.37, $p > .05$, or the relationship between overt victimization at Time 1 and anxiety symptoms at Time 3, indirect effect = 0.01, Est./S.E = 0.28, $p > .05$.

When relational victimization and overt victimization were examined separately among younger students, the relational victimization model fit the data well, $\chi^2 = 68.91$, df = 48, $p < .05$, CFI = 0.96, TLI = 0.95, RMSEA = 0.06, SRMR = 0.05. Relational victimization was negatively related to self-esteem (standardized loading = -0.29, Est./S.E = - 2.55, $p < .05$). Relational victimization was positively related to depressive symptoms (standardized loading = 0.46, Est./S.E = 4.54, $p < .001$) and anxiety symptoms (standardized loading = 0.42, Est./S.E = 3.52, $p < .001$) after controlling for self-esteem. Self-esteem was a significantly negative predictor for depressive symptoms (standardized loading = -0.35, Est./S.E = -3.29, $p = .001$), but not for anxiety symptoms (standardized loading = -0.03, Est./S.E = -0.25, $p > .10$). As a result, self-esteem was found to mediate the relationship between relational victimization and depressive symptoms (indirect effect = 0.10, Est./S.E = 2.17, $p < .05$), but not for anxiety symptoms. The overt victimization model fit the data well, $\chi^2 = 50.07$, df = 39, $p > .05$, CFI = 0.98, TLI = 0.97,

RMSEA = 0.05, SRMR = 0.05. Overt victimization was negatively related to self-esteem (standardized loading = -0.24, Est./S.E = - 2.37, $p < .05$). Overt victimization was positively related to depressive symptoms (standardized loading = 0.33, Est./S.E = 3.65, $p < .001$) and anxiety symptoms (standardized loading = 0.27, Est./S.E =2.53, $p = .01$) after controlling for self-esteem. Self-esteem was a significantly negative predictor for depressive symptoms (standardized loading = -0.41, Est./S.E = -4.11, $p < .001$), but not for anxiety symptoms (standardized loading = -0.10, Est./S.E = -0.76, $p > .10$). As a result, self-esteem mediated the relationship between overt victimization and depressive symptoms (indirect effect = 0.10, Est./S.E = 2.03, $p < .05$), but not for anxiety symptoms.

Research Question 4: Did the Relationships among Victimization, Self-esteem, Depressive Symptoms, and Anxiety Symptoms Differ for Boys and Girls?

It was hypothesized that the relationships among peer victimization, self-esteem, depressive symptoms, and anxiety symptoms might be different for boys and girls. Specifically, the linkages between relational victimization and depressive symptoms, relational victimization and anxiety symptoms was hypothesized be stronger for girls than for boys. It was also hypothesized that girls would report lower self-esteem, higher depressive symptoms, and higher anxiety symptoms compared with boys.

Measurement model for relational victimization across gender. Based on the results from the previous tests, the mediation model was selected for the further analysis on gender differences. In order to avoid the confounding result of the suppressor effect, separate models were tested for relational victimization and overt victimization. To validate the previous gender difference test with all the latent constructs, a multi-group analysis was conducted to test for gender difference. First, the measurement invariance

has to be tested before the model is examined for structural invariance. Measurement invariance was tested by comparing one measurement model with all measurement path loadings constrained to be equal across girls and boys against a model with all measurement parameters freed to be estimated. The measurement model with all measurement path loadings constrained to be equal across boys and girls fit the data well, $\chi^2 = 278.93$, df = 116, $p < .001$, CFI = 0.97, TLI = 0.97, RMSEA = 0.05, SRMR = 0.07. The model with all measurement parameters freed to be estimated for boys and girls also fit the data well, $\chi^2 = 222.80$, df = 104, $p < .001$, CFI = 0.98, TLI = 0.97, RMSEA = 0.04, SRMR = 0.04. Cheung and Rensvold (2002) suggested that chi-square is sensitive to the sample size, and is not a good estimation of model fitness in the case of large sample size. They suggested that when ΔCFI between two models was smaller or equal to 0.01, the null hypothesis of invariance should not be rejected, and the two measurement models can be considered invariant. In the current study, this criterion is adopted to examine the measurement invariance. Because the constrained model fit the data pretty well, $\chi^2 = 278.93$, df = 116, $p < .001$, CFI = 0.97, TLI = 0.97, and RMSEA = 0.05, and ΔCFI between two models was equal to 0.01, it is reasonable to consider the model with all measurement path loadings constrained to be equal across girls and boys to be acceptable for future structural comparisons.

Structural model for relational victimization across gender. Similar model comparison procedures were used again. The constrained model fit the data well, $\chi^2 = 264.30$, df = 118, $p < .001$, CFI = 0.97, TLI = 0.97, RMSEA = 0.05, SRMR = 0.06. The freed model also fit the data well, $\chi^2 = 250.52$, df = 113, $p < .001$, CFI = 0.97, TLI = 0.97, RMSEA = 0.05, SRMR = 0.05. The chi-square difference test showed that two models

were significantly different, $\Delta\chi2$= 13.78, Δdf= 5, $p < .05$, and the constrained model fitted the data significantly worse. As a result, the relationships among peer victimization at Time 1, self-esteem at Time 2, depressive symptoms at Time 3, and anxiety symptoms at Time 3 were different for boys and girls, when the measurement models were constrained to be equal across boys and girls. When all the structural paths were compared, the difference between boys and girls were small. For both boys and girls, relational victimization was a significantly positive predictor for depressive symptoms and anxiety symptoms. The experience of relational victimization significantly predicted more depressive symptoms and more anxiety symptoms for both boys and girls (Table 22). All the direct effects were significant (all four $p < .001$). The indirect effects from relational victimization to depressive symptoms through self-esteem were significant for both boys and girls (both $p \leq .001$). The indirect effect from relational victimization to anxiety symptoms through self-esteem was more significant for boys ($p = .02$) than for girls ($p = .051$).

Measurement model for overt victimization across gender. The measurement model with all measurement path loadings constrained to be equal across boys and girls fit the data well, $\chi^2 = 272.49$, df = 94, $p < .001$, CFI = 0.96, TLI = 0.96, RMSEA = 0.06, SRMR = 0.07. The model with all measurement parameters freed to be estimated for boys and girls also fit the data well, $\chi^2 = 209.14$, df = 83, $p < .001$, CFI = 0.97, TLI = 0.96, RMSEA = 0.05, SRMR = 0.04. Using the criterion suggested by Cheung and Rensvold (2002), because ΔCFI between two models was equal to 0.01, the null hypothesis of invariance was not rejected, and the two measurement models were

considered invariant. The model with all measurement path loadings constrained to be equal across girls and boys was selected to be used in the structural comparisons.

Structural model for overt victimization across gender. Similar model comparison procedures were used again. The constrained model fit the data well, χ^2 = 258.61, df = 96, p <.001, CFI = 0.96, TLI = 0.96, RMSEA = 0.05, SRMR = .06. The freed model also fit the data well, χ^2 = 242.23, df = 91, p < .001, CFI = 0.97, TLI = 0.96, RMSEA = 0.05, SRMR = 0.05. The chi-square difference test showed that two models were significantly different, $\Delta\chi2$= 16.38, Δdf= 5, p < .01, the constrained model fitted the data significantly worse. As a result, the relationships among Overt victimization at Time 1, self-esteem at Time 2, depressive symptoms a Time 3, and anxiety symptoms at Time 3 were different for boys and girls, when the measurement models were constrained to be equal across boys and girls. When all the structural paths were compared, some differences on path loading between boys and girls were found. For boys, the experience of overt victimization was not a significant predictor for anxiety symptoms after controlling for self-esteem (p = .10), but for girls, the experience of overt victimization was still a significant predictor for anxiety symptoms after controlling for self-esteem (p = .01) (Table 23). All the direct effects and indirect effects were significant for both boys and girls (all p < .05), except for the direct effect from overt victimization to anxiety symptoms for boys (p = .10). The indirect effect from overt victimization to depressive symptoms through self-esteem was larger for girls (β = .04, p <.001) than for boys (β = .01, .01 < p <.05). The indirect effects from overt victimization to anxiety symptoms through self-esteem were similar for both boys and girls (both .01 < p < .05). Other path loadings were similar across gender. Specifically, overt victimization was a significantly

positive predictor for depressive symptoms for both boys and girls. Self-esteem was a significantly negative predictor for depressive symptoms and anxiety symptoms for both boys and girls.

Research Question 5: Did the Relationships among Victimization, Self-esteem, Depressive Symptoms, and Anxiety Symptoms Differ for Students Who Experienced School Transition and Who Did Not?

Measurement model for relational victimization across transition groups. Among all the participants, 809 students did not experience school transition, and 367 students experienced transition between Time 2 and Time 3 during data collection (from elementary school to middle school or from middle school to high school). The measurement model with all measurement path loadings constrained to be equal across two transition groups fit the data well, $\chi^2 = 228.44$, df = 116, $p < .001$, CFI = 0.98, TLI = 0.98, RMSEA = 0.04, SRMR = 0.06. The model with all measurement parameters freed to be estimated for two transition groups also fit the data well, $\chi^2 = 190.02$, df = 104, $p < .001$, CFI = 0.98, TLI = 0.98, RMSEA = 0.04, SRMR = 0.03. Using the criterion suggested by Cheung and Rensvold (2002), because ΔCFI between two models was smaller than 0.01, the null hypothesis of invariance was not rejected, and the two measurement models was considered invariant across two groups of students (those who experienced the transition and those who did not). Furthermore, because the constrained model fit the data pretty well, $\chi^2 = 228.44$, df = 116, $p < .001$, CFI = 0.98, TLI = 0.98, RMSEA = 0.04, SRMR = 0.06, it is reasonable to say that the model with all measurement path loadings constrained to be equal across two groups was good enough for structural comparisons.

Structural model for relational victimization across transition groups.

Similar model comparison procedures were used to compare the difference between the structural models. In order to control the effect of grade on the relationship between relational victimization and self-esteem, depressive symptoms and anxiety symptoms, grade was entered as a predictor for all the dependent variables. The constrained model fit the data well, $\chi^2 = 267.73$, df = 134, $p < .001$, CFI = 0.975, TLI = 0.97, RMSEA = 0.04, SRMR = 0.05. The freed model also fit the data well, $\chi^2 = 248.25$, df = 129, $p < .001$, CFI = 0.978, TLI = 0.97, RMSEA = 0.04, SRMR = 0.04. The chi-square difference test showed that two models were significantly different, $\Delta\chi2= 19.48$, $\Delta df= 5$, $p < .05$, the constrained model fit the data significantly worse. As a result, the relationships among relational victimization at Time 1, self-esteem at Time 2, depressive symptoms at Time 3, and anxiety symptoms at Time 3 were different for the two groups of students (those who experienced school transition and those who did not), when the measurement models were constrained to be equal across two groups. When all the structural paths were compared, the difference between two groups was small. For both groups, relational victimization was a significantly positive predictor for depressive symptoms and anxiety symptoms. The experience of relational victimization significantly predicted higher levels of depressive symptoms and anxiety symptoms for both school transition and non-transition groups. Self-esteem negatively predicted depressive symptoms for both groups. The indirect effects from relational victimization to depressive symptoms through self-esteem were significant for both groups (both $p \leq .001$). However, self-esteem was a significantly negative predictor for anxiety symptoms only for the non-transition group (standardized loading = -.13, $p = .01$), but not for the transition group (standardized

loading = -.10, p = .19). Self-esteem mediated the relationship between relational victimization and anxiety symptoms only for the non-transition group, but not for the transition group. In another word, the indirect effect from relational victimization to anxiety symptoms through self-esteem was significant for non-transition students, but not for transition students (Table 24).

Measurement model for overt victimization across transition groups. Measurement invariance for overt victimization was tested by comparing one measurement model with all measurement path loadings constrained to be equal across two groups of students (those who experienced transition and those who did not experience transition) against a model with all measurement parameters freed to be estimated. The measurement model with all measurement path loadings constrained to be equal across two transition groups fit the data well, χ^2 = 188.55, df = 95, p < .001, CFI = 0.98, TLI = 0.98, RMSEA = 0.04, SRMR = 0.05. The model with all measurement parameters freed to be estimated for two transition groups also fit the data well, χ^2 = 152.25, df = 83, p < .001, CFI = 0.985, TLI = 0.98, RMSEA = 0.04, SRMR = 0.03. Using the criterion suggested by Cheung and Rensvold (2002), because ΔCFI between two models was smaller than 0.01, the null hypothesis of invariance was not rejected, and the two measurement models was considered invariant across two groups of students (those who experienced the transition and those who did not). Furthermore, because the constrained model fit the data pretty well, it is reasonable to say that the model with all measurement path loadings constrained to be equal across two groups was good enough for structural comparisons.

Structural model for overt victimization across transition groups. Similar model comparison procedures were used to compare the difference between the structural models when controlling for students' grade. The constrained model fit the data well, χ^2 = 222.90, df = 109, $p < .001$, CFI = 0.976, TLI = 0.97, RMSEA = 0.04, SRMR = 0.05. The freed model also fit the data well, χ^2 = 203.44 df = 104, $p < .001$, CFI = 0.979, TLI = 0.97, RMSEA = 0.04, SRMR = 0.04. Because the constrained model was nested in the unconstrained model, so the chi-square difference test was used to compare two models. The chi-square difference test showed that two models were significantly different, $\Delta\chi2$= 19.46, Δdf= 5, $p < .05$, the constrained model fitted the data significantly worse. As a result, the relationships among overt victimization at Time 1, self-esteem at Time 2, depressive symptoms at Time 3, and anxiety symptoms at Time 3 were different for the two groups of students (those who experienced the transition and those who did not), when the measurement models were constrained to be equal across two groups. When all the structural paths were compared, the difference between two groups was small. For both groups, overt victimization was a significantly positive predictor for depressive symptoms. The experience of overt victimization significantly predicted more depressive symptoms for both transition and non-transition groups. Self-esteem also negatively predicted depressive symptoms for both groups. As a result, self-esteem mediated the relationship between overt victimization and depressive symptoms for both groups. The direct effect from overt victimization to anxiety symptoms was stronger for school transition students (loading = .15, p = .07) than non-transition students (loading = .04, p = .44). Self-esteem was a significantly negative predictor for anxiety symptoms for the non-transition group ($p \leq .001$), but the relationship was not significant for the transition

group ($p > .05$). The indirect effect from overt victimization to anxiety symptoms through self-esteem was significant for non-transition students ($p < .01$), but not for transition students ($p > .05$). The total effect from overt victimization to anxiety symptoms were significant for students who experienced transition ($p < .05$), but not for students who did not ($p > .05$) (Table 25).

Changes over time in latent constructs. In order to examine the changes of latent variables over time, five multiple indicator linear growth models were specified for each latent variable (Figure 6). The multiple indicator linear growth models require measurement invariance of the indicators across time. This is realized by holding the intercept and factor loadings of the factor indicators equal over time (Muthen & Muthen, 2007). Results showed that the model for the relational victimization fit the data well, $\chi^2 = 59.77$, df = 24, $p < .001$, CFI = 0.99, TLI = 0.99, RMSEA = 0.04, SRMR = 0.03. Relational victimization decrease significantly over time (slope = -0.04, $p < .001$) for all students. When two transition groups were analyzed separately for relational victimization, the model fit the data well, $\chi^2 = 86.13$, df = 52, $p < .01$, CFI = 0.99, TLI = 0.99, RMSEA = 0.03, SRMR = 0.03. For the transition group, the relational victimization decrease significantly after school transition (slope = -0.06, $p < .05$), and for the non-transition group, the relational victimization also decreased significantly over time (slope = -0.04, $p <.05$).

The multiple indicator linear growth model for overt victimization fit the data well, $\chi^2 = 28.22$, df = 5, $p < .001$, CFI = 0.99, TLI = 0.98, RMSEA = 0.06, SRMR = 0.03. Overt victimization increased significantly over time (slope = 0.04, $p < .01$) for all students. When two transition groups were analyzed separately for overt victimization,

the multiple indicator linear growth model also fit the data well, $\chi^2 = 33.15$, df = 12, $p <$ .001, CFI = 0.99, TLI = 0.98, RMSEA = 0.06, SRMR = 0.03. For the transition group, the overt victimization did not change significant after school transition (slope = 0.02, $p >$ .05). For the non-transition group, the overt victimization increased significantly over time (slope = 0.04, $p <$.001).

The multiple indicator linear growth model for the depressive symptoms fit the data well, $\chi^2 = 40.61$, df = 24, $p = .02$, CFI = 0.997, TLI = 0.995, RMSEA = 0.02, SRMR = 0.02. Depressive symptoms decreased significantly over time (slope = -0.01, $p < .01$) for all students. When two transition groups were analyzed separately for depressive symptoms, the multiple indicator linear growth model fit the data well, $\chi^2 = 81.23$, df = 53, $p < .01$, CFI = 0.995, TLI = 0.99, RMSEA = 0.03, SRMR = 0.03. For the transition group, the depressive symptoms did not change after school transition (slope = -0.007, p >.10). For the non-transition group, the depressive symptoms decreased significantly over time (slope = -0.014, $p < .05$).

The multiple indicator linear growth model for the anxiety symptoms fit the data well, $\chi^2 = 63.41$, df = 24, $p < .001$, CFI = 0.99, TLI = 0.99, RMSEA = 0.04, SRMR = 0.03. Anxiety symptoms decreased significantly over time for all students (slope = -0.07, $p < .001$). When two transition groups were analyzed separately for anxiety symptoms, the multiple indicator linear growth model fit the data well, $\chi^2 = 81.23$, df = 53, $p < .01$, CFI = 0.995, TLI = 0.99, RMSEA = 0.03, SRMR = 0.03. For the transition group, the anxiety symptoms decreased significantly after school transition (slope = -0.05, $p <$.05). For the non-transition group, the anxiety symptoms decreased more over time (slope = -0.08, $p < .001$).

The multiple indicator linear growth model for self-esteem fit the data well, χ^2 = 38.54, df = 24, *p* = .03, CFI = 0.997, TLI = 0.996, RMSEA = 0.02, SRMR = 0.02. Self-esteem increased significantly over time for all students (slope = 0.02, *p* < .01). When two transition groups were analyzed separately for self-esteem, the multiple indicator linear growth model fit the data well, χ^2 = 81.75, df = 52, *p* < .01, CFI = 0.995, TLI = 0.99, RMSEA = 0.03, SRMR = 0.04. For the transition group, the self-esteem did not change after school transition (slope = -0.001, *p* > .10), but for the non-transition group, the self-esteem increased significantly over time (slope = 0.02, *p* < .01).

Research Question 6: Is the Relationship between Victimization and Depressive Symptoms Unidirectional or Reciprocal?

It was hypothesized that the relationship between victimization and depressive symptoms would be reciprocal. The hypothesized structural model fit the data well, χ^2 = 974.65, df = 422, *p* < .001, CFI = 0.98, TLI = 0.97, RMSEA = 0.03, SRMR = 0.04. In the model (Table 26), each Time 1 variable predicted its Time 2 and Time 3 counterparts. Each Time 2 variable predicted its Time 3 counterpart. Overt victimization at Time 1 negatively predicted depressive symptoms at Time 2, standardized loading = -0.15, Est./S.E = -3.23, *p* <.001. Overt victimization at Time 2 negatively predicted depressive symptoms at Time 3, standardized loading = -0.12, Est./S.E = -1.92, *p* = .05. Relational victimization at Time 1 positively predicted depressive symptoms at Time 2, standardized loading = 0.13, Est./S.E = 2.72, *p* <.01. Relational victimization at Time 2 positively predicted depressive symptoms at Time 3, standardized loading = 0.21, Est./S.E = 3.33, *p* <.001. Self-esteem at Time 2 negatively predicted depressive symptoms at Time 3, but

this relationship was not significant between self-esteem at Time 1 and depressive symptoms at Time 2.

In order to examine the unexpected negative relationship between previous overt victimization and later depressive symptoms, the hypothesized structural model was examined separately for overt victimization and relational victimization. The overt victimization only model (Figure 7, Table 27) fit the data well, $\chi^2 = 574.57$, df = 205, $p <$ .001, CFI = 0.98, TLI = 0.97, RMSEA = 0.04, SRMR = 0.04. Overt victimization at Time 1 did not predict depressive symptoms at Time 2, standardized loading = -0.05, Est./S.E = -1.61, $p = .11$. Overt victimization at Time 2 did not predict depressive symptoms at Time 3, standardized loading = 0.04, Est./S.E = 1.23, $p = .22$. Depressive symptoms at Time 1 positively related to overt victimization at Time 2, but the relationship was not significant, standardized loading = 0.07, Est./S.E = 1.82, $p = .07$. Depressive symptoms at Time 2 did not predict overt victimization at Time 3 either, standardized loading = -0.01, Est./S.E = -0.23, $p = .82$, respectively. This result suggests that when previous depressive symptoms and previous victimization were controlled, overt victimization did not predict later depressive symptoms. By including both overt victimization and relational victimization into the model, the relationship between relational victimization at Time 1 and depressive symptoms at Time 2 decreased and became significantly negative, as indicated by the standardized loading, which changed from -0.02 to -0.12. The relationship between relational victimization at Time 2 and depressive symptoms at Time 3 changed from positive to significantly negative, as indicated by the standardized loading, which changed from 0.04 to -0.15.

