

Understanding the Course of Peer Victimization and Internalizing Problems among
Adolescents: Building Strength through Parent, Friend, and Dating Partner Emotional
Support

by

Rachel Stacey Yeung
MSc, University of Victoria, 2006
BSc, The University of Western Ontario, 2003

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of the Requirements for the Degree of

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Supervisory Committee

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Abstract

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This longitudinal study investigated the course and changes in the time-varying covariation between peer victimization and internalizing problems among adolescents who were transitioning into young adulthood, and proposed that initial levels of emotional support from fathers, mothers, and friends diminished the relation between peer victimization and internalizing problems over a four-year period. Sex and developmental transition group differences (for *mid-adolescent transition group* aged 12-15 years and *late adolescent transition group* aged 16-19 years) were explored. Participants included 639 adolescents aged 12 to 19 years at baseline testing. Physical and relational victimization, emotional support, and internalizing problems were assessed from adolescent's self-reports. Overall, findings revealed that on average internalizing problems increased over time, but also differed by developmental transition group. For the *mid-adolescent transition group*, increases in physical and relational victimization were significantly associated with increases in internalizing problems. For the *late adolescent group*, increases in relational victimization (and not in physical victimization) were significantly associated with increases in internalizing problems. Emotional support from fathers, mothers, and friends significantly impacted the time-varying covariation between peer victimization and internalizing problems, and findings differed by sex and

transition group. For the *mid-adolescent transition group*, high levels of mother and father emotional support were associated with decreases in the association between peer victimization and internalizing problems for girls. High levels of friend emotional support were protective for boys, but were associated with increases in the association between peer victimization and internalizing problems for girls. For the *late adolescent transition group*, high levels of mother emotional support remained protective for girls, but high levels of father and friend emotional support were associated with increases in the association between relational victimization and internalizing problems. High levels of friend emotional support remained protective for boys.

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Chapter I: Introduction

Internalizing problems that include depression and anxiety affect approximately 10 to 20% of youth (Brendgen, Wanner, Morin, & Vitaro, 2005; Kovacs & Devlin, 1998; Letcher, Smart, Sanson, & Toumbourou, 2009). Studies on the epidemiology of internalizing problems, such as depression, suggest that rates of depression onset in childhood are low, but increase to incidence rates of 2% to 8% by mid-adolescence (see reviews by Kovacs & Devlin, 1998; Lewinsohn & Essau, 2002; Zahn-Waxler, Klimes-Dougan, & Slattery, 2000). Research on internalizing problems among older adolescents (aged 19 to 23 years) has identified factors related to the recurrence of depression in young adulthood (Lewinsohn, Rohde, Seeley, Klein, & Gotlib, 2000; Lewinsohn, Rohde, Seeley, Klein, & Gotlib, 2003), but the longitudinal trajectories of internalizing problems from late adolescence into early adulthood are not well understood.

Ample research shows that peer victimization, the experience of being a target of a peer's hurtful teasing and aggressive behaviour, can lead to internalizing problems in childhood and adolescence (see review by Hawker & Boulton, 2000). Research estimates that 15-27% of children and adolescents are victimized by their peers (Pepler, Craig, Yuile, & Connolly, 2004; Whitney & Smith, 1993), and approximately one tenth of students face severe or chronic victimization (Hanish & Guerra, 2000a). Two types of peer victimization have been identified (Crick & Bigbee, 1998; Hawker & Boulton, 2000): *Physical victimization* involves harm through physical damage by peers (e.g., victims are kicked, pushed, hit, or have their belongings taken from them). *Relational victimization* involves a peer's threat to damage a victim's relationships (e.g., victims are

excluded or kept out from a group, or are told that their peer will not like them unless they do what the peer says).

Both physical and relational victimization predict internalizing problems including anxiety, low self-esteem and depression among victims (Casey-Cannon, Hayward, & Gowan, 2001; Hanish & Guerra, 2002; Hodges & Perry, 1999; Juvonen, Nishina, & Graham, 2000; Ladd & Kochenderfer-Ladd, 2002; Leadbeater & Hoglund, 2009; Lopez & DuBois, 2005; Marini, Dane, Bosacki, & YLC-CURA, 2006; O'Brennan, Bradshaw, & Sawyer, 2009; Rigby, 2003; Smith & Brain, 2000), and these effects are particularly strong for children and adolescents who experience frequent and chronic victimization (Menesini, Modena, & Tani, 2009). It is clear that not all children and adolescents who are victimized experience internalizing problems as a result. However, little is known about the strategies that can protect adolescents from peer victimization and internalizing problems, particularly as adolescents transition into young adulthood.