For the relational victimization only model (Figure 8, Table 28), the model had an acceptable fit, $\chi^2 = 720.91$, df = 274, $p < .001$, CFI = 0.97, TLI = 0.97, RMSEA = 0.04, SRMR = 0.04. Relational victimization at Time 1 did not predict depressive symptoms at Time 2, standardized loading = 0.03, Est./S.E = 0.92, $p = .36$. Relational victimization at Time 2 significantly predicted depressive symptoms at Time 3, standardized loading = 0.11, Est./S.E = 3.09, $p < .001$. Depressive symptoms at Time 1 predicted relational victimization at Time 2, standardized loading = 0.13, Est./S.E = 3.48, $p < .001$. Depressive symptoms at Time 2 also predicted relational victimization at Time 3, standardized loading = 0.08, Est./S.E = 2.00, $p <.05$. By including both overt victimization and relational victimization into the model, the relationship between relational victimization at Time 1 and depressive symptoms at Time 2 increased from 0.03 ($p > .05$) to 0.11 ($p = .01$). The relationship between relational victimization at Time 2 and depressive symptoms at Time 3 also increased from 0.13 ($p <.01$) to 0.21 ($p <.001$). As a result, overt victimization again served as a suppressor. The negative relationship between overt victimization and depressive symptoms was the result of the suppressor effect.

In the hypothesized structural model, seven paths were not significant. In order to simplify the model, non-significant path were gradually removed. Chi-square difference test was used for each step to compare the simpler model with the previous model and the original model. If the simpler model was not significantly different from the previous model and the original model, the simpler model was preferred over the original model (See Table 29 for model comparison results). Previous overt victimization and relational victimization did not predict later self-esteem, so the four paths were removed from the

model. After deleting the four path, the model fit the data well, $\chi^2 = 978.24$, df = 426, $p < .001$, CFI = 0.98, TLI = 0.97, RMSEA = 0.03, SRMR = 0.04. The chi-square difference test showed that two models were not significantly different, $\Delta\chi2= 3.59$, $\Delta df= 4$, $p > .05$. So the simpler model was preferred. In the simpler model, three paths were still not significant (e.g., overt victimization at Time 2 did not predict depressive symptoms at Time 3, self-esteem at Time 1 did not predict depressive symptoms at Time 2, depressive symptoms at Time 2 did not predict overt victimization at Time 3). These three paths were then removed, one at a time, with the least significant path being removed first. After deleting all seven non-significant paths, all loadings on the variables of interest were significant in the model (Figure 9, Table 30). This model was not significantly different from the original model, $\Delta\chi2= 8.7$, $\Delta df= 7$, $p > .05$, so the simplest model was preferred. The model fit the data well, $\chi^2 = 983.35$, df = 429, $p < .001$, CFI = 0.98, TLI = 0.97, RMSEA = 0.03, SRMR = 0.04. The results showed that previous depressive symptoms predicted later relational victimization for both time points. Depressive symptoms at Time 2 predicted overt victimization at Time 3. Previous relational victimization (positively) and self-esteem (negatively) predicted later depressive symptoms. Overt victimization at Time 1 negatively predicted depressive symptoms at Time 2, which might be the result of suppressor effect as suggested in the previous analysis. Previous overt and relational victimization did not predict later self-esteem.

Model modification indices suggested that there were unexplained relationship between Time 1 variables and their Time 3 counterparts as well as between self-esteem to later victimization. The simplified model was then modified based on those modification indices. After adding the two path from self-esteem to later victimization, the model fit

significantly better, χ^2 = 977.29, df = 427, p < .001, CFI = 0.98, TLI = 0.97, RMSEA = 0.03, SRMR = 0.04, chi-square difference test was significantly, $\Delta\chi2$= 6.06, Δdf= 2, p < .05. After adding the four path from each Time 1 variable to its Time 3 counterpart, the model fitness indices improved significantly, χ^2 = 907.31, df = 423, p < .001, CFI = 0.98, TLI = 0.97, RMSEA = 0.03, SRMR = 0.03, chi-square difference test was significantly, $\Delta\chi2$= 69.98, Δdf= 4, p < .001. In this model, only one path was not significant. After deleting the non significant path, the model fitness indices did not change, χ^2 = 908.23, df = 424, p < .001, CFI = 0.98, TLI = 0.97, RMSEA = 0.03, SRMR = 0.03, chi-square difference test was significantly, $\Delta\chi2$= 0.92, Δdf= 1, p > .05, so the simpler model was selected. In the final model (Figure 10, Table 31), each Time 1 variable predicted its Time 2 and Time 3 counterparts and each Time 2 variable predicted its Time 3 counterpart. Relational victimization at Time 1 and Time 2 positively predicted depressive symptoms at Time 2 and Time 3. Overt victimization at Time 1 negative predicted depressive symptoms at Time 2, which was the result of the suppressor effect. Depressive symptoms at Time 1 positively predicted overt victimization and relational victimization at Time 2. Self-esteem at Time 2 negatively predicted depressive symptoms at Time 3. Self-esteem at Time 2 negatively predicted overt victimization and relational victimization at Time 3. The results suggest the reciprocal relationship between relational victimization and depressive symptoms.

Research Question 7: Is the Relationship between Victimization and Anxiety symptoms Unidirectional or Reciprocal?

It was hypothesized that the relationship between victimization and anxiety symptoms would be reciprocal. A similar process as specified above was used to test the

model for anxiety symptoms. The hypothesized structural model fit the data well, χ^2 = 933.96, df = 422, $p < .001$, CFI = 0.97, TLI = 0.97, RMSEA = 0.03, SRMR = 0.05. In the model (Table 32), each Time 1 variable predicted its Time 2 counterpart and each Time 2 variable predicted its Time 3 counterpart as hypothesized. However, different from the hypothesis, victimization at Time 1 did not predict anxiety symptoms or self-esteem at Time 2. Victimization at Time 2 did not predict anxiety symptoms or self-esteem at Time 3. Anxiety symptoms at Time 2 did not predict overt victimization or relational victimization at Time 3. Unexpectedly, anxiety symptoms at Time 1 negatively predicted overt victimization at Time 2 ($p < .001$) and relational victimization at Time 2 ($p = .08$). In the model, several paths were not significant. In order to simplify the model, the least significant paths were deleted gradually, and chi-square difference test was utilized during the process. After deleting all the non significant paths, the data fit the model well, χ^2 = 946.83, df = 434, $p < .001$, CFI = 0.97, TLI = 0.97, RMSEA = 0.03, SRMR = 0.05, and not significantly different from the original model, $\Delta\chi^2$ = 12.87, Δdf = 12, $p > .05$. As a result, the simplified model was selected (Figure 11, Table 33). In the model, anxiety symptoms at Time 1 negatively predicted overt victimization at Time 2 ($p < .001$), relational victimization at Time 2 ($p < .05$).

Model modification indices suggested that there were unexplained relationship between Time 1 variables and their Time 3 counterparts as well as between self-esteem to later victimization. Model were modifies based on those modification indices. After adding the four path from self-esteem to later victimization, the model fit significantly better, χ^2 = 924.39, df = 430, $p < .001$, CFI = 0.98, TLI = 0.97, RMSEA = 0.03, SRMR = 0.04, chi-square difference test was significantly, $\Delta\chi2$= 22.44, Δdf= 4, $p < .001$. After

adding the four path from each Time 1 variable to its Time 3 counterpart, the model fitness indices improved significantly, $\chi^2 = 852.09$, df = 426, $p < .001$, CFI = 0.98, TLI = 0.97, RMSEA = 0.03, SRMR = 0.04, $\Delta\chi2 = 72.30$, $\Delta df = 4$, $p < .001$. All the paths were significant in this model; as a result, this was selected as the final model (See Table 34 for model comparison results). In the final model (Figure 12, Table 35), each Time 1 variable predicted its Time 2 and Time 3 counterpart, each Time 2 variable predicts its Time 3 counterpart. Previous self-esteem negatively predicted later overt victimization and relational victimization. Time 1 anxiety symptoms negatively predict Time 2 overt victimization and relational victimization. The result suggests that high self-esteem and high anxiety symptoms serve as protectors for later overt victimization and relational victimization.

Discussion

The current research has contributed to our understanding of the relationship between two types of peer victimization and internalizing symptoms and examined the cognitive diathesis-stress model in the peer victimization context among adolescents using longitudinal data. The results suggest that cognitive diathesis-stress model for depression can be interpreted as both mediation and moderation models for older students (sixth to ninth graders), but only as mediation model for younger students (fifth graders). The results also suggest that relationships among peer victimization, self-esteem, depressive symptoms, and anxiety symptoms differ for boys and girls and for students who experienced school transition and who did not. The findings from this study also validated the reciprocal relationship between peer victimization and internalizing symptoms. The unique findings regarding gender differences highlight the importance of developing different interventions for boys and girls. The findings regarding transition group differences highlight the importance of developing intervention programs that targets students during school transitions. The following paragraphs discuss the findings from this study, followed by the limitations and future directions.

Research Question 1: Did the Experience of Overt and Relational Victimization Predict Later Depressive and Anxiety Symptoms in Adolescents?

It was hypothesized that the experiences of overt and relational victimization would predict later depressive and anxiety symptoms. In general, the results support this hypothesis when relational victimization and overt victimization were analyzed separately. These findings support aspects of the negative life events theory that suggest that stressful life events, such as peer victimization, contribute to the onset and

maintenance of depressive symptoms and anxiety symptoms. The findings validated the correlation between peer victimization and internalizing symptoms in many cross-sectional studies (see Hawker & Boulton for a review, 2002) using longitudinal data. The findings are consistent with two previous longitudinal studies that found that peer victimization (both relational victimization and overt victimization) predicted later internalizing symptoms (Hanish & Guerra, 2002; Nolan et al., 2003; Olweus, 1993a).

Suppressor effect. When relational victimization and overt victimization were examined together in the model, the relationship between relational victimization and internalizing symptoms increased, and the relationship between overt victimization and internalizing symptoms became negative in some cases. These findings suggest that overt victimization might serve as a suppressor in the model. Cohen and Cohen (1975, as cited in Paulhs, Robins, Trzensniewski & Tracy, 2004) defined a suppressor variable as a variable that increases the weight of the original predictor(s) already in the equation. Suppressing effect occurs when the simultaneous inclusion of two predictors improves the beta coefficient for the original variable. Suppressor effects have been viewed as an elusive dynamic to interpret in the literature (Lancaster, 1999). By adding the suppressor (overt victimization) into the model to predict outcomes (depressive symptoms and anxiety symptoms), it removed the criterion- irrelevant variance from the original predictor (relational victimization), allowing for a more concise estimation of the relationship between the original predictor and outcome variables (relational victimization and depression and anxiety symptoms) (Hicks, & Patrick, 2006; Lancaster, 1999; Paulhs, Robins, Trzensniewski & Tracy, 2004). Because the irrelevant portion is removed, the original predictor (relational victimization) becomes a stronger predictor to

the outcome variables (depressive symptoms and anxiety symptoms), as indicated by the increase in the beta coefficients in relational victimization in the current study. The suppressor effect suggests that it is the "pure" relational victimization that best predicts depressive and anxiety symptoms. If one can remove the influence of overt victimization on the relational victimization, then the predictability of this more detrimental and "purer" victimization regarding internalizing symptoms is enhanced. In the current study, relational victimization had a stronger correlation with internalizing symptoms (both depressive symptoms and anxiety symptoms) than did overt victimization, which contributes to the suppressor effect. The stronger correlation between the "pure" relational victimization and internalizing symptoms compared with the correlation between overt victimization and internalizing symptoms suggest that for adolescents, relational victimization might be more detrimental than overt victimization.

In the current study, relational victimization was found to highly correlated with overt victimization (correlation between latent constructs ranged from .68 to .81 over three time points (Table 8). Theoretically, relational victimization and overt victimization should be two related but distinct constructs (Crick & Grotpeter, 1996), the high correlation between these two constructs (especially at Time 2 and Time 3) in the current study might be the result of the measurement error. Relational victimization and overt victimization were measured in the same scale in the current study, and students were asked to answer the same questions three times over three semesters. The proximity of the items and the similarity in the wording of all the victimization items might lead students to answer the items in a similar manner (e.g. reporting high on all the victimization items). It is also possible that students might not read all the items

carefully, so report in a similar pattern to all the items related to victimization. As a result, the correlation between relational victimization and overt victimization was high in the current study, which contributes to the suppressor effect.

Research Question 2: Did Self-esteem at Time 2 Moderate the Relationships between Peer Victimization (Overt and Relational) at Time 2 and Internalizing Symptoms (Depression and Anxiety) at Time 3?

It was hypothesized that self-esteem at Time 2 would moderate the relationship between peer victimization at Time 2 and depressive symptoms as well as the relationship between peer victimization at Time 2 and anxiety symptoms at Time 3, especially among older adolescents (sixth graders and older). In the current study, when both relational victimization and overt victimization and their interaction with self-esteem were entered into the model, the moderation effects were not significant for either of them, although the moderation model fit the data significantly better than did the model without interaction terms. The lack of significant moderation effects might be due to the high correlation between relational victimization and overt victimization at Time 2 (r =.81). When two types of victimization were examined separately, self-esteem was found to moderate the relationship between relational victimization at Time 2 and depressive symptoms at Time 3 among all students. The result suggests that the relationship between relational victimization and depressive symptoms conditioned on different levels of self-esteem. For students with high self-esteem, higher relational victimization predicted higher depressive symptoms to a lesser degree, compared with students with low self-esteem. When examined separately for younger and older adolescents, the significant moderation effect was only found among sixth to ninth

graders, but not fifth graders. The fact that the moderation effect was not found among fifth graders suggests that the cognitive diathesis stress model for depressive symptoms should be interpreted as a moderation model only among older students. This might be because older students tend to have more stable self-esteem, compared with younger students (Nolen-Hoeksema, Girgus, & Seligman, 1992; McDevitt & Ormrod, 2009). In order for self-esteem to be a moderator, it needs to remain relatively stable and independent from the negative life events. As a result, the traditional cognitive diathesis-stress moderation model for depressive symptoms may not apply to preadolescents (5th graders).

The moderation result on overt victimization was hard to explain. Self-esteem was found to moderate the relationship between overt victimization and depressive symptoms only when all students were examined. However, the moderation effect was not significant for older students or younger students when examined separately, although the moderation term was marginally significant at .10 level among older students ($.10 < p < .05$). It is not clear whether the lack of significant results among older students and younger students in separate models is the result of smaller sample size.

Furthermore, the result from the current study suggests that the cognitive diathesis-stress interaction model (using self-esteem as a diathesis) may only apply to depressive symptoms and not anxiety symptoms. It is possible that self-esteem is not a relevant cognitive diathesis for anxiety symptoms because thinking positively about self (i.e., high self-esteem) may not be relevant in the relationship between peer victimization and anxiety symptoms. Future studies should explore other cognitive diathesis for

anxiety symptoms, such as dysfunctional cognitive style and anxiety sensitivity (Leen-Feldner et al., 2006; Zvolensky et al., 2005).

Research Question 3: Did Self-esteem at Time 2 Mediate the Relationships between Peer Victimization (Overt and Relational) at Time 1 and Internalizing Symptoms (Depression and Anxiety) at Time 3?

As an alternative to the moderation model, researchers suggest that self-esteem might mediate the relationship between negative life events and depressive symptoms among children (Cole & Turner, 1993; Garber & Hilsman, 1992; Gibb & Alloy, 2006; Turner & Cole, 1994). It was hypothesized that self-esteem at Time 2 would mediate the relationship between peer victimization at Time 1 and depressive symptoms as well as the relationship between peer victimization at Time 1 and anxiety symptoms at Time 3, especially among younger adolescents (fifth graders). When the mediation model was examined with both overt and relational victimization in the model, self-esteem was only found to mediate the relationship between relational victimization and internalizing symptoms among older students. No mediation effects were found among younger students. The lack of significant results when two types of victimization were included in the model might again be the result of the high correlation between relational victimization and overt victimization. When two types of victimization were examined separately, the results support the mediation effect of self-esteem on the relationship between two types of peer victimization and depressive symptoms for both older students and younger students. The mediation effect of self-esteem on the relationship between two types of peer victimization and anxiety symptoms was only found among older students, but not among younger students. These findings support the hypothesis that

cognitive diathesis-stress model can be interpreted as a mediation model for both depressive symptoms and anxiety symptoms among older students, but only for depressive symptoms among younger students.

Research Question 4: Did the Relationships among Victimization, Self-esteem, Depressive Symptoms, and Anxiety symptoms Differ for Boys and Girls?

Mean level differences. To gain more knowledge about the gender difference in overt victimization, relational victimization, depressive symptoms, anxiety symptoms, and general self-esteem among adolescents, this study examined the mean level differences in five latent constructs between boys and girls. It was hypothesized that boys would report more overt and less relational victimization than girls, and boys would report more depressive symptoms and anxiety symptoms and lower general self-esteem than girls. Consistent with this hypothesis and many previous studies, boys in the current study reported significantly lower depressive symptoms and anxiety symptoms and a significantly higher level of overt victimization than girls over three time points. The findings from the current study are consistent with previous research that girls experience a higher level of depressive symptoms (Cantwell, 1990; Hankin et al., 1998; Ge et al., 2001; Lewinsohn et al., 1993, 1994; Lewinsohn et al., 2000; McGee et al., 1992), higher anxiety symptoms (Cammack-Barry, 2005; Compton et al., 2000; Gullone et al., 2001; Lewinsohn et al., 1998; Muris et al., 1998; Ollendick et al., 1995; Reynolds & Paget, 1983; Reynolds & Richmond, 1978), and lower levels of overt victimization compared with boys (Martin & Huebner, 2007; Putallaz et al., 2007; Prinstein et al., 2001; Rigby, 1998; Storch et al., 2003; 2005).

Gender role theories suggest that girls and boys learn to develop gender-typical feminine and masculine behaviors, traits, and skills through a socialization process (Bem, 1981, Muris et al., 2005, Ollendick, et al., 1995). The expression of sadness, fear, and anxiety is consistent with the feminine gender role and is generally accepted by adults as an appropriate way for girls, but not for boys, to express negative emotions (Kindlon & Thompson, 2000; Muris et al., 2005). Fear, anxiety, and avoidance are considered as inconsistent with a masculine gender role, and as a result, are not acceptable for boys. Boys, from an early age, are encouraged to be brave and to not show negative emotions (Kindlon & Thompson, 2000; Muris et al., 2005). As a result of the gender role socialization, girls tend to report higher levels of depressive and anxiety symptoms than boys.

Some previous studies have shown girls experienced more relational victimization than boys (Crick & Bigbee, 1998; Crick et al., 1996; 1999; 2002; Crick & Grotpeter, 1996; Dempsey et al., 2006; Ostrov et al., 2004; Putallaz et al., 2007); however, the current study did not support this gender difference. Results showed that boys in the current study reported a slightly lower level of relational victimization at Time 1 (mean difference = 0.11, $p = .07$), but similar levels of relational victimization at Time 2 and Time 3. This is consistent with other studies that documented the absence of gender differences in relational victimization (Storch et al., 2003; 2005). It is likely that both boys and girls experience relational victimization during adolescence, because overt forms of aggression or bullying becomes less acceptable during middle school and high school, and both boys and girls begin to engage in more subtle forms of aggression.

Some previous studies have shown girls reported lower self-esteem than boys (Alpert-Gillis & Connell, 1989; Harper & Marshall, 1991; Marsh, 1989; Khanlou, 2004; Quatman & Watson, 2001; Simmons & Blyth, 1987; Zimmerman, Coperland, Shope, & Dielman, 1997). However, the current study did not support this gender difference in self-esteem either. It is possible that boys reported similar levels of self-esteem compared with girls in the current study because the current study included preadolescents (fifth graders), and gender difference in self-esteem might not have fully developed at that time. It is possible that the gender difference in self-esteem is more salient among older adolescents than preadolescents because one study suggested that self-esteem dropped more significantly among girls than boys starting from secondary school (Harter, 2006).

Different associations. To gain more knowledge about the different association between peer victimization and internalizing symptoms across gender, the mediation model was examined separately for boys and girls. It was hypothesized that the experience of relational victimization might lead to more internalizing symptoms for girls than for boys because girls value intimacy and the relationship more than boys (Gilligan, 1982; Rose & Asher, 2004, Rose & Rudolph, 2006), while boys tend to focus on competition and dominance (Maccoby, 1998). However, current findings do not support this hypothesis. The current study showed very few gender differences, and for both boys and girls, the experience of relational victimization significantly predicted more depressive symptoms and more anxiety symptoms. The findings suggest that relational victimization is hurtful for both boys and girls. Boys, in an effort to protect their masculinity (image) and avoid being perceived as weak, might not openly report or

discuss negative feelings associated with relational victimization; however, the negative impact of relational victimization on boys should not be overlooked.

Although girls value relationship more than boys (Gilligan, 1982; Rose & Asher, 2004, Rose & Rudolph, 2006), and relational victimization targets what girls care the most, one possible reason for lack of gender difference on the effect of relational victimization on internalizing symptoms is that female victims might receive more support from their peers (Garandeau, Wilson, & Rodkin, 2010). The reason may be two-fold. Girls have been found to be more empathetic and more sensitive towards others' feelings or distress than boys (Espelage, Mebane, & Adams, 2004; Gilligan, 1982; Menesini et al., 1997), and girls view bullying behavior as more negative than boys (Crick & Werner, 1998). As a result, female victims, especially those whose feelings were hurt by relational victimization might receive support, empathy, and compassion from their female peers. As a result of the support they receive, they might not develop more depressive or anxiety symptoms compared with boys who experienced relational victimization. On the other hand, aggressive girls tend to be viewed as more negatively compared with aggressive boys. For example, using longitudinal data, Cillessen and Borch (2006) found that overt aggression had a stronger negative effect on initial acceptance for girls than for boys. For relationally aggressive girls, their sociometric popularity decreased more from grade 5 to 12 compared to relationally aggressive boys (Cillessen & Borch, 2006). Girls who were victimized by female bullies might receive more support and compassion from female peers as the result of the resentment other girls have towards the female bullies (Garandeau et al., 2010). Different from girls, boys tend to view bullying behavior as more positive (Crick & Werner, 1998). Furthermore,

adolescent boys who are aggressive tend to be viewed as more favorable by girls. Aggressive boys were more likely to be nominated as being cool by girls than boys who were academically successful, but aggressive girls were not considered as cool by boys (Rodkin, Farmer, Pearl, Van Acker, 2006). Aggressive boys were more likely to be invited by girls to a date after controlling for physical attractiveness and peer affiliations (Pellegrini & Bartini, 2001). Aggressive boys are viewed more positively by both boys' and girls' peer groups, which may promote bullying behavior. As a result, male victims might not receive as much support from peers. Although girls care about relationships more than boys, without receiving support from the peer group for relational victimization, boys might experience the same level of depressive and anxiety symptoms as girls.

Interestingly, the results showed that for boys, the experience of overt victimization was not a significant predictor for anxiety symptoms after controlling for self-esteem ($p = .10$), but for girls, the experience of overt victimization was still a significant predictor for anxiety symptoms after controlling for self-esteem ($p = .01$). Girls seem to be bothered by overt victimization more than boys after controlling for self-esteem. One possible reason behind this finding is that boys might underreport their feelings of anxiety because it might be viewed as a sign of weakness, especially in the face of overt victimization. Studies have shown that male gender role orientation, e.g., masculinity, and preference for boy's toys and activities were negatively related to self-reported fear and anxiety (Ginsburg & Silverman, 2000, Muris et al., 2005). Furthermore, boys tend to view bullying behavior as more positive (Crick & Werner, 1998). It is possible that boys might view overt aggression as a "gender typical" way to

joke around (e.g., rough and tumble play), and as a result, they might under report overt victimization. It is also possible that overt victimization is normalized among boys, so the experience of overt victimization might not elicit as much anxiety symptoms among boys compared with girls.

Research Question 5: Did the Relationships among Victimization, Self-esteem, Depressive Symptoms, and Anxiety symptoms Differ for Students Who Experienced School Transition and Who Did Not?

Mean level differences. The transition group reported more relational victimization at Time 1, more depressive symptoms at all three time points, more anxiety symptoms at Time 2 and Time 3, and lower self-esteem at all three time points than the non-transition group. However, two groups were not significantly different on overt victimization over three time points ($p > .05$). In the current study, students who experienced school transition are at different grades compared with students who did not experience school transition. As a result, the effect of transition is confounded with students' grade and age. It is not clear if the higher depressive symptoms and anxiety symptoms and lower self-esteem reported by the transition group are the results of school transition or the results of age or grade. Caution needs to be granted when interpreting these differences.

Change overtime. When within group change was examined using multiple indicator linear growth models, some different patterns emerged between two groups. For the non-transition group, the overt victimization and self-esteem increased significantly, and depressive symptoms decreased significantly over time. However, for the transition group, the overt victimization, self-esteem, and depressive symptoms did

not change significantly after school transition. For both transition and non-transition groups, relational victimization and anxiety symptoms decreased significantly over time. The current findings are not consistent with previous studies that found that students scored higher on depressive symptoms, higher on anxiety symptoms (Adams & Adams, 1991; Eccles et al., 1997; Roeser, et al., 1999; Tram & Cole, 2006; Simmons & Blyth, 1987), and lower on self-esteem (Blyth et al., 1983; Eccles et al., 1984; Wigfield et al., 1991) after school transition. However, the lack of change in the transition group in self-esteem and depressive symptoms in comparison to the increase in self-esteem and decrease in depressive symptoms among non-transition students still suggest that the experience of school transition negatively impact psycho-social adjustment among students who experienced school transition.

The hypothesized increase in peer victimization after transition was not observed in the current data. For the transition group, overt victimization did not change and relational victimization decreased significantly after school transition. These findings do not support Social Dominance Theory that individuals renegotiate dominance status after transition into a new environment by engaging in aggressive behaviors (Hawley, 1999; Pellegrini & Long, 2002). The findings are partially consistent with one previous study that also did not find changes in peer victimization after transition (Van Blyderveen, 2008). The decrease in relational victimization in both transition and non-transition groups is also consistent with previous studies that found peer victimization decrease with age (Olweus, 1993; 1994; Rigby, 1996; see Smith et al., 1999 for a review).

The current study showed that the overt victimization increased significantly for the non-transition group. This increase in overt victimization is unexpected and

inconsistent with a previous study that suggested that overt forms of aggression and victimization decreased during adolescence (Graham & Bellmore, 2007). Studies have found that peer victimization decreased with age during adolescence based on self-report (Olweus, 1993a; 1994; Rigby, 1996; see Smith et al., 1999 for a review) and peer nomination (Salmivalli, Lappalainen & Lagerspetz, 1998). However, previous studies did not separate relational victimization and overt victimization, and most of the studies used cross-sectional data (Olweus, 1993a; 1994; Rigby, 1996). The current study separated two types of peer victimization, and found different developmental patters for each. It is also important to mention that this study only followed the students for about one year. It is possible that overt victimization might decrease later in high school, which is not captured in the current data.

Different associations. It was hypothesized that the relationship between victimization and depressive symptoms, victimization and anxiety symptoms would be stronger for students who experienced school transition than those who did not. The findings from the study partially support the hypothesis after controlling for students' grade. The results showed that the relationship (total effect) between overt victimization and anxiety symptoms was stronger for students who experienced school transition than for students who did not experience school transition. School transition might serve as an additional stressor for students who experience overt victimization, and as a result, contributes to higher levels of anxiety symptoms. Furthermore, self-esteem was also found to mediate the relationship between relational victimization and anxiety symptoms for non-transition students, but not for transition students. Self-esteem was a significantly negative predictor for anxiety symptoms only for the non-transition group,

but not for the transition group, suggesting that the protective effect of self-esteem only applies to the non-transition group. Self-esteem may play a less important role during transition years because students usually experience extra stress during the transition period. These findings support previous studies that showed that transition is a stressful time for students (Zeedyk et al., 2003), and that students are at higher risk for developing internalizing symptoms (Eccles et al., 1997; Roeser, et al., 1999; Tram & Cole, 2006) after school transition, especially in the event of peer victimization. As a result, it is important for teachers and school staff to provide additional support to students who are victimized by their peers because those students are experiencing multiple stressors during transition time.

Research Question 6: Is the Relationship between Victimization and Depressive Symptoms Unidirectional or Reciprocal?

It was hypothesized that the relationship between victimization and depressive symptoms would be reciprocal. When previous victimization and depressive symptoms were controlled, current results support this reciprocal relationship between relational victimization (but not overt victimization) and depressive symptoms. The significant reciprocal relationship occurred mainly between Time 1 and Time 2 when both relational victimization and overt victimization were included in the model. More relational victimization at Time 1 related to greater depressive symptoms at Time 2; greater depressive symptoms at Time 1 related to more relational victimization at Time 2, which then contributed to greater depressive symptoms at Time 3, suggesting a vicious cycle between depressive symptoms and relational victimization (Figure 9). When only relational victimization was included in the model, the reciprocal relationship mainly

occurred between Time 2 and Time 3 (Figure 8). Greater depressive symptoms at Time 1 predicted more relational victimization at Time 2, which then predicted greater depressive symptoms at Time 3. Furthermore, greater depressive symptoms at Time 2 also predicted more relational victimization at Time 3. It is not clear why the reciprocal relationship did not replicate itself over all three time points. It is possibly due to the fact that the analysis controlled for previous depressive symptoms and peer victimization.

By including both overt victimization and relational victimization into the model, the relationship between relational victimization and depressive symptoms increased for both time points, and the relationship between overt victimization and depressive symptoms decreased from positive (but non-significant) to significantly negative for Time 1. This finding suggests that the negative impact from overt victimization to later depressive symptoms was the result of the suppressor effect. The relationship between relational victimization and depressive symptoms ($p < .05$) was stronger than the relationship between overt victimization and depressive symptoms ($p > .05$). It is likely that overt victimization was not an important contributor for later depressive symptoms when other variables were controlled, such as previous depressive symptoms, relational victimization, and self-esteem. For adolescents in the current study, relational victimization, instead of overt victimization, contributes more to their depressive symptoms. Researchers have suggested that adolescents engage in more relational bullying and experience more relational victimization during secondary school compared with elementary school, and overt or physical bullying becomes less acceptable to peers during adolescence (Graham & Bellmore, 2007). As a result, overt victimization might occur less often and hence contribute less to depressive symptoms. On the other hand,

peers become more important to adolescents than to younger children (McDevitt & Ormrod, 2009). The experience of relational victimization targets what adolescents care deeply about and hence may contribute to students' depressive symptoms. This finding in the current study highlights the detrimental potential of relational victimization and the importance of examining two types of victimization separately.

When two types of peer victimization were examined separately, the reciprocal relationship again was found between relational victimization and depressive symptoms. The results suggest that relational victimization contributes to the onset of depressive symptoms; meanwhile depressive symptoms among students also lead to higher risk for peer victimization. In contrast to what was hypothesized, this study failed to demonstrate a reciprocal relationship between overt victimization and depressive symptoms even when relational victimization was not included in the model. The finding of reciprocal relationship between relational victimization and depressive symptoms validates the previous theoretical discussion in the literature (Bernstein & Watson, 1997; Hammen, 1991; Marini et al., 2006; Vernberg et al., 1992) with empirical results, and is consistent with two previous studies (Gibb & Alloy, 2006; Vernberg et al., 1990). The current results suggest that the vicious cycle between relational victimization and depressive symptoms might contribute to the development and maintenance of both relational victimization and depressive symptoms. Adolescents who are depressed might be the easy targets for relational victimization than other adolescents. This experience of victimization may further reinforce their negative beliefs about self ("I am unlovable") and others ("no one likes me"), which then could contribute to the maintenance and/or the increase of their depressive symptoms.

In the current study, when previous self-esteem was controlled, the experience of peer victimization did not predict later self-esteem, but self-esteem still predicted later depressive symptoms. This is in contrast to the hypothesis, as well as previous studies (Overbeek, Zeevalkink, Vermulst, & Scholte, 2010) that suggested peer victimization predicted lower self-esteem. This finding might also seem inconsistent with the findings in the mediation model. The difference between the reciprocal model and the mediation model is that in the reciprocal model the stability of each construct was modeled by specifying the autoregressive paths for each construct from the previous time point. The lack of significant correlation between peer victimization and self-esteem in the reciprocal model suggests that peer victimization does not contribute to later self-esteem when victimization and self-esteem six month ago were controlled. It is important to mention that the current study only followed the students for about one year. Students' experience of peer victimization and level of self-esteem prior to the study were not controlled. Early experience of peer victimization might contribute to the changes in self-esteem before the study, and as a result, were not captured in the current data. Future studies are necessary to continue examining this relationship between peer victimization and self-esteem.

Research Question 7: Is the Relationship between Victimization and Anxiety symptoms Unidirectional or Reciprocal?

It was hypothesized that the relationship between victimization and anxiety symptoms would be reciprocal. In contrast to what was hypothesized, the results in the current study do not support the reciprocal relationship between peer victimization and anxiety symptoms. When previous victimization and anxiety symptoms were controlled,

peer victimization did not predict later anxiety symptoms or self-esteem. However, anxiety symptoms at Time 1 negatively predicted both relational victimization and overt victimization at Time 2. This finding is inconsistent with previous studies that found that anxiety symptoms positively related to peer victimization (Erath et al., 2007, Olweus, 1993a), or anxiety symptoms did not predict later peer victimization (Bond et al., 2001; Vernberg et al., 1992). The lack of relationship between previous victimization and later anxiety symptoms through self-esteem suggests that self-esteem might not be a relevant cognitive diathesis for anxiety. It is possible that thinking positively about self (i.e., high self-esteem) may not be relevant in the relationship between peer victimization and anxiety symptoms. Future studies should explore the relevant cognitive diathesis for anxiety symptoms. The negative association between anxiety symptoms and later peer victimization might be because students who feel anxious in social situations might avoid those situations to reduce the physiological arousal related to anxiety, which might protect them from being the victims of bullying (Grills, & Ollendick, 2002). It is also important to mention that the mean level of anxiety symptoms in the current study was relative low (mean score ranged from 0.75 to 1.22 for three time points), suggesting that the students in the current sample are not anxious at the clinical level. As a result, keeping a certain levels of anxiety and vigilance in social situations may be productive in that it protects those students from being the victims of bullying.

In the current study, self-esteem was found to negatively predict both relational victimization and overt victimization. The result suggests that students who are confident and think positively about themselves may behave in a way that prevents them from being picked on. The protective effect of self-esteem on both overt and relational

victimization is an interesting and unexpected finding. It was suggested that negative perception of self might "invite" bullying from peers (Rudolph & Clark, 2001). Conversely, it is possible that students with high self-esteem are more confident in their ability to cope with peer victimization and are more assertive in bullying situations. Being assertive, often conceptualized as a strategy to cope with bullying, might protect students from peer victimization (Bonds & Stoker, 2000). It is not clear how self-esteem prevents students from being bullied. One recent study found that undercontrolling, overcontrolling, and ego-resilient personality types moderated the relationship between self-esteem and peer victimization. Only in the subgroup of overcontrolling adolescents, self-esteem negatively related to peer victimization (Overbeek et al., 2010). Future studies are needed to continue to explore the protective effect of self-esteem on peer victimization.

Limitations

There are several limitations of the current study. First, the study was correlational in nature, and hence limited conclusions about cause–effect relations can be drawn. Second, only students' self-report was used to assess peer victimization and internalizing symptoms. Social desirability may be a concern in self-report measurement and students might underreport their experience of peer victimization and internalizing symptoms. The third limitation of this study is the generalizability of the findings. The students in the current study were recruited from nine schools in one city in the Midwest. Most of the participants were European Americans adolescents from grades five to nine. The findings of this study may not be readily generalizable to minority students or students living in rural areas or other socially and politically different areas. The findings

also are not generalizable to younger or older populations, such as preschool and early elementary school children or high school students. Readers need to be aware of the limitations of the sample when interpreting the findings in the current study.

Future Directions

Future studies should integrate information from multiple informants (e.g., parents and spouses) to provide more reliable information regarding peer victimization. In the current study, most of the sample was European Americans. Future studies should collect data from a more diverse population. In order to examine the pure effect of "transition" on students' experience of peer victimization, future studies should examine same-grade students who transit between schools and who do not transit between schools to reduce the confounding effect of students' grade. For example, researchers can collect data from schools that have students in grades five and six in the same school building and compare the data with schools that separate those two grades into separate elementary and middle school buildings. Furthermore, results from the current study suggest that self-esteem is not a relevant cognitive diathesis for anxiety symptoms. Future studies should explore other cognitive diathesis for anxiety symptoms, such as dysfunctional cognitive style.

Implications for Bullying Prevention and Intervention

The results from the current study have a few implications for bullying prevention and intervention. First, the positive linkages between previous peer victimization and later internalizing symptoms suggest that it is important for schools to stop the victimization and to develop prevention and intervention programs to reduce the negative impact of peer victimization. Second, findings in the current study suggest that students

with positive views of themselves are less likely to develop internalizing symptoms and experience peer victimization. It is possible that students with high self-esteem are more confident in their ability to confront bullies and cope with peer victimization situations. Prevention and intervention programs may teach students skills that align with individuals with high self-esteem, such as being assertive, being confident, use of humor, and other appropriate problem solving strategies. The findings of this study also support the reciprocal relationship between peer victimization and internalizing symptoms. The vicious cycle between relational victimization and depressive symptoms might contribute to the development and maintenance of both relational victimization and depressive symptoms. Adolescents who are depressed might be the easy targets for relational victimization, and the victimization experience may further contribute to the development and maintenance of depressive symptoms. As a result, it is important to utilize school counselors, school psychologists, and other community referral systems to provide efficacious treatment (e.g., medication and cognitive behavior therapy) to students with internalizing symptoms in order to interrupt the vicious cycle between internalizing symptoms and peer victimization. Accurate assessment and treatment of depressive symptoms and anxiety symptoms may prevent students from experiencing further peer victimization, which then prevent them from developing more internalizing symptoms. Group based treatment programs for internalizing symptoms, such as ACTION treatment program which has been found to be effective in helping teenager girls overcome depressive symptoms, may be considered (Stark, 2008). In addition to providing adolescents with appropriate treatment for internalizing symptoms, group based bullying

intervention programs, such as Olweus Bullying Prevention program (Olweus, 2007), should also be considered to reduce bullying and relational aggression within peer groups.

The unique findings regarding gender differences highlight the importance of developing different interventions for boys and girls. In the current study, girls reported higher levels of internalizing symptoms than boys. Girls also seem to be bothered by overt victimization more than boys after controlling for self-esteem, although girls experienced less overt victimization than boys. Prevention and intervention programs should teach girls strategies to cope with overt victimization and internalizing symptoms. On the other hand, boys reported experiencing similar levels of relational victimization compared with girls, and the association between relational victimization and internalizing symptoms were similar for boys and girls, as a result, relational victimization should not be simply conceptualized as a "girls' problem". Although boys reported lower levels of depressive and anxiety symptoms compared with girls, it is important to not underestimate the negative consequence of relational victimization on boys.

The findings regarding transition group differences highlight the importance of developing intervention programs that targets students during school transitions. In the current study, school transition might serve as an additional stressor for students who experienced peer victimization, which contributed to higher levels of anxiety symptoms among those students. Programs that help students to ease into the new school environment and promote positive relationship in the new peer groups might be beneficial to students during school transition.

Conclusions

The results in the current study showed that self-esteem mediated and moderated the relationship between peer victimization and depressive symptoms for older students. Self-esteem mediated the relationship between peer victimization and depressive symptoms for younger students as well as the relationship between peer victimization and anxiety symptoms among older students. For older students, high self-esteem served as a protective factor for depressive symptoms in the event of peer victimization. High self-esteem was also found to protect adolescents from experiencing relational victimization and overt victimization six month later. These results suggest that it is important to teach students skills that align with individuals with high self-esteem, such as being assertive, being confident, using humor, and other appropriate problem solving strategies to cope with peer victimization.

Furthermore, the relationship between relational victimization and depressive symptoms was found to be reciprocal. The vicious cycle between relational victimization and depressive symptoms may contribute to the development and maintenance of both relational victimization and depressive symptoms. As a result, it is important to provide efficacious treatment (e.g., medication and cognitive behavior therapy) to students with depressive symptoms and to develop prevention and intervention programs to reduce peer victimization in the peer groups in order to interrupt the vicious cycle between depressive symptoms and peer victimization.

The current study also found gender differences and transition group differences on the mean levels of the latent constructs and the relationship among constructs of interest. Boys in the current study reported significantly lower depressive symptoms and anxiety symptoms and a significantly higher level of overt victimization than girls over

three time points. For both boys and girls, the experience of relational victimization significantly predicted more depressive symptoms and more anxiety symptoms. However, the experience of overt victimization was a significant predictor for anxiety symptoms after controlling for self-esteem for girls, but not for boys. Girls in the current study appeared to be bothered by overt victimization more than boys while both boys and girls seemed to be hurt by relational victimization. The unique findings regarding gender differences highlight the importance of developing different interventions for boys and girls. For example, prevention and intervention programs should teach girls strategies to cope with overt victimization and internalizing symptoms.

The lack of change in the transition group in self-esteem and depressive symptoms in comparison to the increase in self-esteem and decrease in depressive symptoms among non-transition students suggests that the experience of school transition negatively impacts students' psycho-social adjustment. After controlling for students' grade level, overt victimization contributed to higher levels of anxiety symptoms for students who experienced school transition than for students who did not experience school transition. Furthermore, self-esteem was also found to mediate the relationship between relational victimization and anxiety symptoms for non-transition student but not for transition students. These results suggest that school transition might serve as an additional stressor for students who experience peer victimization. As a result, it is important to help students to ease into the new school environment and promote positive relationship in the new peer groups during school transition.