Past studies draw attention to the role of individuals within victimized children and adolescents' support networks in reducing the negative consequences of peer victimization. Social support is a complex, multifaceted concept (Helsen, Vollebergh, & Meeus, 1999) and measures of support used in past research frequently do not specify the type of support that is important; however, each appears to assess aspects of *emotional support* defined as the provision of caring, empathy, love, trust, respect, and acceptance (Langford, Bowsher, Maloney, & Lillis, 1997). In particular, this research suggests that close friendships can protect children and adolescents from increases in peer victimization and internalizing problems (Hodges, Boivin, Vitaro, & Bukowski, 1999; Ladd, Kochenderfer, & Coleman, 1997). Past research also shows that adolescent's

perceptions of supportive and warm relationships with parents lay a foundation for adolescent well-being; whereas, high family conflict and adolescent's perceptions of low family support are associated with maladjustment (see reviews by Collins & Laursen, 2004b; Steinberg & Silk, 2002). However, little research has examined the effect of parent support in diminishing the association between peer victimization and internalizing problems specifically (e.g., Yeung & Leadbeater, 2010).

Further, no known study has considered the effect of romantic dating partner support on peer victimization among adolescents and young adults, despite the fact that romantic relationships increase in priority as adolescents transition into adulthood (Carver, Joyner, & Udry, 2003; Richards, Crowe, Larson, & Swarr, 1998). Support from romantic dating partners may become a significant source for adolescents and young adults to draw from. Overall, Collins and Laursen (2004a) argue for a better understanding of the interrelated contributions of both extra-familial and familial influences on adolescents' adjustment, and it is clear that research identifying responsive environments that protect adolescents from chronic victimization and its maladaptive outcomes is still needed.

The present study builds upon previous research by investigating changes in the association between peer victimization and internalizing problems among adolescents (aged 12 to 19 years) across a four-year period. I proposed that initial levels of emotional support from parents, friends, and romantic dating partners would diminish this association. A review of literature on the associations between peer victimization, emotional support, and internalizing problems is presented in the following way. Research on the trajectory of internalizing problems and on the relation between peer

victimization and internalizing problems are presented first, followed by a review of previous work on the effects of emotional support from friends, parents, and romantic dating partners on peer victimization and on internalizing problems. Limitations of existing research are also discussed.

Chapter II: Literature Review

Longitudinal Trajectory of Internalizing Problems

Previous studies have focused on identifying trajectories of internalizing problems from early childhood to middle adolescence (Brendgen et al., 2005; Letcher et al., 2009; Mathiesen, Sanson, Stoolmiller, & Karevold, 2009), and vary by the methods used to assess internalizing problems. For instance, Letcher et al. (2009) identified trajectories of internalizing problems in their longitudinal study by following 1,684 children from ages 3 to 15 years. Parent-reports of children's internalizing problems revealed that most boys and girls exhibited either low levels or decreasing levels of internalizing problems over time. However, 4% of boys and 16% of girls exhibited increasing levels of internalizing problems between the age of 3 to 15 years. Similarly, Galambos, Leadbeater, and Barker (2004) used longitudinal data from Statistics Canada's National Population Health Survey to examine mean level differences in depressive symptoms among adolescents aged 12 to 19 years across a four-year period. Self-reports revealed that mean levels of depressive symptoms increased across the four-year period for adolescents in their youngest cohort (aged 12 and 13 years). Another recent study investigated the trajectory of internalizing problems from late childhood through early adolescence by following a sample of adolescents in middle school and high school (Montague, Cavendish, Enders, & Dietz, 2010). Teacher-reports of adolescents' internalizing problems indicated that during middle and high school, adolescents exhibited decreases in levels of internalizing problems between ages 12 to 19 years. Overall, research indicates that internalizing problems occur at a lower rate in childhood (Hammen & Rudolph, 2003; Kovacs &

Devlin, 1998), but increase to incidence rates of approximately 2% to 8% by age 15 (see reviews by Lewinsohn & Essau, 2002; Zahn-Waxler et al., 2000).