According to the author's knowledge, this is the first longitudinal study to examine the mediating and moderating role of self-esteem in the relationship between

two types of victimization and internalizing symptoms among adolescents. This study contributes to our knowledge of the reciprocal relationship between peer victimization and internalizing symptoms. The findings of this study enhanced our understanding of the complex peer victimization phenomena and the mediation role of self-esteem and the moderating role of self-esteem, gender, and school transition in the development of internalizing symptoms and peer victimization.

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Table 1.

Ethical Distribution of the Participants over Time (%)

Time	European American	African American	Latino /Hispanic	Asian	Middle Eastern	Native American	Eastern European	Bi-racial	Un-identified
1	74.6	5.2	4.4	3.9	1.1	1.1	0.5	6.4	2.7
2	75.9	5.7	4.5	3.8	1.3	1.0	0.4	5.3	2.1
3	78.0	5.1	3.7	3.6	1.1	0.8	1.0	5.2	1.4

Table 2

Factor Loading for Principal Axis Factoring with Oblimin Rotation of Peer Victimization

Item	Relational Victimization	Overt Victimization
How often does a kid try to keep others from liking you by saying mean things about you?	.87	
How often does a classmate tell lies about you to make other kids not like you anymore?	.86	
How often does a kid who is mad at you try to get back at you by not letting you be in their group anymore?	.65	
How often do other kids leave you out on purpose when it is time to play or do an activity?	.50	.17
How often does another kid say they won't like you unless you do what they want you to do?	.48	.19
How often does another kid yell at you and call you mean names?*	.40	.36
How often do you get hit by another kid at school?	-.11	.86
How often do you get pushed or shoved by another kid at school?		.76
How often does another kid kick you or pull your hair?	.13	.52
How often does another kid say they will beat you up if you don't do what they want you to do?	.29	.45

Note. * Item was not included in any parcels because of the double loading on both overt victimization and relational victimization factors.

Table 3

Factor Loading for Principal Axis Factoring with Oblimin Rotation of Children's Depression Inventory-Short (CDI-S)

Item	Factor Loading
I hate myself.	.75
I feel alone all the time.	.70
I am sad all the time.	.62
I feel like crying every day.	.62
Nothing will ever work out for me.	.56
I look ugly.	.55
Things bother me all the time.	.55
I do everything wrong.	.54
I do not have any friends.	.54
Nobody really loves me.	.53

Table 4

Factor Loading for Principal Axis Factoring with Oblimin Rotation of Multidimensional Anxiety Scale for Children-10 (*MASC-10)*

Item	Factor Loading
The idea of going away to camp scares me.	.52
I'm afraid that other kids will make fun of me.	.59
I try to stay near my mom or dad.	.53
I get dizzy or faint feelings	.59
I feel restless and on edge.	.56
I feel sick to my stomach.	.59
I get nervous if I have to perform in public.	.43
Bad weather, the dark, heights, animals, or bugs scare me.	.44
I check to make sure things are safe.	.31
I feel shy.	.53

Table 5

Factor Loading for Principal Axis Factoring with Oblimin Rotation of General Self Subscale in Self-description Questionnaire-I(SDQ-I)

Item	General-Self
A lot of things about me are good.	.76
Overall, I have a lot to be proud of.	.71
I am as good as most other people.	.69
I can do things as well as most other people.	.67
When I do something, I do it well	.63
Other people think I am a good person.	.63
In general I like being the way I am	.60
I do lots of important things	.52

Table 6

Mean, Standard Deviation (S.D.), Skewness, and Kurtosis of all Item Parcels

Parcel name	Mean	S.D.	Skewness	Kurtosis
SEQ_RP1T1	1.66	0.82	1.41	1.81
SEQ_RP2T1	1.75	0.83	1.23	1.39
SEQ_RP3T1	1.86	1.08	1.19	0.66
SEQ_RP1t2	1.69	0.87	1.37	1.50
SEQ_RP2t2	1.78	0.88	1.18	1.13
SEQ_RP3t2	1.87	1.08	1.13	0.53
SEQ_RP1T3	1.58	0.77	1.64	2.91
SEQ_RP2T3	1.67	0.81	1.32	1.58
SEQ_RP3T3	1.68	0.95	1.32	1.01
SEQ_OP1T1	1.48	0.71	2.02	4.90
SEQ_OP2T1	1.61	0.76	1.53	2.46
SEQ_OP1T2	1.61	0.79	1.69	3.19
SEQ_OP2T2	1.67	0.83	1.44	2.03
SEQ_OP1T3	1.55	0.73	1.69	3.24
SEQ_OP2T3	1.62	0.78	1.47	2.13
CDIP1T1	0.26	0.37	1.96	4.41
CDIP2T1	0.22	0.34	1.85	3.86
CDIP3T1	0.17	0.32	2.36	6.23
CDIP1T2	0.26	0.39	1.95	4.02
CDIP2T2	0.19	0.35	2.31	6.09
CDIP3T2	0.17	0.35	2.59	7.37
CDIP1T3	0.23	0.36	1.98	3.89
CDIP2T3	0.17	0.33	2.17	5.01
CDIP3T3	0.15	0.30	2.32	5.41

Parcel name	Mean	S.D.	Skewness	Kurtosis
MASCP1T1	1.22	0.64	0.10	-0.40
MASCP2T1	0.84	0.67	0.61	-0.21
MASCP3T1	1.04	0.69	0.51	-0.20
MASCP1T2	1.11	0.69	0.14	-0.64
MASCP2T2	0.79	0.68	0.66	-0.23
MASCP3T2	1.03	0.71	0.41	-0.26
MASCP1T3	1.04	0.69	0.27	-0.58
MASCP2T3	0.75	0.68	0.73	-0.17
MASCP3T3	0.95	0.72	0.54	-0.24
SDQP1T1	3.51	0.53	-1.42	2.77
SDQP2T1	3.36	0.52	-0.95	1.43
SDQP3T1	3.43	0.59	-1.00	1.03
SDQP1T2	3.49	0.52	-1.14	1.72
SDQP2T2	3.38	0.53	-1.06	1.66
SDQP3T2	3.45	0.60	-0.98	0.66
SDQP1T3	3.53	0.53	-1.20	1.61
SDQP2T3	3.43	0.54	-0.97	1.01
SDQP3T3	3.49	0.60	-1.16	1.37

Note. SEQ_R=Relational victimization subscale from Social Experiences Questionnaire. SEQ_O=Overt victimization subscale from Social Experiences Questionnaire. SDQ=General-Self subscale from Self-description Questionnaire-I. CDI= Children's Depression Inventory-Short. MASC= Multidimensional Anxiety Scale for Children-10. P=parcel. T= Time.

Table 7

Standardized Factor Loadings in the Final Measurement Model

	Estimate	S.E.	Est./S.E.	*p*-value
SEQ_OT1	BY			
SEQ_OP1T1	.82	0.02	51.04	< .001
SEQ_OP2T1	.81	0.02	49.52	< .001
SEQ_OT2	BY			
SEQ_OP1T2	.88	0.01	76.29	< .001
SEQ_OP2T2	.83	0.01	64.67	< .001
SEQ_OT3	BY			
SEQ_OP1T3	.85	0.01	65.45	< .001
SEQ_OP2T3	.86	0.01	66.77	< .001
SEQ_RT1	BY			
SEQ_RP1T1	.82	0.01	59.89	< .001
SEQ_RP2T1	.86	0.01	69.75	< .001
SEQ_RP3T1	.65	0.02	32.93	< .001
SEQ_RT2	BY			
SEQ_RP1T2	.89	0.01	92.76	< .001
SEQ_RP2T2	.86	0.01	80.27	< .001
SEQ_RP3T2	.65	0.02	33.35	< .001
SEQ_RT3	BY			
SEQ_RP1T3	.89	0.01	85.44	< .001
SEQ_RP2T3	.87	0.01	79.06	< .001
SEQ_RP3T3	.69	0.02	36.65	< .001
CDIT1	BY			
CDIP1T1	.81	0.01	61.57	< .001
CDIP2T1	.80	0.01	58.80	< .001

	Estimate	S.E.	Est./S.E.	*p*-value
CDIP3T1	.77	0.02	51.09	< .001
CDIT2	BY			
CDIP1T2	.84	0.01	70.43	< .001
CDIP2T2	.85	0.01	77.26	< .001
CDIP3T2	.84	0.01	70.59	< .001
CDIT3	BY			
CDIP1T3	.82	0.01	57.02	< .001
CDIP2T3	.84	0.01	63.53	< .001
CDIP3T3	.79	0.02	52.66	< .001
MASCT1	BY			
MASCP1T1	.82	0.02	49.16	< .001
MASCP2T1	.70	0.02	36.41	< .001
MASCP3T1	.66	0.02	32.12	< .001
MASCT2	BY			
MASCP1T2	.85	0.01	62.91	< .001
MASCP2T2	.77	0.02	48.35	< .001
MASCP3T2	.68	0.02	37.26	< .001
MASCT3	BY			
MASCP1T3	.82	0.02	50.71	< .001
MASCP2T3	.75	0.02	41.01	< .001
MASCP3T3	.71	0.02	36.17	< .001
SDQT1	BY			
SDQP1T1	.85	0.01	68.10	< .001
SDQP2T1	.77	0.02	50.59	< .001
SDQP3T1	.74	0.02	44.72	< .001
SDQT2	BY			

	Estimate	S.E.	Est./S.E.	*p*-value
SDQP1T2	.84	0.01	68.83	< .001
SDQP2T2	.81	0.01	60.69	< .001
SDQP3T2	.76	0.02	49.95	< .001
SDQT3	BY			
SDQP1T3	.89	0.01	81.34	< .001
SDQP2T3	.83	0.01	63.97	< .001
SDQP3T3	.80	0.01	56.93	< .001

Note. SEQ_R=Relational victimization subscale from Social Experiences Questionnaire. SEQ_O=Overt victimization subscale from Social Experiences Questionnaire. SDQ=General-Self subscale from Self-description Questionnaire-I. CDI= Children's Depression Inventory-Short. MASC= Multidimensional Anxiety Scale for Children-10. P=parcel. T= Time.

Table 8

Estimated Latent Variable Correlations among Victimization, Depressive Symptoms, Anxiety Symptoms, and Self-esteem

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. SEQ_OT1	1.00													
2. SEQ_OT2	.56													
3. SEQ_OT3	.41	.51												
4. SEQ_RT1	.68	.35	.29											
5. SEQ_RT2	.40	.80	.40	.51										
6. SEQ_RT3	.37	.36	.81	.44	.48									
7. CDIT1	.41	.28	.16	.48	.34	.25								
8. CDIT2	.20	.33	.16	.31	.43	.27	.66							
9. CDIT3	.22	.21	.38	.33	.32	.47	.49	.55						
10. MASCT1	.23	$.05^{+}$	$.05^{+}$	.40	.16	.15	.44	.25	.28					
11. MASCT2	.11**	.21	.10**	.23	.35	.17	.31	.36	.29	.67				
12. MASCT3	.11**	.15	.23	.25	.26	.31	.25	.27	.46	.57	.71			
13. SDQT1	-.28	-.23	-.13	-.34	-.26	-.16	-.69	-.46	-.32	-.27	-.21	-.13		
14. SDQT2	-.20	-.33	-.24	-.24	-.35	-.28	-.49	-.64	-.41	-.22	-.29	-.22	.69	
15. SDQT3	-.16	-.23	-.31	-.24	-.24	-.32	-.41	-.42	-.61	-.20	-.23	-.31	.54	.66

Note. $^{+}p < .10$, ** $p \leq .01$, all other *p*s < .001. SEQ_R=Relational victimization subscale from Social Experiences Questionnaire. SEQ_O=Overt victimization subscale from Social Experiences Questionnaire. SDQ=General-Self subscale from Self-description Questionnaire-I. CDI= Children's Depression Inventory-Short. MASC= Multidimensional Anxiety Scale for Children-10. T= Time.

Table 9

Relationship between Peer Victimization at Time 1 and Internalizing Symptoms at Time 2

	Estimate	S.E.	Est./S.E.	p-Value
CDIT2	ON			
SEQ_RT1	.33	0.05	6.39	<.001
SEQ_OT1	-.01	0.05	-0.22	.82
MASCT2	ON			
SEQ_RT1	.26	0.06	4.79	<.001
SEQ_OT1	-.08	0.06	-1.42	.16
SEQ_OT1	WITH			
SEQ_RT1	.68	0.02	29.59	<.001
MASCT2	WITH			
CDIT2	.30	0.03	8.69	<.001

Note. SEQ_R=Relational victimization subscale from Social Experiences Questionnaire. SEQ_O=Overt victimization subscale from Social Experiences Questionnaire. CDI= Children's Depression Inventory-Short. MASC= Multidimensional Anxiety Scale for Children-10. T= Time.

Table 10

Relationship between Peer Victimization at Time 2 and Internalizing Symptoms at Time 3

	Estimate	S.E.	Est./S.E.	p-Value
MASCT3	ON			
SEQ_RT2	.40	0.08	5.26	<.001
SEQ_OT2	-.20	0.08	-2.59	<.001
CDIT3	ON			
SEQ_RT2	.43	0.07	6.17	<.001
SEQ_OT2	-.15	0.07	-2.02	.04
SEQ_OT2	WITH			
SEQ_RT2	.80	0.02	48.17	<.001
MASCT3	WITH			
CDIT3	.38	0.04	10.65	<.001

Note. SEQ_R=Relational victimization subscale from Social Experiences Questionnaire. SEQ_O=Overt victimization subscale from Social Experiences Questionnaire. CDI= Children's Depression Inventory-Short. MASC= Multidimensional Anxiety Scale for Children-10. T= Time.

Table 11

Self-esteem as a Moderator between Victimization and Internalizing Symptoms

	Estimate	S.E.	Est./S.E.	p-Value
CDIT3	ON			
SEQ_RT2	.16	0.05	3.01	<.001
SEQ_OT2	-.12	0.06	-2.08	.04
SDQT2	-.22	0.03	-6.65	<.001
SEQ_RSDQT2	-.37	0.23	-1.59	.11
SEQ_OSDQT2	.29	0.25	1.15	.25
MASCT3	ON			
SEQ_RSDQT2	.26	0.06	4.07	<.001
SEQ_OSDQT2	-.19	0.07	-2.68	.01
SDQT2	-.13	0.05	-2.44	.02
REV2EST2	-.22	0.17	-1.32	.19
OV2EST2	.14	0.18	0.80	.42
SEQ_OT2	WITH			
SEQ_RT2	.44	0.04	11.94	<.001
MASCT3	WITH			
CDIT3	.04	0.01	4.94	<.001
SDQT2	WITH			
SEQ_RT2	-.13	0.02	-7.67	<.001
SEQ_OT2	-.10	0.02	-6.50	<.001

Note. SEQ_R=Relational victimization subscale from Social Experiences Questionnaire. SEQ_O=Overt victimization subscale from Social Experiences Questionnaire. SDQ=General-Self subscale from Self-description Questionnaire-I. CDI= Children's Depression Inventory-Short. MASC= Multidimensional Anxiety Scale for Children-10. SEQ_RSDQ=Interaction term between latent constructs SEQ_R and SDQ. SEQ_OSDQ=Interaction term between SEQ_O and SDQ. T= Time.

Table 12

Self-esteem as a Moderator between Relational Victimization and Internalizing Symptoms

	Estimate	S.E.	Est./S.E.	p-Value
CDIT3	ON			
SEQ_RT2	.07	0.02	4.37	<.001
SDQT2	-.21	0.03	-6.46	<.001
SEQ_RSDQ T2	-.12	0.05	-2.54	.01
MASCT3	ON			
SEQ_RT2	.14	0.03	4.26	<.001
SDQT2	-.12	0.05	-2.21	.03
SEQ_RSDQT2	-.09	0.07	-1.19	.23
MASCT3	WITH			
CDIT3	.05	0.01	7.40	<.001
SDQT2	WITH			
SEQ_RT2	-.12	0.02	-7.54	<.001

Note. SEQ_R=Relational victimization subscale from Social Experiences Questionnaire. SDQ=General-Self subscale from Self-description Questionnaire-I. CDI= Children's Depression Inventory-Short. MASC= Multidimensional Anxiety Scale for Children-10. SEQ_RSDQ=Interaction term between SEQ_R and SDQ. T= Time.

Table 13

Self-esteem as a Moderator between Overt Victimization and Internalizing Symptoms

	Estimate	S.E.	Est./S.E.	p-Value
CDIT3	ON			
SEQ_OT2	.03	0.02	1.53	.13
SDQT2	-.23	0.03	-8.32	<.001
SEQ_OSDQT2	-.10	0.04	-2.90	<.001
MASCT3	ON			
SEQ_OT2	.05	0.04	1.46	.15
SDQT2	-.17	0.05	-3.32	<.001
SEQ_OSDQT2	-.08	0.07	-1.17	.24
MASCT3	WITH			
CDIT3	.05	0.01	8.91	<.001
SDQT2	WITH			
SEQ_OT2	-.10	0.01	-8.32	<.001

Note. SEQ_O=Overt victimization subscale from Social Experiences Questionnaire. SDQ=General-Self subscale from Self-description Questionnaire-I. CDI= Children's Depression Inventory-Short. MASC= Multidimensional Anxiety Scale for Children-10. SEQ_OSDQ=Interaction term between SEQ_O and SDQ. T= Time.

Table 14

Self-esteem as a Moderator between Victimization and Internalizing Symptoms among Older Students

	Estimate	S.E.	Est./S.E.	p-Value
CDIT3	ON			
SEQ_RT2	.13	0.05	2.50	.01
SEQ_OT2	-.10	0.06	-1.77	.08
SDQT2	-.21	0.03	-6.20	<.001
SEQ_RSDQT2	-.34	0.24	-1.41	.16
SEQ_OSDQT2	.27	0.26	1.06	.29
MASCT3	ON			
SEQ_RT2	.26	0.07	3.92	<.001
SEQ_OT2	-.19	0.07	-2.57	.01
SDQT2	-.13	0.06	-2.32	.02
SEQ_RSDQT2	-.24	0.17	-1.36	.17
SEQ_OSDQT2	.17	0.19	0.89	.37
SEQ_OT2	WITH			
SEQ_RT2	.43	0.04	11.65	<.001
MASCT3	WITH			
CDIT3	.04	0.01	4.73	<.001
SDQT2	WITH			
SEQ_RSDQT2	-.12	0.02	-7.15	<.001
SEQ_OSDQT2	-.10	0.02	-5.96	<.001

Note. SEQ_R=Relational victimization subscale from Social Experiences Questionnaire. SEQ_O=Overt victimization subscale from Social Experiences Questionnaire. SDQ=General-Self subscale from Self-description Questionnaire-I. CDI= Children's Depression Inventory-Short. MASC= Multidimensional

Anxiety Scale for Children-10. SEQ_RSDQ=Interaction term between SEQ_R and SDQ. SEQ_OSDQ=Interaction term between SEQ_O and SDQ. T= Time.

Table 15

Self-esteem as a Moderator between Relational Victimization and Internalizing Symptoms among Older Students

	Estimate	S.E.	Est./S.E.	p-Value
CDIT3	ON			
SEQ_RT2	.05	0.02	3.38	<.001
SDQT2	-.20	0.03	-6.05	<.001
SEQ_RSDQT2	-.11	0.05	-2.24	.03
MASCT3	ON			
SEQ_RT2	.13	0.03	4.05	<.001
SDQT2	-.12	0.05	-2.17	.03
SEQ_RSDQT2	-.09	0.08	-1.20	.23
MASCT3	WITH			
CDIT3	.05	0.01	6.92	<.001
SDQT2	WITH			
SEQ_RT2	-.12	0.02	-7.05	<.001

Note. SEQ_R=Relational victimization subscale from Social Experiences Questionnaire. SDQ=General-Self subscale from Self-description Questionnaire-I. CDI= Children's Depression Inventory-Short. MASC= Multidimensional Anxiety Scale for Children-10. SEQ_RSDQ=Interaction term between SEQ_R and SDQ. T= Time.

Table 16

Self-esteem as a Moderator between Overt Victimization and Internalizing Symptoms among Older Students

	Estimate	S.E.	Est./S.E.	p-Value
CDIT3	ON			
SEQ_OT2	.02	0.02	1.18	.24
SDQT2	-.22	0.04	-6.18	<.001
SEQ_OSDQT2	-.08	0.04	-1.83	.07
MASCT3	ON			
SEQ_OT2	.05	0.04	1.17	.24
SDQT2	-.18	0.06	-3.19	<.001
SEQ_OSDQT2	-.06	0.08	-0.72	.47
MASCT3	WITH			
CDIT3	.05	0.01	7.28	<.001
SDQT2	WITH			
SEQ_OT2	-.10	0.02	-6.07	<.001

Note. SEQ_O=Overt victimization subscale from Social Experiences Questionnaire. SDQ=General-Self subscale from Self-description Questionnaire-I. CDI= Children's Depression Inventory-Short. MASC= Multidimensional Anxiety Scale for Children-10. SEQ_OSDQ=Interaction term between SEQ_O and SDQ. T= Time.

Table 17

Self-esteem as a Mediator between Victimization and Internalizing Symptoms

	Estimate	S.E.	Est./S.E.	p-Value
CDIT3	ON			
SEQ_RT1	.29	0.05	5.45	<.001
SEQ_OT1	-.05	0.06	-0.89	.38
SDQT2	-.33	0.04	-9.36	<.001
MASCT3	ON			
SEQ_RT1	.29	0.06	4.74	<.001
SEQ_OT1	-.11	0.06	-1.80	.07
SDQT2	-.15	0.04	-3.64	<.001
SDQT2	ON			
SEQ_RT1	-.20	0.05	-3.67	<.001
SEQ_OT1	-.07	0.06	-1.25	.21
SEQ_OT1	WITH			
SEQ_RT1	.68	0.02	29.56	<.001
MASCT3	WITH			
CDIT3	.39	0.04	10.70	<.001

Note. SEQ_R=Relational victimization subscale from Social Experiences Questionnaire. SEQ_O=Overt victimization subscale from Social Experiences Questionnaire. SDQ=General-Self subscale from Self-description Questionnaire-I. CDI= Children's Depression Inventory-Short. MASC= Multidimensional Anxiety Scale for Children-10. T= Time.

Table 18

Self-esteem as a Mediator between Overt Victimization and Internalizing Symptoms

	Estimate	S.E.	Est./S.E.	p-Value
CDIT3	ON			
SEQ_OT1	.14	0.04	3.74	<.001
SDQT2	-.37	0.04	-10.54	<.001
MASCT3	ON			
SEQ_OT1	.08	0.04	1.92	.06
SDQT2	-.19	0.04	-4.60	<.001
SDQT2	ON			
SEQ_OT1	-.20	0.04	-5.69	<.001
MASCT3	WITH			
CDIT3	.42	0.04	11.62	<.001

Note. SEQ_O=Overt victimization subscale from Social Experiences Questionnaire. SDQ=General-Self subscale from Self-description Questionnaire-I. CDI= Children's Depression Inventory-Short. MASC= Multidimensional Anxiety Scale for Children-10. T= Time.

Table 19

Self-esteem as a Mediator between Relational Victimization and Internalizing Symptoms

	Estimate	S.E.	Est./S.E.	p-Value
CDIT3	ON			
SEQ_RT1	.26	0.04	7.37	<.001
SDQT2	-.33	0.04	-9.32	<.001
MASCT3	ON			
SEQ_RT1	.22	0.04	5.42	<.001
SDQT2	-.15	0.04	-3.56	<.001
SDQT2	ON			
SEQ_RT1	-.24	0.03	-7.31	<.001
MASCT3	WITH			
CDIT3	.39	0.04	10.78	<.001

Note. SEQ_R=Relational victimization subscale from Social Experiences Questionnaire. SDQ=General-Self subscale from Self-description Questionnaire-I. CDI= Children's Depression Inventory-Short. MASC= Multidimensional Anxiety Scale for Children-10. T= Time.

Table 20

Self-esteem as a Mediator between Peer Victimization and Internalizing Symptoms among Sixth to Ninth Graders

	Estimate	S.E.	Est./S.E.	p-Value
CDIT3	ON			
SEQ_RT1	.26	0.06	4.50	<.001
SEQ_OT1	-.05	0.06	-0.90	.37
SDQT2	-.33	0.04	-8.74	<.001
MASCT3	ON			
SEQ_RT1	.24	0.06	3.94	<.001
SEQ_OT1	-.09	0.06	-1.39	.16
SDQT2	-.16	0.04	-3.80	<.001
SDQT2	ON			
SEQ_RT1	-.20	0.06	-3.61	<.001
SEQ_OT1	-.06	0.06	-1.12	.26
SEQ_OT1	WITH			
SEQ_RT1	.67	0.02	27.53	<.001
MASCT3	WITH			
CDIT3	.39	0.04	10.27	<.001

Note. SEQ_R=Relational victimization subscale from Social Experiences Questionnaire. SEQ_O=Overt victimization subscale from Social Experiences Questionnaire. SDQ=General-Self subscale from Self-description Questionnaire-I. CDI= Children's Depression Inventory-Short. MASC= Multidimensional Anxiety Scale for Children-10. T= Time.

Table 21

Self-esteem as a Mediator between Peer Victimization and Internalizing Symptoms among Fifth Graders

	Estimate	S.E.	Est./S.E.	p-Value
CDIT3	ON			
SEQ_RT1	.42	0.17	2.42	.02
SEQ_OT1	.07	0.18	0.38	.71
SDQT2	-.35	0.10	-3.35	.00
MASCT3	ON			
SEQ_RT1	.45	0.20	2.24	.03
SEQ_OT1	-.06	0.21	-0.27	.79
SDQT2	-.04	0.13	-0.33	.74
SDQT2	ON			
SEQ_RT1	-.18	0.21	-0.88	.38
SEQ_OT1	-.14	0.20	-0.70	.48
SEQ_OT1	WITH			
SEQ_RT1	.71	0.08	9.52	.00
MASCT3	WITH			
CDIT3	.40	0.14	2.96	.00

Note. SEQ_R=Relational victimization subscale from Social Experiences Questionnaire. SEQ_O=Overt victimization subscale from Social Experiences Questionnaire. SDQ=General-Self subscale from Self-description Questionnaire-I. CDI= Children's Depression Inventory-Short. MASC= Multidimensional Anxiety Scale for Children-10. T= Time.

Table 22

Gender Comparison for Relational Victimization, Self-esteem, Depressive Symptoms, and Anxiety Symptoms

	Estimate	S.E.	Est./S.E.	p-Value		Estimate	S.E.	Est./S.E.	p-Value
GIRL					BOY				
CDIT3	ON				CDIT3	ON			
SEQ_RT1	.29	0.05	6.34	< .001	SEQ_RT1	.22	0.06	3.82	< .001
SDQT2	-.36	0.05	-7.63	< .001	SDQT2	-.33	0.05	-6.05	< .001
MASCT3	ON				MASCT3	ON			
SEQ_RT1	.19	0.05	3.65	< .001	SEQ_RT1	.25	0.06	4.37	< .001
SDQT2	-.12	0.06	-2.05	0.04	SDQT2	-.16	0.06	-2.76	.01
SDQT2	ON				SDQT2	ON			
SEQ_RT1	-.28	0.04	-6.37	< .001	SEQ_RT1	-.21	0.05	-4.04	< .001
MASCT3	WITH				MASCT3	WITH			
CDIT3	.36	0.05	7.25	< .001	CDIT3	.35	0.06	6.13	< .001

Note. SEQ_R=Relational victimization subscale from Social Experiences Questionnaire. SDQ=General-Self subscale from Self-description Questionnaire-I. CDI= Children's Depression Inventory-Short. MASC= Multidimensional Anxiety Scale for Children-10. T= Time.

Table 23

Gender Comparison for Overt Victimization, Self-esteem, Depressive Symptoms, and Anxiety Symptoms

	Estimate	S.E.	Est./S.E.	p-Value		Estimate	S.E.	Est./S.E.	p-Value
GIRL					BOY				
CDIT3	ON				CDIT3	ON			
SEQ_OT1	.23	0.05	4.28	< .001	SEQ_OT1	.14	0.05	2.54	.01
SDQT2	-.38	0.05	-8.06	< .001	SDQT2	-.36	0.05	-6.73	<.001
MASCT3	ON				MASCT3	ON			
SEQ_OT1	.16	0.06	2.55	.01	SEQ_OT1	.09	0.06	1.66	.10
SDQT2	-.13	0.06	-2.33	.02	SDQT2	-.21	0.06	-3.57	<.001
SDQT2	ON				SDQT2	ON			
SEQ_OT1	-.29	0.05	-5.96	<.001	SEQ_OT1	-.13	0.05	-2.59	.01
MASCT3	WITH				MASCT3	WITH			
CDIT3	.38	0.05	7.69	<.001	CDIT3	.37	0.06	6.76	<.001

Note. SEQ_O=Overt victimization subscale from Social Experiences Questionnaire. SDQ=General-Self subscale from Self-description Questionnaire-I. CDI= Children's Depression Inventory-Short. MASC= Multidimensional Anxiety Scale for Children-10. T= Time.

Table 24

Comparison for Relational Victimization, Self-esteem, Depressive Symptoms, and Anxiety Symptoms among Transition Groups

	Estimate	S.E.	Est./S.E.	p-Value		Estimate	S.E.	Est./S.E.	p-Value
Non-transition					Transition				
CDIT3	ON				CDIT3	ON			
SEQ_RT1	.24	0.04	5.43	<.001	SEQ_RT1	.30	0.06	4.95	<.001
SDQT2	-.26	0.04	-5.87	<.001	SDQT2	-.46	0.06	-7.95	<.001
MASCT3	ON				MASCT3	ON			
SEQ_RT1	.20	0.05	4.29	<.001	SEQ_RT1	.26	0.06	3.56	<.001
SDQT2	-.13	0.05	-2.68	.01	SDQT2	-.10	0.08	-1.30	.19
SDQT2	ON				SDQT2	ON			
SEQ_RT1	-.24	0.04	-5.78	<.001	SEQ_RT1	-.26	0.06	-4.41	<.001
MASCT3	WITH				MASCT3	WITH			
CDIT3	.33	0.04	7.78	<.001	CDIT3	.44	0.07	6.39	<.001

Note. SEQ_R=Relational victimization subscale from Social Experiences Questionnaire. SDQ=General-Self subscale from Self-description Questionnaire-I. CDI= Children's Depression Inventory-Short. MASC= Multidimensional Anxiety Scale for Children-10. T= Time.

Table 25

Comparison for Overt Victimization, Self-esteem, Depressive Symptoms, and Anxiety Symptoms among Transition Groups

	Estimate	S.E.	Est./S.E.	*p*		Estimate	S.E.	Est./S.E.	*p*
Non-transition					Transition				
CDIT3	ON				CDIT3	ON			
SEQ_OT1	.14	0.04	3.01	<.001	SEQ_OT1	.19	0.07	2.84	<.01
SDQT2	-.29	0.04	-6.58	<.001	SDQT2	-.51	0.06	-9.03	<.001
MASCT3	ON				MASCT3	ON			
SEQ_OT1	.04	0.05	0.81	.42	SEQ_O1	.14	0.08	1.80	.07
SDQT2	-.17	0.05	-3.53	<.001	SDQT2	-.15	0.08	-1.93	.053
SDQT2	ON				SDQT2	ON			
SEQ_OT1	.19	0.04	-4.34	<.001	SEQ_O1	-.22	0.06	-3.50	<.001
MASCT3	WITH				MASCT3	WITH			
CDIT3	.36	0.04	8.66	<.001	CDIT3	.47	0.07	7.15	<.001

Note. SEQ_O=Overt victimization subscale from Social Experiences Questionnaire. SDQ=General-Self subscale from Self-description Questionnaire-I. CDI= Children's Depression Inventory-Short. MASC= Multidimensional Anxiety Scale for Children-10. T= Time.

Table 26

Hypothesized Model on the Reciprocal Relationship between Peer Victimization and Depressive Symptoms

	Estimate	S.E.	Est./S.E.	*p* Value
CDIT3	ON			
SEQ_RT2	.21	0.06	3.33	<.001
SEQ_OT2	-.12	0.06	-1.92	.05
CDIT2	.41	0.04	9.59	<.001
SDQT2	-.09	0.04	-2.16	.03
CDIT2	ON			
SEQ_RT1	.13	0.05	2.72	.01
SEQ_OT1	-.15	0.05	-3.23	<.001
CDIT1	.59	0.04	13.61	<.001
SDQT1	-.05	0.04	-1.16	.25
SDQT2	ON			
SDQT1	.64	0.03	25.55	<.001
SEQ_RT1	-.05	0.05	-1.15	.25
SEQ_OT1	.02	0.05	0.51	.61
SDQT3	ON			
SDQT2	.62	0.03	21.96	<.001
SEQ_RT2	-.07	0.06	-1.14	.25
SEQ_OT2	.03	0.06	0.57	.57
SEQ_RT2	ON			
SEQ_RT1	.46	0.03	15.23	<.001
CDIT1	.12	0.04	3.31	<.001
SEQ_OT2	ON			

	Estimate	S.E.	Est./S.E.	*p* Value
SEQ_OT1	.47	0.03	15.48	<.001
CDIT1	.08	0.04	2.40	.02
SEQ_RT3	ON			
SEQ_RT2	.44	0.03	14.00	<.001
CDIT2	.08	0.04	2.02	.04
SEQ_OT3	ON			
SEQ_OT2	.52	0.03	17.44	<.001
CDIT2	-.01	0.04	-0.27	.79
SEQ_RT2	WITH			
SEQ_OT2	.81	0.02	41.39	<.001
CDIT2	.32	0.04	9.24	<.001
SDQT2	-.27	0.04	-7.61	<.001
SEQ_OT2	WITH			
CDIT2	.28	0.04	7.43	<.001
SDQT2	-.29	0.04	-7.81	<.001
CDIT2	WITH			
SDQT2	-.56	0.03	-18.84	<.001
SEQ_OT1	WITH			
SEQ_RT1	.69	0.02	30.85	<.001
SEQ_OT3	WITH			
SEQ_RT3	.82	0.02	41.28	<.001
CDIT1	WITH			
SEQ_RT1	.48	0.03	17.06	<.001
SEQ_OT1	.41	0.03	13.02	<.001
CDIT3	WITH			
SEQ_RT3	.39	0.04	11.18	<.001

	Estimate	S.E.	Est./S.E.	*p* Value
SEQ_OT3	.37	0.04	9.98	<.001
SDQT1	WITH			
SEQ_RT1	-.34	0.03	-10.90	<.001
SEQ_OT1	-.29	0.03	-8.57	<.001
CDIT1	-.69	0.02	-32.18	<.001
SDQT3	WITH			
SEQ_RT3	-.21	0.04	-5.51	<.001
SEQ_OT3	-.25	0.04	-6.39	<.001
CDIT3	-.52	0.03	-16.31	<.001

Note. SEQ_R=Relational victimization subscale from Social Experiences Questionnaire. SEQ_O=Overt victimization subscale from Social Experiences Questionnaire. SDQ=General-Self subscale from Self-description Questionnaire-I. CDI= Children's Depression Inventory-Short. MASC= Multidimensional Anxiety Scale for Children-10. T= Time.

Table 27

Hypothesized Model on the Reciprocal Relationship between Overt Victimization and Depressive Symptoms

	Estimate	S.E.	Est./S.E.	p-Value
CDIT3	ON			
SEQ_OT2	.04	0.04	1.23	.22
CDIT2	.45	0.04	10.92	<.001
SDQT2	-.10	0.04	-2.32	.02
CDIT2	ON			
SEQ_OT1	-.05	0.03	-1.61	.11
CDIT1	.61	0.04	14.50	<.001
SDQT1	-.05	0.04	-1.20	.23
SDQT2	ON			
SDQT1	.65	0.02	26.81	<.001
SEQ_OT1	-.02	0.03	-0.57	.57
SDQT3	ON			
SDQT2	.62	0.03	22.87	<.001
SEQ_OT2	-.02	0.03	-0.63	.53
SEQ_OT2	ON			
SEQ_OT1	.52	0.03	15.62	<.001
CDIT1	.07	0.04	1.82	.07
SEQ_OT3	ON			
SEQ_OT2	.53	0.03	15.86	<.001
CDIT2	-.01	0.04	-0.23	.82
SEQ_OT2	WITH			
CDIT2	.27	0.04	7.30	<.001

	Estimate	S.E.	Est./S.E.	*p* Value
SDQT2	-.30	0.04	-7.89	<.001
CDIT2	WITH			
SDQT2	-.56	0.03	-18.92	<.001
CDIT1	WITH			
SEQ_OT1	.40	0.03	12.51	<.001
CDIT3	WITH			
SEQ_OT3	.37	0.04	9.90	<.001
SDQT1	WITH			
SEQ_OT1	-.29	0.03	-8.60	<.001
CDIT1	-.69	0.02	-32.15	<.001
SDQT3	WITH			
SEQ_OT3	-.24	0.04	-6.21	<.001
CDIT3	-.52	0.03	-16.40	<.001

Note. SEQ_O=Overt victimization subscale from Social Experiences Questionnaire. SDQ=General-Self subscale from Self-description Questionnaire-I. CDI= Children's Depression Inventory-Short. MASC= Multidimensional Anxiety Scale for Children-10. T= Time.

Table 28

Hypothesized Model on the Reciprocal Relationship between Relational Victimization and Depressive Symptoms

	Estimate	S.E.	Est./S.E.	p-Value
CDIT3	ON			
SEQ_RT2	.11	0.04	3.09	<.001
CDIT2	.42	0.04	9.84	<.001
SDQT2	-.09	0.04	-2.06	.04
CDIT2	ON			
SEQ_RT1	.03	0.03	0.92	.36
CDIT1	.57	0.04	13.29	<.001
SDQT1	-.05	0.04	-1.27	.20
SDQT2	ON			
SDQT1	.64	0.03	25.61	<.001
SEQ_RT1	-.03	0.03	-1.02	.31
SDQT3	ON			
SDQT2	.62	0.03	22.14	<.001
SEQ_RT2	-.03	0.03	-1.03	.30
SEQ_RT2	ON			
SEQ_RT1	.45	0.04	12.85	<.001
CDIT1	.13	0.04	3.48	<.001
SEQ_RT3	ON			
SEQ_RT2	.44	0.04	12.46	<.001
CDIT2	.08	0.04	2.00	.05
SEQ_RT2	WITH			
CDIT2	.31	0.04	9.07	<.001

	Estimate	S.E.	Est./S.E.	*p* Value
SDQT2	-.28	0.04	-7.62	<.001
CDIT2	WITH			
SDQT2	-.56	0.03	-18.89	<.001
CDIT1	WITH			
SEQ_RT1	.48	0.03	17.08	<.001
CDIT3	WITH			
SEQ_RT3	.39	0.03	11.41	<.001
SDQT1	WITH			
SEQ_RT1	-.35	0.03	-11.09	<.001
CDIT1	-.69	0.02	-32.15	<.001

Note. SEQ_R=Relational victimization subscale from Social Experiences Questionnaire. SDQ=General-Self subscale from Self-description Questionnaire-I. CDI= Children's Depression Inventory-Short. MASC= Multidimensional Anxiety Scale for Children-10. T= Time.

Table 29

Model Comparison on the Reciprocal Relationship between Peer Victimization and Depressive Symptoms

Models	χ^2	df	CIF	TLI	RMSEA	SRMR	$\Delta\chi^2$	Δdf	*p*
Hypothesized	974.65	422	0.98	0.97	0.03	0.04			
Delete four paths	978.24	426	0.98	0.97	0.03	0.04	3.59	4	.46
Delete five paths	978.32	427	0.98	0.97	0.03	0.04	0.08	1	.78
Delete six paths	979.97	428	0.98	0.97	0.03	0.04	1.65	1	.20
Delete seven paths	983.35	429	0.98	0.97	0.03	0.04	3.38	1	.07
Add SDQ2	977.29	427	0.98	0.97	0.03	0.04	6.06	*2*	.05
Add T1 variables	907.31	423	0.98	0.97	0.03	0.03	69.98	4	<.001
Delete non-significant path	908.23	424	0.98	0.97	0.03	0.03	0.92	1	.34

Note. $\Delta\chi^2 = \chi^2$ (in the current model) - χ^2(in the previous model). *P*= *p* value of the chi-square difference test.

Table 30

Hypothesized Model on the Reciprocal Relationship between Peer Victimization and Depressive Symptoms (Modified)

	Estimate	S.E.	Est./S.E.	p-Value
CDIT3	ON			
SEQ_RT2	.09	0.03	2.80	.01
CDIT2	.43	0.04	10.45	<.001
SDQT2	-.09	0.04	-2.09	.04
CDIT2	ON			
SEQ_RT1	.11	0.04	2.50	.01
SEQ_OT1	-.14	0.04	-3.44	<.001
CDIT1	.63	0.03	22.28	<.001
SDQT2	ON			
SDQT1	.65	0.02	29.98	<.001
SDQT3	ON			
SDQT2	.63	0.02	26.20	<.001
SEQ_RT2	ON			
SEQ_RT1	.46	0.03	15.14	<.001
CDIT1	.11	0.04	3.24	<.001
SEQ_OT2	ON			
SEQ_OT1	.47	0.03	15.44	<.001
CDIT1	.08	0.04	2.41	.02
SEQ_RT3	ON			
SEQ_RT2	.44	0.03	14.37	<.001
CDIT2	.08	0.03	2.82	.01
SEQ_OT3	ON			

	Estimate	S.E.	Est./S.E.	p-Value
SEQ_OT2	.51	0.03	18.96	<.001
SEQ_RT2	WITH			
SEQ_OT2	.80	0.02	41.32	<.001
CDIT2	.32	0.04	9.33	<.001
SDQT2	-.28	0.04	-7.90	<.001
SEQ_OT2	WITH			
CDIT2	.27	0.04	7.35	<.001
SDQT2	-.29	0.04	-7.93	<.001
CDIT2	WITH			
SDQT2	-.57	0.03	-19.21	<.001
SEQ_OT1	WITH			
SEQ_RT1	.69	0.02	30.80	<.001
SEQ_OT3	WITH			
SEQ_RT3	.82	0.02	41.36	<.001
CDIT1	WITH			
SEQ_RT1	.48	0.03	17.02	<.001
SEQ_OT1	.41	0.03	13.08	<.001
CDIT3	WITH			
SEQ_RT3	.39	0.03	11.31	<.001
SEQ_OT3	.36	0.04	9.82	<.001
SDQT1	WITH			
SEQ_RT1	-.35	0.03	-11.10	<.001
SEQ_OT1	-.29	0.03	-8.59	<.001
CDIT1	-.70	0.02	-33.15	<.001
SDQT3	WITH			
SEQ_RT3	-.21	0.04	-5.56	<.001

	Estimate	S.E.	Est./S.E.	p-Value
SEQ_OT3	-.25	0.04	-6.34	<.001
CDIT3	-.52	0.03	-16.40	<.001

Note. SEQ_R=Relational victimization subscale from Social Experiences Questionnaire. SEQ_O=Overt victimization subscale from Social Experiences Questionnaire. SDQ=General-Self subscale from Self-description Questionnaire-I. CDI= Children's Depression Inventory-Short. T= Time.