Previous research on internalizing problems among older adolescents (aged 19 to 23 years) have identified factors related to the recurrence of depression in young adulthood (Lewinsohn et al., 2000; Lewinsohn et al., 2003), but few studies have examined longitudinal trajectories of internalizing problems from late adolescence into young adulthood. One known prospective longitudinal study examined the development of depression from preadolescence to young adulthood by following a cohort of adolescents over a 10-year period (Hankin, Abramson, Moffitt, Silva, & McGee, 1998). Assessments of depression were obtained by mental health professionals through interviews of adolescents at ages 11, 13, 15, 18, and 21. Findings from repeated measures analysis of variance indicated that rates of depression increased from ages 15 to 18, but remained stable from ages 18 to 21. My dissertation builds upon this previous work by examining trajectories of internalizing problems from mid- to late adolescence and from late adolescence to young adulthood.

The Association between Peer Victimization and Internalizing Problems

The association between peer victimization and maladaptive outcomes has been extensively supported in past research (Crick & Bigbee, 1998; Goodman, Stormshak, & Dishion, 2001; Hawker & Boulton, 2000; Hodges & Perry, 1999; Yeung & Leadbeater, 2007). Findings from cross-sectional and longitudinal research consistently indicate that individuals who experience frequent and chronic peer victimization are at risk of developing internalizing problems over time (Hanish & Guerra, 2002; Hodges & Perry, 1999; Juvonen et al., 2000; Lopez & DuBois, 2005; Rigby, 2003). As many as 75% of

students report experiences of victimization, and 14% of boys and girls report suffering severe trauma as a consequence of the abuse (Cash, 1995; Oliver, Hoover, & Hazler, 1994).

In particular, empirical findings with children and young adolescents indicate that hurtful teasing and victimization from peers predict subsequent internalizing problems that include loneliness, anxiety, low self-esteem, and depression among victims (Hanish & Guerra, 2002; Juvonen et al., 2000; Kochenderfer-Ladd & Wardrop, 2001; Ladd & Kochenderfer-Ladd; 2002; Leadbeater, Boone, Sangster, & Mathieson, 2006; Lopez & DuBois, 2005; O'Brennan et al., 2009). For example, Lopez and Dubois (2005) examined the effect of peer victimization on youth's adjustment in their cross-sectional study with 508 middle-school students. Self-reports of peer victimization and of internalizing problems (including anxiety, depression, and somatic complaints) revealed that peer victimization was significantly associated with youth's problems in emotional adjustment. Using a sample of 537 adolescents (aged 13 to 20 years), Menesini et al., (2009) investigated the association between peer victimization and internalizing problems by comparing the concurrent psychological symptoms of four participant groups (bullies, victims, bully/victims, and uninvolved students). The stability of adolescents' psychological symptoms was also examined by using adolescents' recollection of their earlier school experiences. Victims reported higher levels of internalizing problems than any other group, and adolescents of chronic victimization also reported higher levels of anxiety, depression, and withdrawal compared to the other groups.

Repeated victimization experiences may also lead to increases in internalizing problems and a sense of helplessness as victims anticipate future aggressive interactions

(Bond, Carlin, Thomas, Rubin, & Patton, 2001; Craig, 1998; Hodges & Perry, 1999). For instance, Bond et al.'s (2001) longitudinal study investigated the association between recurrent physical and relational victimization and the onset of depression and anxiety in 2,680 adolescents (aged 13 years) over a two-year period. Self-reports of peer victimization significantly predicted depression and anxiety in adolescents, and the effect of peer victimization on depression and anxiety was stable over time for adolescents who were being chronically victimized by their peers.

Overall, past work on peer victimization and internalizing problems focuses predominately on children and young adolescents (Bond et al., 2001; Casey-Cannon et al., 2001; Hanish & Guerra, 2002; Juvonen et al., 2000; Kochenderfer-Ladd & Wardrop, 2001; Lopez & DuBois, 2005; O'Brennan et al., 2009), and research that includes older adolescents are typically cross-sectional in design (Menesini et al., 2009; Prinstein, Boergers, & Vernberg, 2001). Longitudinal studies are still needed to investigate the effects of chronic victimization in older adolescents who are transitioning into young adulthood.

Furthermore, preventing the negative consequences of peer victimization is a priority for promoting positive adjustment among adolescents. Yet few longitudinal studies have identified specific protective factors that can buffer adolescents against these maladaptive outcomes. I propose that supportive relationships within the family, peer, and dating contexts can protect adolescents who are experiencing peer victimization.