Table 31

Final Model on the Reciprocal Relationship between Peer Victimization and Depressive Symptoms

	Estimate	S.E.	Est./S.E.	p-Value
CDIT3 ON				
SEQ_RT2	.07	0.03	2.20	.03
CDIT2	.31	0.05	6.44	.00
SDQT2	-.10	0.04	-2.30	.02
CDIT1	.20	0.04	4.76	.00
CDIT2 ON				
SEQ_RT1	.11	0.04	2.45	.01
SEQ_OT1	-.15	0.04	-3.51	<.001
CDIT1	.63	0.03	21.90	<.001
SDQT2 ON				
SDQT1	.63	0.02	28.27	<.001
SDQT3 ON				
SDQT2	.48	0.04	12.64	<.001
SDQT1	.22	0.04	5.67	<.001
SEQ_RT2 ON				
SEQ_RT1	.44	0.03	14.35	<.001
CDIT1	.12	0.04	3.35	<.001
SEQ_OT2 ON				
SEQ_OT1	.47	0.03	15.07	<.001
CDIT1	.08	0.04	2.41	.02
SEQ_RT3 ON				
SEQ_RT2	.31	0.04	8.61	<.001
SDQT2	-.12	0.04	-3.24	<.001

	Estimate	S.E.	Est./S.E.	p-Value
SEQ_RT1	.22	0.04	6.17	<.001
SEQ_OT3 ON				
SEQ_OT2	.42	0.04	10.93	<.001
SDQT2	-.08	0.04	-2.24	.03
SEQ_OT1	.12	0.04	3.09	<.001
SEQ_RT2 WITH				
SEQ_OT2	.80	0.02	40.29	<.001
CDIT2	.33	0.03	9.48	<.001
SDQT2	-.27	0.04	-7.66	<.001
SEQ_OT2 WITH				
CDIT2	.27	0.04	7.24	<.001
SDQT2	-.28	0.04	-7.55	<.001
CDIT2 WITH				
SDQT2	-.56	0.03	-18.99	<.001
SEQ_OT1 WITH				
SEQ_RT1	.69	0.02	31.26	<.001
SEQ_OT3 WITH				
SEQ_RT3	.81	0.02	39.66	<.001
CDIT1 WITH				
SEQ_RT1	.48	0.03	17.14	<.001
SEQ_OT1	.41	0.03	13.04	<.001
CDIT3 WITH				
SEQ_RT3	.38	0.04	10.85	<.001
SEQ_OT3	.35	0.04	9.56	<.001
SDQT1 WITH				
SEQ_RT1	-.35	0.03	-11.06	<.001

	Estimate	S.E.	Est./S.E.	p-Value
SEQ_OT1	-.29	0.03	-8.63	<.001
CDIT1	-.70	0.02	-33.29	<.001
SDQT3 WITH				
SEQ_RT3	-.21	0.04	-5.44	<.001
SEQ_OT3	-.25	0.04	-6.38	<.001
CDIT3	-.52	0.03	-16.26	<.001

Note. SEQ_R=Relational victimization subscale from Social Experiences Questionnaire. SEQ_O=Overt victimization subscale from Social Experiences Questionnaire. SDQ=General-Self subscale from Self-description Questionnaire-I. CDI= Children's Depression Inventory-Short. T= Time.

Table 32

Hypothesized Model on the Reciprocal Relationship between Peer Victimization and Anxiety Symptoms

	Estimate	S.E.	Est./S.E.	p-Value
MASCT3	ON			
SEQ_RT2	.12	0.06	1.85	.07
SEQ_OT2	-.09	0.06	-1.47	.14
MASCT2	.60	0.03	19.81	<.001
SDQT2	.02	0.04	0.41	.68
MASCT2	ON			
SEQ_RT1	.01	0.05	0.19	.85
SEQ_OT1	-.08	0.05	-1.69	.09
MASCT1	.65	0.03	22.33	<.001
SDQT1	-.02	0.03	-0.57	.57
SDQT2	ON			
SDQT1	.62	0.03	24.08	<.001
SEQ_RT1	-.05	0.05	-1.11	.27
SEQ_OT1	.02	0.05	0.44	.66
SDQT3	ON			
SDQT2	.61	0.03	21.80	<.001
SEQ_RT2	-.06	0.06	-1.12	.26
SEQ_OT2	.04	0.06	0.65	.52
SEQ_RT2	ON			
SEQ_RT1	.53	0.03	18.32	<.001
MASCT1	-.06	0.04	-1.73	.08
SEQ_OT2	ON			

	Estimate	S.E.	Est./S.E.	p-Value
SEQ_OT1	.54	0.03	19.16	<.001
MASCT1	-.11	0.04	-3.12	<.001
SEQ_RT3	ON			
SEQ_RT2	.47	0.03	16.28	<.001
MASCT2	.01	0.04	0.13	.90
SEQ_OT3	ON			
SEQ_OT2	.52	0.03	18.69	<.001
MASCT2	-.02	0.04	-0.52	.61
SEQ_RT2	WITH			
SEQ_OT2	.82	0.02	41.77	<.001
MASCT2	.38	0.04	10.58	<.001
SDQT2	-.29	0.04	-8.12	<.001
SEQ_OT2	WITH			
MASCT2	.32	0.04	8.21	<.001
SDQT2	-.30	0.04	-8.14	<.001
MASCT2	WITH			
SDQT2	-.22	0.04	-5.44	<.001
SEQ_OT1	WITH			
SEQ_RT1	.70	0.02	31.90	<.001
SEQ_OT3	WITH			
SEQ_RT3	.82	0.02	40.96	<.001
MASCT1	WITH			
SEQ_RT1	.38	0.03	11.79	<.001
SEQ_OT1	.24	0.04	6.41	<.001
MASCT3	WITH			
SEQ_RT3	.25	0.04	6.25	<.001

	Estimate	S.E.	Est./S.E.	p-Value
SEQ_OT3	.24	0.04	5.78	<.001
SDQT1	WITH			
SEQ_RT1	-.34	0.03	-10.61	<.001
SEQ_OT1	-.28	0.03	-8.44	<.001
MASCT1	-.26	0.04	-7.21	<.001
SDQT3	WITH			
SEQ_RT3	-.21	0.04	-5.41	<.001
SEQ_OT3	-.25	0.04	-6.34	<.001
MASCT3	-.24	0.04	-5.83	<.001

Note. SEQ_R=Relational victimization subscale from Social Experiences Questionnaire. SEQ_O=Overt victimization subscale from Social Experiences Questionnaire. SDQ=General-Self subscale from Self-description Questionnaire-I. MASC= Multidimensional Anxiety Scale for Children-10. T= Time.

Table 33

Hypothesized Model on the Reciprocal Relationship between Peer Victimization and Anxiety Symptoms (Modified)

	Estimate	S.E.	Est./S.E.	p-Value
MASCT3	ON			
MASCT2	.62	0.03	24.43	<.001
MASCT2	ON			
MASCT1	.64	0.03	26.00	<.001
SDQT2	ON			
SDQT1	.64	0.02	28.16	<.001
SDQT3	ON			
SDQT2	.62	0.02	25.67	<.001
SEQ_RT2	ON			
SEQ_RT1	.53	0.03	19.13	<.001
MASCT1	-.07	0.04	-1.98	.05
SEQ_OT2	ON			
SEQ_OT1	.54	0.03	19.61	<.001
MASCT1	-.11	0.03	-3.29	<.001
SEQ_RT3	ON			
SEQ_RT2	.47	0.03	18.05	<.001
SEQ_OT3	ON			
SEQ_OT2	.51	0.03	19.26	<.001
SEQ_RT2	WITH			
SEQ_OT2	.81	0.02	41.68	<.001
MASCT2	.38	0.04	10.75	<.001
SDQT2	-.30	0.04	-8.36	<.001

	Estimate	S.E.	Est./S.E.	p-Value
SEQ_OT2	WITH			
MASCT2	.31	0.04	7.96	<.001
SDQT2	-.30	0.04	-8.26	<.001
MASCT2	WITH			
SDQT2	-.22	0.04	-5.52	<.001
SEQ_OT1	WITH			
SEQ_RT1	.70	0.02	32.11	<.001
SEQ_OT3	WITH			
SEQ_RT3	.82	0.02	40.98	<.001
MASCT1	WITH			
SEQ_RT1	.38	0.03	11.64	<.001
SEQ_OT1	.23	0.04	6.20	<.001
MASCT3	WITH			
SEQ_RT3	.25	0.04	6.36	<.001
SEQ_OT3	.23	0.04	5.62	<.001
SDQT1	WITH			
SEQ_RT1	-.34	0.03	-10.80	<.001
SEQ_OT1	-.29	0.03	-8.55	<.001
MASCT1	-.26	0.04	-7.30	<.001
SDQT3	WITH			
SEQ_RT3	-.21	0.04	-5.48	<.001
SEQ_OT3	-.25	0.04	-6.28	<.001
MASCT3	-.24	0.04	-5.90	<.001

Note. SEQ_R=Relational victimization subscale from Social Experiences Questionnaire. SEQ_O=Overt victimization subscale from Social Experiences Questionnaire. SDQ=General-Self subscale from Self-description Questionnaire-I. CDI= Children's Depression Inventory-Short. MASC= Multidimensional Anxiety Scale for Children-10. T= Time.

Table 34

Model Comparison on the Reciprocal Relationship between Peer Victimization and Depressive Symptoms

Model	χ^2	df	CIF	TLI	RMSEA	SRMR	$\Delta\chi^2$	Δdf	*p*
Hypothesized	933.96	422	0.97	0.97	0.03	0.05			
Delete all non-significant paths	946.83	434	0.97	0.97	0.03	0.05	12.87	12	.38
ADD SDQ	924.39	430	0.98	0.97	0.03	0.04	22.44	4	<.001
ADD T1 TO T3	852.09	426	0.98	0.97	0.03	0.04	72.30	4	<.001

Note. $\Delta\chi^2 = \chi^2$ (in the current model) - χ^2(in the previous model). *p*= *p* value of the chi-square difference test.

Table 35

Final Model on the Reciprocal Relationship between Peer Victimization and Anxiety Symptoms

	Estimate	S.E.	Est./S.E.	p-Value
MASCT3	ON			
MASCT2	.52	0.04	12.64	<.001
MASCT1	.16	0.05	3.56	<.001
MASCT2	ON			
MASCT1	.63	0.03	25.37	<.001
SDQT2	ON			
SDQT1	.63	0.02	27.82	<.001
SDQT3	ON			
SDQT2	.48	0.04	12.40	<.001
SDQT1	.22	0.04	5.36	<.001
SEQ_RT2	ON			
SEQ_RT1	.50	0.03	16.73	<.001
MASCT1	-.09	0.04	-2.41	.02
SDQT1	-.10	0.03	-2.89	<.001
SEQ_OT2	ON			
SEQ_OT1	.51	0.03	17.52	<.001
MASCT1	-.13	0.04	-3.79	<.001
SDQT1	-.11	0.03	-3.23	<.001
SEQ_RT3	ON			
SEQ_RT2	.30	0.04	8.23	<.001
SDQT2	-.11	0.04	-3.18	<.001
SEQ_RT1	.23	0.04	6.39	<.001

	Estimate	S.E.	Est./S.E.	p-Value
SEQ_OT3	ON			
SEQ_OT2	.40	0.04	10.39	<.001
SEQ_OT1	.13	0.04	3.31	<.001
SEQ_RT2	WITH			
SEQ_OT2	.80	0.02	39.96	<.001
MASCT2	.38	0.04	10.59	<.001
SDQT2	-.28	0.04	-7.77	<.001
SEQ_OT2	WITH			
MASCT2	.30	0.04	7.76	<.001
SDQT2	-.28	0.04	-7.68	<.001
MASCT2	WITH			
SDQT2	-.21	0.04	-5.33	<.001
SEQ_OT1	WITH			
SEQ_RT1	.70	0.02	32.15	<.001
SEQ_OT3	WITH			
SEQ_RT3	.81	0.02	39.53	<.001
MASCT1	WITH			
SEQ_RT1	.38	0.03	11.73	<.001
SEQ_OT1	.23	0.04	6.18	<.001
MASCT3	WITH			
SEQ_RT3	.23	0.04	5.87	<.001
SEQ_OT3	.22	0.04	5.41	<.001
SDQT1	WITH			
SEQ_RT1	-.34	0.03	-10.61	<.001
SEQ_OT1	-.28	0.03	-8.27	<.001
MASCT1	-.26	0.04	-7.48	<.001

	Estimate	S.E.	Est./S.E.	p-Value
SDQT3	WITH			
SEQ_RT3	-.20	0.04	-5.31	<.001
SEQ_OT3	-.24	0.04	-6.27	<.001
MASCT3	-.24	0.04	-6.06	<.001

Note. SEQ_R=Relational victimization subscale from Social Experiences Questionnaire. SEQ_O=Overt victimization subscale from Social Experiences Questionnaire. SDQ=General-Self subscale from Self-description Questionnaire-I. MASC= Multidimensional Anxiety Scale for Children-10. T= Time.

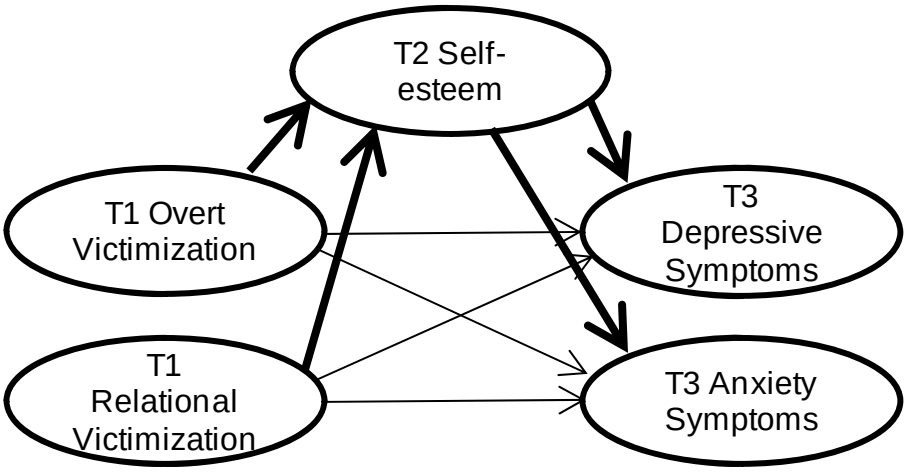

Figure 1. Proposed moderation model for hypothesis two

All variables at same time point were allowed to correlate with each other. Those correlations are not shown for clarity of presentation.

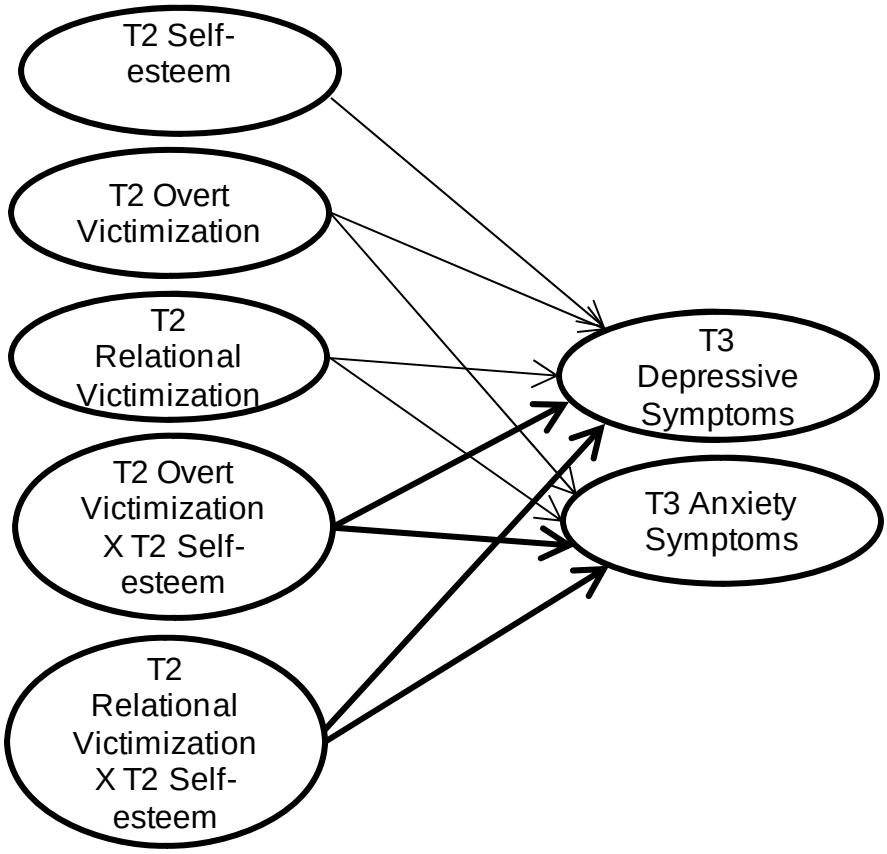

Figure 2. Proposed mediation model for hypothesis three

All variables at same time point were allowed to correlate with each other. Those correlations are not shown for clarity of presentation.

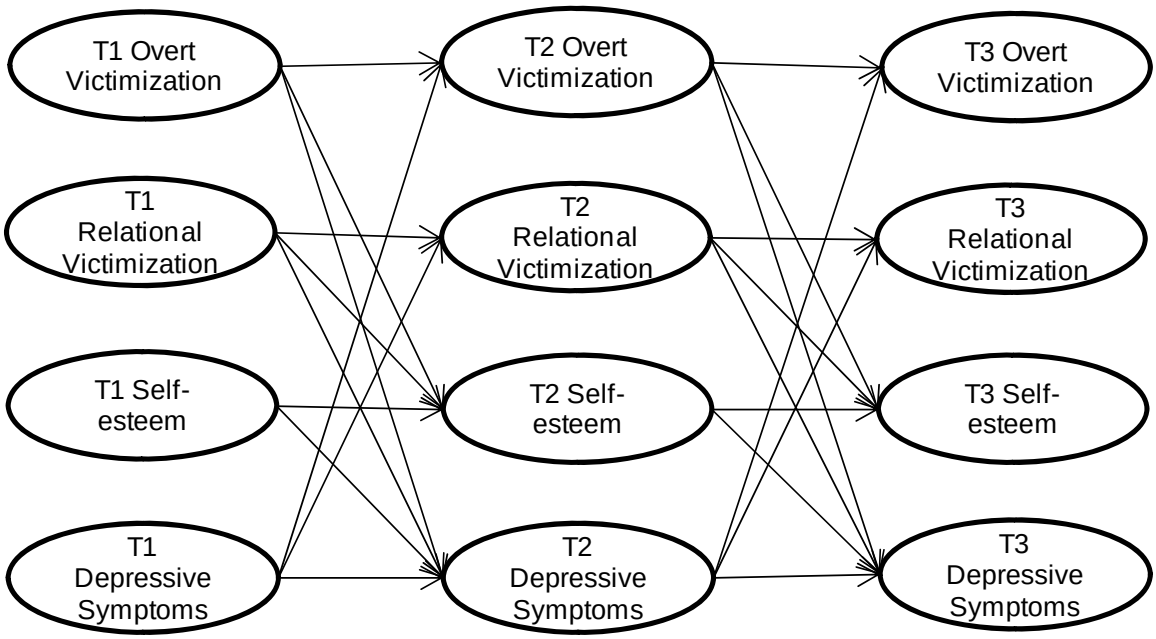

Figure 3. Proposed reciprocal model for depressive symptoms

All variables at same time point were allowed to correlate with each other. Those correlations are not shown for clarity of presentation.

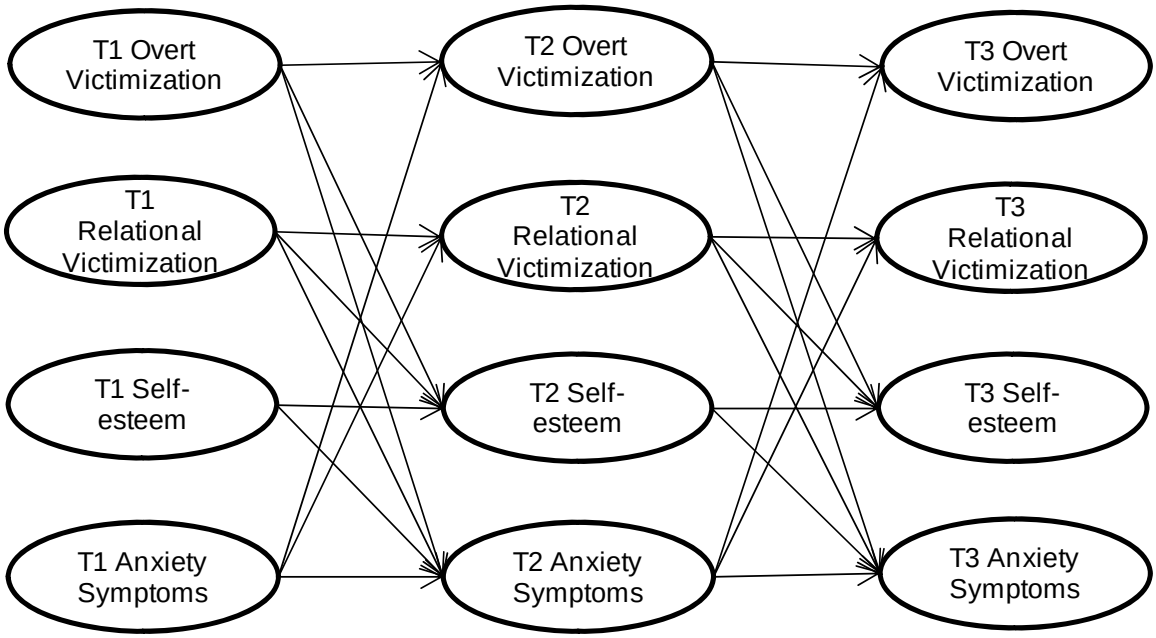

Figure 4. Proposed reciprocal model for anxiety symptoms

All variables at same time point were allowed to correlate with each other. Those correlations are not shown for clarity of presentation.

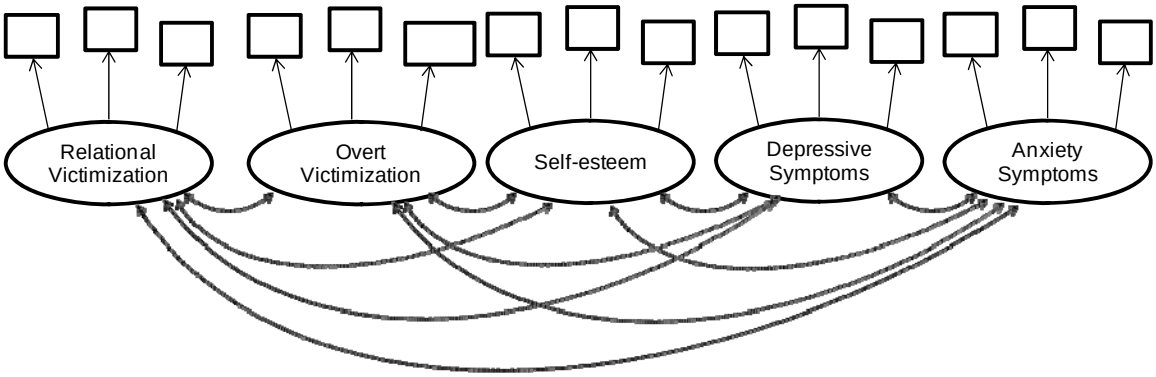

Figure 5. Proposed measurement model at any time point

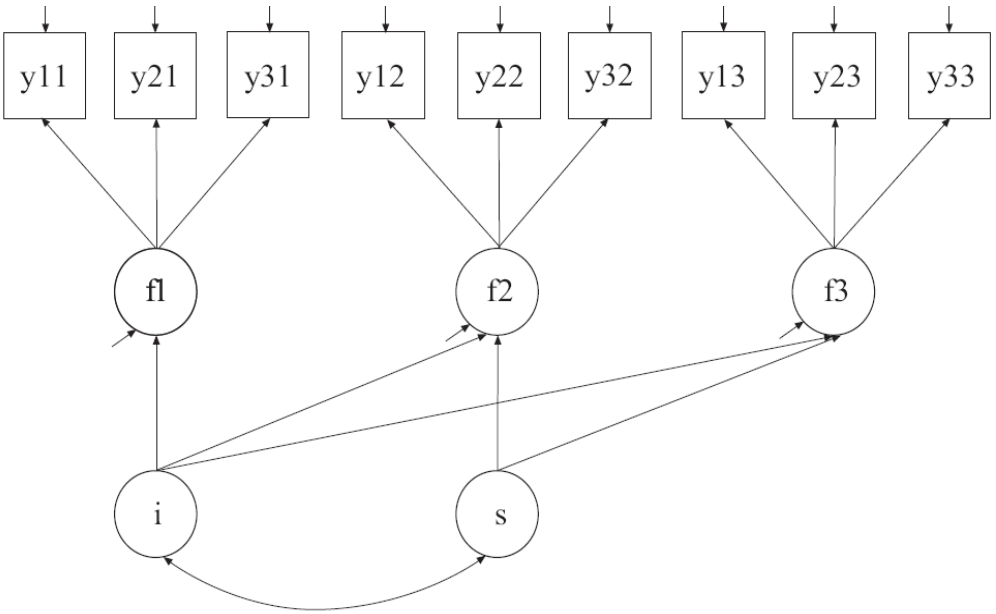

Figure 6. Multiple indicator linear growth model.

y11= item parcel one at time one. y21= item parcel two at Time 1. y31 = item parcel three at Time 1. y12= item parcel one at Time 2. y22= item parcel two at Time 2. y31 = item parcel three at Time 2. y13= item parcel one at Time 3. y23= item parcel two at Time 3. y33 = item parcel three at Time 3.

f1, f2, and f3 are the same latent construct measured over three time points. The intercept and factor loadings are fixed to be equal for f1, f2, and f3.

i= intercept /level factor. s = slope. Loadings for the intercept (i) are fixed to 1.0. Loading for slope (s) is fixed to 0 at Time 1 (f1), to 1 at Time 2 (f2), and to 2 at Time 3 (f3).

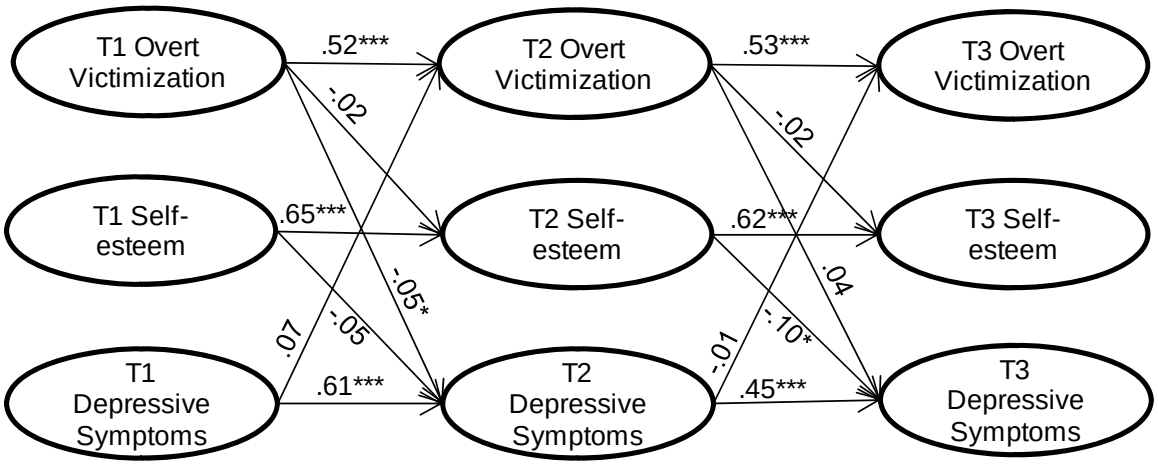

Figure 7. The reciprocal relationship between overt victimization and depressive symptoms.

All variables at same time point were allowed to correlate with each other. Correlated errors are not shown for clarity of presentation.

* $p < .05$. ** $p < .01$. *** $p < .001$.

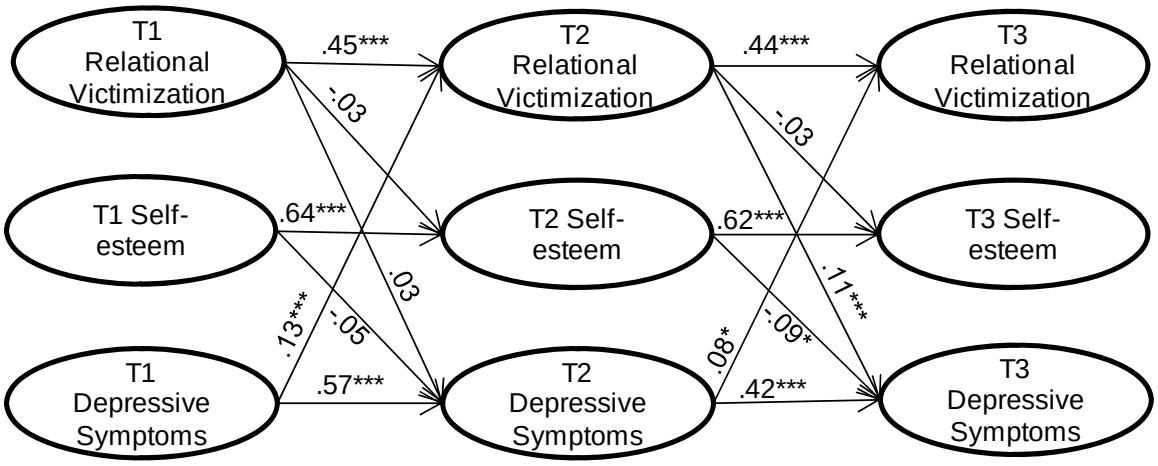

*Figure 8.*The reciprocal relationship between relational victimization and depressive symptoms.

All variables at same time point were allowed to correlate with each other. Correlated errors are not shown for clarity of presentation.

* $p < .05$. ** $p < .01$. *** $p < .001$.

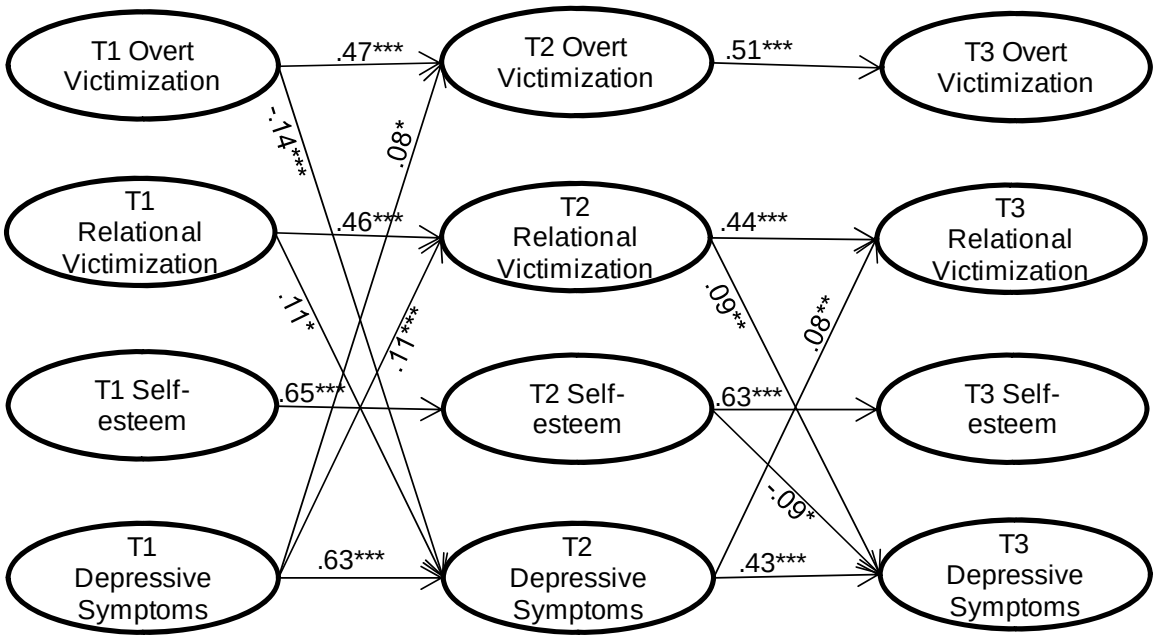

Figure 9. Modified model on the reciprocal relationship between peer victimization and depressive symptoms.

All variables at same time point were allowed to correlate with each other. Correlated errors are not shown for clarity of presentation.

* $p < .05$. ** $p < .01$. *** $p < .001$.

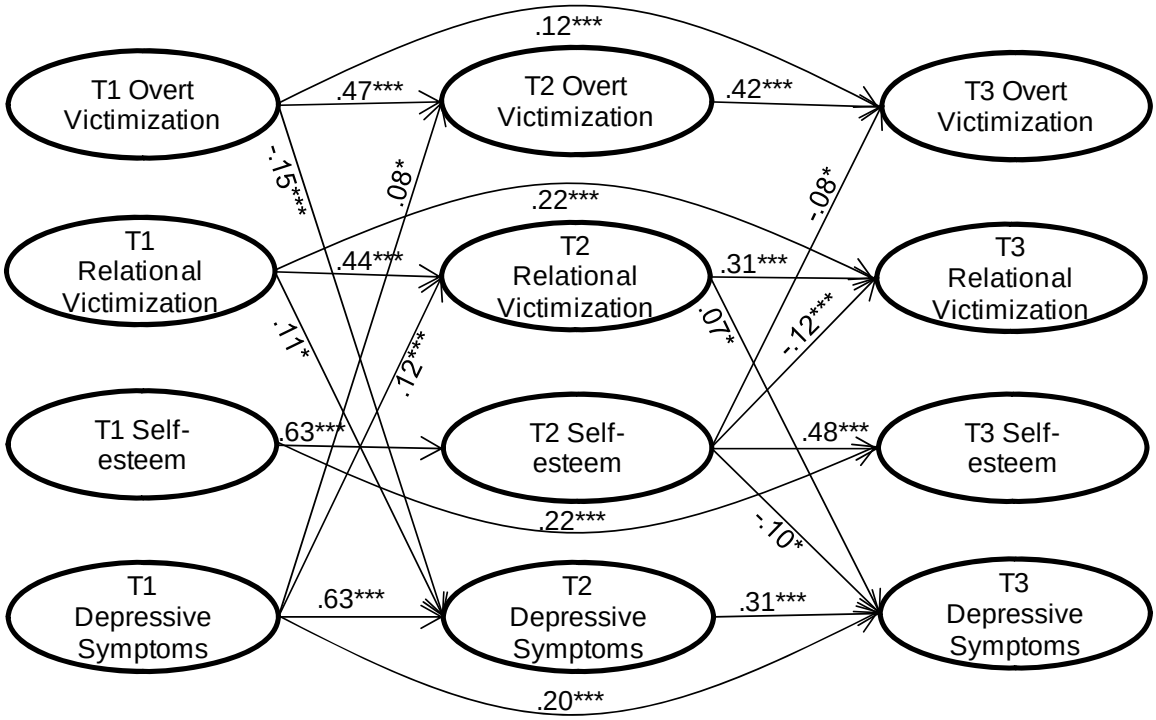

Figure 10. Final model on the reciprocal relationship between peer victimization and depressive symptoms.

All variables at same time point were allowed to correlate with each other. Those correlations are not shown for clarity of presentation.

* $p < .05$. ** $p < .01$. *** $p < .001$.

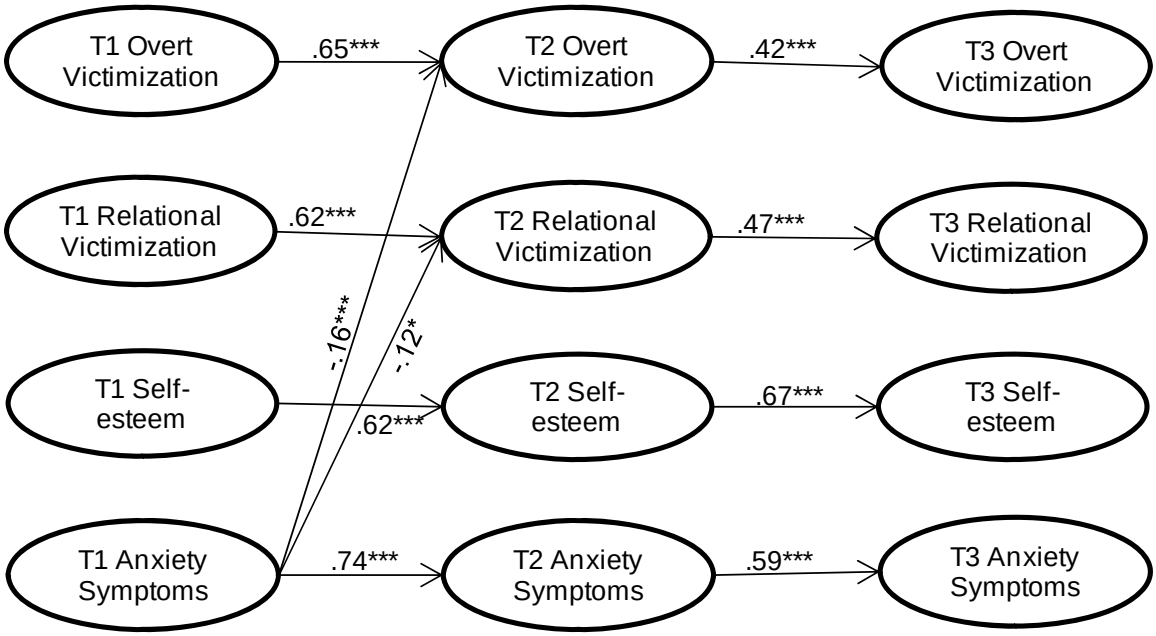

Figure 11. Modified model on the reciprocal relationship between peer victimization and anxiety symptoms.

All variables at same time point were allowed to correlate with each other. Those correlations are not shown for clarity of presentation.

* $p < .05$. ** $p < .01$. *** $p < .001$.

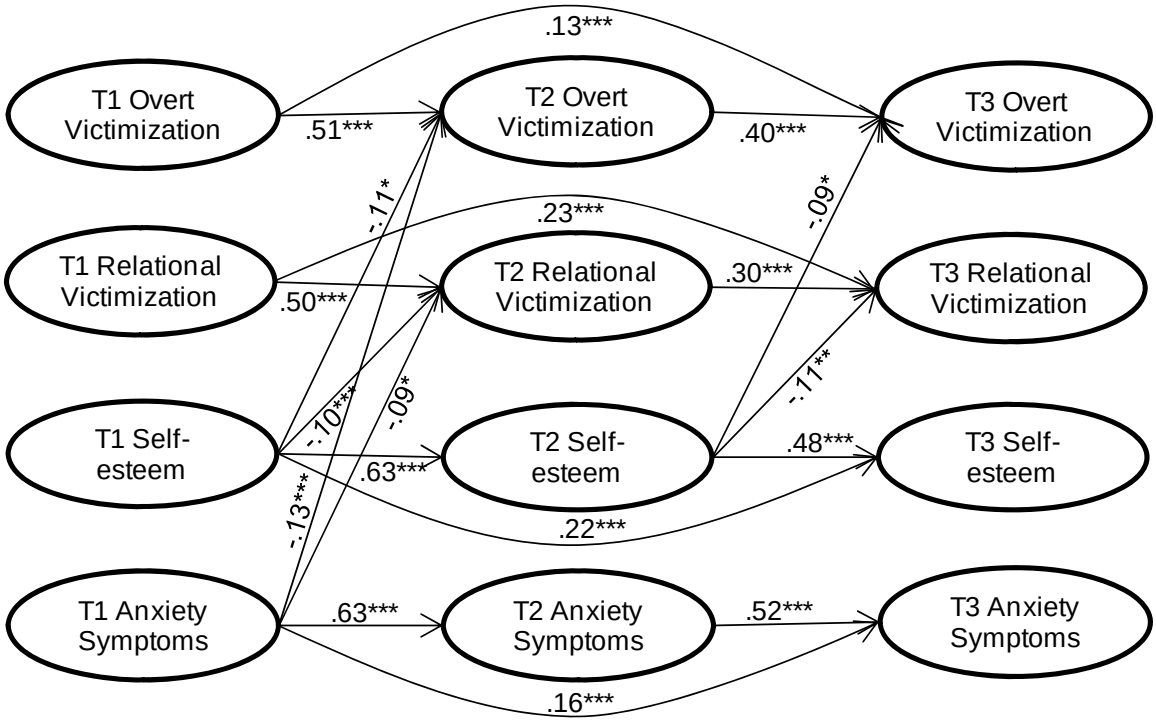

Figure 12. Final model on the reciprocal relationship between peer victimization and anxiety symptoms.

All variables at same time point were allowed to correlate with each other. Those correlations are not shown for clarity of presentation.

* $p < .05$. ** $p < .01$. *** $p < .001$.

Appendix A

General Self Subscale in the Self Description Questionnaire (SDQ-I)

For each sentence below, please fill in the number that best describes you.

		NO, not at all	**No, not much**	**Yes, a little**	**YES, very much**
1.	I do lots of important things.	①	②	③	④
2.	In general I like being the way I am.	①	②	③	④
3.	Overall, I have a lot to be proud of.	①	②	③	④
4.	I can do things as well as most other people.	①	②	③	④
5.	Other people think I am a good person.	①	②	③	④
6.	A lot of things about me are good.	①	②	③	④
7.	I am as good as most other people.	①	②	③	④
8.	When I do something, I do it well.	①	②	③	④

Social Experiences Questionnaire (SEQ)

Here is a list of things that sometimes happen to kids your age at school. How often do they happen to you at school?

	Things that Happen to Me.	**Never**	**Almost Never**	**Sometimes**	**Almost All the Time**	**All the Time**
1	How often does another kid give you help when you need it?	①	②	③	④	⑤
2	How often do you get hit by another kid at school?	①	②	③	④	⑤
3	How often do other kids leave you out on purpose when it is time to play or do an activity?	①	②	③	④	⑤
4	How often does another kid yell at you and call you mean names?	①	②	③	④	⑤
5	How often does another kid try to cheer you up when you feel sad or upset?	①	②	③	④	⑤
6	How often does a kid who is mad at you try to get back at you by not letting you be in their group anymore?	①	②	③	④	⑤
7	How often do you get pushed or shoved by another kid at school?	①	②	③	④	⑤
8	How often does another kid do something that makes you feel happy?	①	②	③	④	⑤
9	How often does a classmate tell lies about you to make other kids not like you anymore?	①	②	③	④	⑤
10	How often does another kid kick you or pull your hair?	①	②	③	④	⑤
11	How often does another kid say they won’t like you unless you do what they want you to do?	①	②	③	④	⑤
12	How often does another kid say something nice to you?	①	②	③	④	⑤
13	How often does a kid try to keep others from liking you by saying mean things about you?	①	②	③	④	⑤
14	How often does another kid say they will beat you up if you don’t do what they want you to do?	①	②	③	④	⑤
15	How often do other kids let you know that they care about you?	①	②	③	④	⑤

Children's Depression Inventory-Short (CDI-S)

Kids sometimes have different feelings and ideas.
This form lists the feelings and ideas in groups. From each group of three sentences, pick one sentence that describes you BEST for the past <u>two weeks</u>. After you pick a sentence from the first group, go on to the next group.
There is no right or wrong answer. Just pick the sentence that best describes the way you have been recently. Put a mark like this ☒ next to your answer. Put the mark in the box next to the sentence that you pick.

1.
- ☐ I am sad once in a while.
- ☐ I am sad many times.
- ☐ I am sad all the time.

2.
- ☐ Nothing will ever work out for me.
- ☐ I am not sure if things will work out for me.
- ☐ Things will work out for me O.K.

3.
- ☐ I do most things O.K.
- ☐ I do many things wrong.
- ☐ I do everything wrong.

4.
- ☐ I hate myself.
- ☐ I do not like myself.
- ☐ I like myself.

5.
- ☐ I feel like crying every day.
- ☐ I feel like crying many days.
- ☐ I feel like crying once in a while.

6.
- ☐ Things bother me all the time.
- ☐ Things bother me many times.
- ☐ Things bother me once in a while.

7.
- ☐ I look O.K.
- ☐ There are some bad things about my looks.
- ☐ I look ugly.

8.
- ☐ I do not feel alone.
- ☐ I feel alone many times.
- ☐ I feel alone all the time.

9.
- ☐ I have plenty of friends.
- ☐ I have some friends but I wish I had more.
- ☐ I do not have any friends.

10.
- ☐ Nobody really loves me.
- ☐ I am not sure if anybody loves me.
- ☐ I am sure that somebody loves me.

The Multidimensional Anxiety Scale for Children-10 (MASC-10)

This questionnaire asks you how you have been thinking, feeling, or acting recently. For each item, please fill in the circle of the number that shows how often the statement is true for you. If a sentence is true about you a lot of the time, fill in 3. If it is true about you some of the time, fill in 2. If it is true about you once in a while, fill in 1. If a sentence is not ever true about you, fill in 0. Remember, there are no right or wrong answers, just answer how you have been feeling recently.

	Question	**Never true about me**	**Rarely true about me**	**Sometimes true about me**	**Often true about me**
1	The idea of going away to camp scares me.	⓪	①	②	③
2	I'm afraid that other kids will make fun of me.	⓪	①	②	③
3	I try to stay near my mom or dad.	⓪	①	②	③
4	I get dizzy or faint feelings	⓪	①	②	③
5	I feel restless and on edge.	⓪	①	②	③
6	I feel sick to my stomach.	⓪	①	②	③
7	I get nervous if I have to perform in public.	⓪	①	②	③
8	Bad weather, the dark, heights, animals, or bugs scare me.	⓪	①	②	③
9	I check to make sure things are safe.	⓪	①	②	③
10	I feel shy.	⓪	①	②	③

Appendix B

For Office Use Only:
Protocol:
Date Approved:

UNL IRB Protocol Template.

1. Describe the significance of the project.

Defined as any form of aggression in which one student or one group of students repeatedly harasses a victim verbally or physically without provocation, characterized by an imbalance of power (Olweus, 1993), bullying among school-aged youth is increasingly being recognized as an important problem facing schools world wide. It is recognized that bullying occurs in a variety of forms including physical, verbal and relational bullying. Understanding and alleviating bullying is important both in terms of improving students' experience and education within schools, as well as preventing future aggression that affects society at large. Bullying has negative effects on its participants, including academic difficulties, school dropout, psychological problems, and a potential rise of overall aggressive behavior (Smith et al., 1993). While it is still unclear whether the effects are short- or long-term, there is a sufficient amount of research indicating that victims report significant levels of depression and diminished self-esteem after victimization (Fox & Boulton, 2003; Olweus, 1994; Smith & Ananiadou, 2003, Swearer et al., 2001). In an effort to address this issue, schools are eager to put into place bullying intervention programs; however, there are few empirically supported programs, with little research of the cultural, interpersonal and environmental factors that foster or inhibit bullying behaviors (Nansel et al., 2001). In order to effectively mitigate bullying, researchers must further explore cultural and interpersonal characteristics that contribute to this phenomenon.

The purpose of this study is to examine the phenomenon of bullying within our schools, specifically with regard to cognitive constructions of bullying and peer relationships. The study will be part of an international effort to study bullying, with results compared across similar investigations in Canada, Japan, Australia, and Korea. It is hypothesized that while bullying will be a common phenomenon across the aforementioned countries, the prevalence of types of bullying will vary across countries and across bullying subtypes. Additionally, it is hypothesized that cognitive constructions and peer influences about bullying will vary across bully countries.

By further examining attitudes towards bullying, researchers and school personnel can use this information to develop more effective strategies for dealing with this form of aggressive behavior before it escalates to tragedy. Only when we begin to take a closer look at cognitive, peer and cultural correlates can we begin to decrease bullying.

2. Describe methods and procedures.

Participant consent or assent will be obtained through school mailing (i.e., parental consent), and in-class (i.e., student assent) (see also recruiting procedures and informed

consent sections). Data will be collected from all students through the completion of several self-report questionnaires and will be completed in class. Data will be analyzed using the statistical package of SPSS, utilizing descriptive statistics, analysis of variance, regression and SEM procedures.

After obtaining parental consent and youth assent, the student participants will be administered a series of self-report instruments, which take approximately 45-60 minutes to complete and are done during the school day. These instruments will include the International Bully Survey (a.k.a. Getting Along with Other People); the Loneliness and Social Dissatisfaction Scale (LSDA); the Children's Depression Inventory (CDI-Short Form); the Reading the Mind in the Eyes Test, Child Version; the Multidimensional Anxiety Scale for Children (-Short Form); the Children's Self Experiences Questionnaire; the Moral Disengagement Scale; and the Children's Social Behavior Questionnaire (see attached). These instruments query students about their experiences with bullying and obtain the students' perception of their relationships with peers. The participating students will be given the names of counselors and teachers available to address concerns related to bullying and victimization at the end of the survey completion. In cases where the student's parent has not given consent for participation or the student chooses not to participate (declined youth assent), the student will be given the opportunity to complete his or her homework or do seatwork during data collection. Participating students' grades, attendance reports, office referrals, standardized testing results. Height/weight records, and verification of special education status will be obtained by analyzing school records. Data collection will occur in November, 2005, May, 2006, and November, 2006.

3. Describe participants.

Participants will include 5th, 6th, 7th, 8th and 9th grade students from Lincoln Public Elementary, Middle and High Schools: These include: Lincoln East, Lincoln Southeast, Culler Middle School, Lefler Middle School, Irving Middle School, Park Middle School, Fredstrom Elementary, Eastridge Elementary, Prescott Elementary, and Clinton Elementary. The approximate age range of the student participants will be 9 – 14 years. Participation will not be limited on the basis of gender, race, and/or ethnicity.

4. Describe benefits and risks.

By obtaining further information from students regarding bullying across cultures and across age groups, researchers and school personnel can better respond to these issues with appropriate interventions. As a result of participating in this research, it is possible that student participants will learn new coping skills for dealing with bullying and often the act of writing about an experience is helpful. Additionally, student participants will be given a referral list of counselors who are available to talk with students about bullying. An additional benefit to all participants in this study is the knowledge of their contribution to a study that will help shape international and national policy regarding the treatment of bullies and victims in the schools.

The risk classification for this study is greater-than-minimal. Participants may feel uncomfortable when responding to questions concerning bullying behaviors. However, self-examination of these issues may encourage an individual at risk to seek additional resources within the school (i.e., intervention with the school counselor), or additional outside resources. A school counselor will be available to meet with students on a group and individual basis. In

addition, an in-service explaining resource options for students will be provided to all teachers and school staff.

5. Describe recruiting procedures.

The opportunity to participate in the study will be presented to all current students in the fifth, sixth, seventh, eighth and ninth grades at the following Lincoln Public Schools: Lincoln East, Lincoln Southeast, Culler Middle School, Lefler Middle School, Irving Middle School, Park Middle School, Fredstrom Elementary, Eastridge Elementary, Prescott Elementary, and Clinton Elementary. Through collaboration with each school's administration, a joint letter from the school principal and principal investigator will be distributed to all parents along with the appropriate consent form (see attached example of recruiting letter).

6. Describe compensation.

There is no monetary compensation for participation in this study; however, all participants will be entered into a raffle drawing for a pair of tickets to a Nebraska Husker football game.

7. Copy of the informed consent form.

See attached Parental Consent Form, Youth Assent Form, for the participating schools.

8. State how informed consent will be obtained.

As all the student participants will be under 19 years of age, both parental/guardian consent forms and youth assent forms will be distributed and collected at each of the participating schools. Each form will describe the nature and purpose of the study, the potential risks and benefits of the study, the opportunity to withdraw at any time without penalty, and confidentiality concerns.

In the fall of 2005, parents and guardians of students at the participating schools will be sent, through a school mailing, a letter informing them of the research study as well as two copies of the parental/guardian consent form. Parents will be asked to complete one copy of the consent form for their son/daughter and return it to the school office. Students whose parents have given consent for their participation will be given a youth assent form during a pre-determined class period at the time of the research; the assent form will be distributed to those eligible students in a class format, with a researcher explaining the research study and reviewing the content of the assent form with the students and allowing time for the students to read and complete the youth assent. Students will be given a second copy of the youth assent which they may keep.

9. Describe how confidentiality will be maintained.

To ensure confidentiality, each participant will be assigned a code number, with all identifying information being removed from the completed measures (i.e., names blackened out if participant writes name on the measure) prior to data analyses. Signed consent and assent forms will be kept separately from the completed survey packets, will only be accessible to the researchers, and will be kept in a locked cabinet locked in Dr. Susan Swearer's office (40 Teachers College). The student survey packets will be kept in Dr. Susan Swearer's office in a separate locked cabinet and will be only accessible to the researchers. Data will be kept

for five years per guidelines established by the American Psychological Association.

10. Copy of questionnaires, survey, or testing instrument.
See attached.

11. Copies of institutional or organizational approval.
See attached letters from the participating schools and from Dr. Leslie Lukin, director of evaluation at Lincoln Public Schools;

12. Copy of funding proposal.
Not applicable.

Appendix C

Dear Parents and Guardians of students at (fill in the blank) school,

We are writing to let you know about an exciting research opportunity that is taking place between the Lincoln Public Schools and the University of Nebraska-Lincoln. We have been studying bullying in several schools in Lincoln and Omaha over the past decade. As a result of this successful partnership, this year, we have been asked to participate in an international study on school experiences and bullying. The other countries who are participating in this study are Canada, Japan, Australia, and Korea. An international group of researchers is interested in studying student's experiences across cultures and we are looking forward to being part of this larger study.

Students in the 5th, 6th, 7th, 8th, and 9th grades in 10 participating schools in LPSDO will be asked to complete a series of questionnaires that ask about ways students act toward one another, and about their experiences with sadness, loneliness, and anxiety. These questionnaires will be completed during the school day and will probably take between 45 and 60 minutes. Students will be asked to complete the questionnaires once this fall, once in the spring, and once again in the fall of the 06/07 school year. Not only will the research help us understand international differences in bullying and school experiences; we will also be able to learn more about students' social experiences in our own schools.

We need your help. If you would be interested in letting your child or adolescent participate, please sign the enclosed consent form and return it to your child's school, or send it in the enclosed envelope to Dr. Swearer at 40 Teachers College Hall, University of Nebraska, Lincoln, Lincoln, NE 68588-0345.

Your student's name will not be on any questionnaire that he/she fills out. There will be no way for school personnel to know how your student has responded to any of the questions. ALL RESPONSES ARE CONFIDENTIAL AND ARE USED FOR RESEARCH PUPOSES ONLY. All of the forms are kept at the University of Nebraska-Lincoln in Dr. Susan Swearer's office.

Thank you in advance for your consideration of allowing your child or adolescent to participate in this important international study. If you have any questions, please feel free to call me at 402-472-1741, or email me at: sswearer@unlserve.unl.edu.

Sincerely,

_____	_____
Susan M. Swearer, Ph.D. Principal Investigator	Name of School Principal School Name

Appendix D

Parental/Guardian Consent Form
School Experiences Across Cultures: An International Study

Dear Parent or Guardian:

You are invited to allow your child to participate in a research study; School Experiences Across Cultures: An International Study. The following information is provided in order to help you make an informed decision about whether or not to allow your child to participate. If you have any questions please do not hesitate to ask.

Your child is eligible to participate in this study because he/she is a student in the Lincoln Public Schools. The research project will take place at your child's school during school hours. The purpose of this study is to investigate social behavior and school experiences among school-aged students.

This study will take approximately 45-60 minutes of your child's time. He/she will be asked to complete several questionnaires concerning his or her experiences at school, as well as questions about his/her emotional status including social dissatisfaction, loneliness, depression, anxiety and bullying. While his/her responses will be kept confidential, he/she will be asked to provide basic demographic information including gender, age, grade, school, teacher's name, race and an estimate of his/her grades (i.e. "mostly A's," "A's and B's," "mostly B's," etc). The questionnaires will be administered in November and May of the 2005/2006 school year and in November 2006. Additionally, your child's school records will be accessed to look at grades, standardized testing, special education status, attendance, and height and weight documentation.

Your child may experience mild discomfort when completing the questionnaires (for example, questions asking them to describe any aggression they may have personally experienced). However, as a result of participating in this research, it is possible your child will learn new coping skills for dealing with school aggression, as he/she will be given a referral list of counselors who are available to talk to them about school experiences. If you should choose to access any of these services, you will be responsible for payment. If your child reports any acts of harm committed to him or her self or others, the principal investigator (Dr. Susan Swearer) will contact you and together we will come up with a plan of action to help your child.

Any information obtained during this study which could identify your child will be kept strictly confidential. Every participant will be given a code number so he/she will not be able to be identified by researchers or school personnel. The information obtained in this study may be published in scientific journals or presented at scientific meetings, but your child's identity will be kept strictly confidential. Study records will be kept for five years in a locked file cabinet in the principal investigator's office at the University of Nebraska-Lincoln.

Parent's/Guardian's Initials_____

You are free to decide not to enroll your child in this study or to withdraw your child at any time without adversely affecting his or your relationship with the investigators, the University of Nebraska-Lincoln, or with Lincoln Public Schools. Your decision will not result in any loss of benefits to which your child is otherwise entitled.

Your child's rights as a research subject have been explained to you. If you have any questions about this study, please contact Dr. Susan Swearer at (402) 472-1741. If you have any questions concerning your child's rights as a research participant that have not been answered by the investigator, or to report any concerns about the study, you may contact the University of Nebraska-Lincoln Institutional Review Board (UNL IRB), telephone (402) 472-6965.

DOCUMENTATION OF INFORMED CONSENT

YOU ARE VOLUNTARILY MAKING A DECISION WHETHER OR NOT TO ALLOW YOUR CHILD TO PARTICIPATE IN THIS RESEARCH STUDY. YOUR SIGNATURE CERTIFIES THAT YOU HAVE DECIDED TO ALLOW YOUR CHILD TO PARTICIPATE HAVING READ AND UNDERSTOOD THE INFORMATION PRESENTED. YOU WILL BE GIVEN A COPY OF THIS CONSENT FORM TO KEEP.

_____ **YES, My child can participate**

_____ **NO, I do not want my child to participate**

_____ _____

SIGNATURE OF PARENT/GUARDIAN **DATE**

PRINT YOUR CHILD'S NAME

IN MY JUDGEMENT THE PARENT/LEGAL GUARDIAN IS VOLUNTARILY AND KNOWINGLY GIVING INFORMED CONSENT AND POSSESSES THE LEGAL CAPACITY TO GIVE INFORMED CONSENT TO PARTICIPATE IN THIS RESEARCH STUDY.

_____ _____

SIGNATURE OF INVESTIGATOR **DATE**

IDENTIFICATION OF PRIMARY INVESTIGATOR
Susan M. Swearer, Ph.D.
Office: 472-1741

Appendix E

YOUTH ASSENT FORM
School Experiences Across Cultures: An International Study

We are inviting you to be in this study because you are a student at Lincoln Public Schools, and we are interested in your social behavior and school-based experiences.

This research will take you about 45 to 60 minutes to do. We will ask you to fill out several questionnaires that ask questions about how you and other students in your school get along with each other. Some of the questions will ask about loneliness, feelings of depression or anxiety and bullying. We will ask you to complete the questionnaires in November, 2005, May, 2005 and November, 2006. We will also look at your school records to find out information about your grades, standardized testing, special education status, attendance, and height and weight records. The questionnaires will also include some basic questions about your age, sex, grade, school, your teacher's name and what kind of grades you get.

Some of the questions may cause you to feel uncomfortable as they may touch on personal subjects. If you report that you have been physically harmed or that you intend to harm yourself or others, Dr. Susan Swearer will talk with you and your parents about this. Together we will come up with a plan to make sure that you are safe. Being in the study may help you think about some of your feelings and concerns you experience at school. We will provide you with a list of teachers and counselors who may be able to further help you. If you choose to access counselors outside of school, your family will be responsible for paying for that service. We hope the information from this research will help us better understand the struggles and challenges students may experience. Additionally, we hope to gain an understanding of how to help students feel safer in school.

Your responses will be kept strictly confidential. There will be no way for us to know which responses belong to you or someone else after we have coded each questionnaire. Each questionnaire will have a code number that we will use to organize the data. We may publish a summary of everybody's responses or present a summary at a scientific meeting, but your identity and your responses will be totally confidential.

We will also ask your parents or guardians for their permission for you to do this study. You may talk this over with them before you decide whether or not to participate.

_____Student's Initials

You are free to decide not to participate in this study or to withdraw at any time without negatively affecting your relationship with the investigators, the University of Nebraska, or Lincoln Public Schools. Your decision will not result in any loss of benefits to which you are otherwise entitled.

If you have any questions at any time, please ask one of the researchers, or you may call Dr. Susan Swearer at (402) 472-1741.

If you check "yes", it means that you have decided to participate and have read everything that is on this form. You and your parents or guardians will be given a copy of this form to keep.

_____ Yes, I would like to participate in the study.

_____ No, I do not want to participate in the study.

_____ _____

SIGNATURE OF SUBJECT **DATE**

_____

PRINT YOUR NAME

_____ _____

SIGNATURE OF INVESTIGATOR **DATE**

INVESTIGATOR

Susan Swearer, Ph.D. **Office: 472-1741**