The Effect of Emotional Support on Peer Victimization and Internalizing Problems

There is growing interest in understanding ways to reduce the negative effects of peer victimization on adolescents' adjustment. Peer victimization often occurs in school settings (Craig, Pepler, & Atlas, 2000; Hanish & Guerra, 2000b; O'Connell, Pepler, & Craig, 1999) and studies have demonstrated the effect of friend support against peer aggression (Hodges et al., 1999; Ladd et al., 1997). However, it remains unclear of whether the emotional support received in other contexts including the family and dating relationships are effective in reducing increases in the association between peer victimization and internalizing problems. The present study asks: Are adolescents with initial levels of high emotional support from friends, parents, and romantic dating partners less likely to experience increases in peer victimization and internalizing problems compared to those with initial levels of low emotional support?

Previous work suggests that emotional support that involves the provision of love, empathy, care, trust, respect, and interest regarding an individual's well-being, is most valuable to individuals (House, 1981; Krause, 2007), and is important for adolescent adjustment. Stable emotional support may be particularly important for adolescents who seek help against victimization (Cowie, 2000; Leadbeater, Hoglund, & Woods, 2003; Smith, Shu, & Madsen, 2001, Yeung & Leadbeater, 2010). This section reviews research that suggests that emotional forms of support from friends and parents can protect peer-victimized adolescents from internalizing problems. No known study has investigated the effect of romantic dating partner support on peer victimization and internalizing problems; however, the potential effect of romantic dating partner support is discussed.

Emotional support from friends. Previous research on friend emotional support suggests that the presence of friends and high quality friendships (characterized by emotionally supportive behaviours such as companionship, security, protectiveness, empathy, closeness, warmth, and intimate exchange) can protect adolescents from maladjustment over time (Colarossi & Eccles, 2003; Deković, Buist, & Reitz, 2004; Hartup & Stevens, 1999; Masten, 2005; Slavin & Rainer, 1990). For example, one longitudinal study with adolescents (aged 15 to 18) revealed that emotional support from friends was significantly related to decreases in depression and increases in self-esteem over time (Colarossi & Eccles, 2003).

Existing literature also demonstrates that supportive friendships can shield older children and adolescents from experiencing higher levels of peer victimization and prevent maladaptive outcomes (Boulton, Trueman, Chau, Whitehand, & Amatya, 1999; Demaray & Malecki, 2003; Hartup & Stevens, 1997; Hodges et al., 1999; Hodges, Malone, & Perry, 1997; Holt & Espelage, 2007; Prinstein et al., 2001). In particular, young adolescents (aged 10 to 13 years) with a high quality and supportive best friendship are less likely to be targets of peer victimization when compared to those without a high-quality best friendship (Bollmer, Milich, Harris, & Maras, 2005). Further, adolescents with supportive friendships may be more willing to intervene or protect one another when one is the target of another peer's aggression. Findings from observational research on peer processes among pre-adolescents in grades 4 to 6 suggest that some friends actively intervene on behalf of victims during bullying episodes by distracting the bully or by joining physically or verbally to offer support to victims (O'Connell et al., 1999). In addition, emotionally supportive friendships characterized by warmth and

intimate exchange may provide a context for adolescents to share and problem solve about peer victimization experiences (Goldbaum, Craig, Pepler, & Connolly, 2003).

Moreover, longitudinal research with children suggests that the support received from friendships has long-term protective effects against the association between peer victimization and internalizing problems. With a sample of children in grades four and five, Hodges et al. (1999) investigated the moderating effect of friendship on the association between peer victimization and internalizing problems over a one-year period. Peer nominations assessed peer victimization, and teacher-reports assessed children's internalizing problems. Friendship was measured by asking children to identify their three best friends, and they were considered to have a best friendship if their first choice also nominated them as one of their three best friends. Children also responded to questions that assessed the quality of their friendship including protection (e.g., "My friend would stick up for me if another kid was causing me trouble"), companionship (e.g., "My friend and I spend all our free time together"), security (e.g., "If my friend or I do something that the other doesn't like, we can make up easily"), and conflict (e.g., "My friend and I argue a lot"). Having a best friend and the perceived protection from a best friend predicted decreases in peer victimization over time. The protective quality of friendships also buffered peer-victimized children from internalizing problems over a one-year period. On the other hand, victimized children without a best friend demonstrated increases in internalizing problems over time.

Similar findings have been demonstrated for adolescents. One short-term longitudinal study investigated the relation between peer victimization and friendship (having a best friend) over a 6-month period with a sample of young adolescents with an

average age of 11.3 years (Boulton et al., 1999). Adolescents indicated their best friend in their class and peer nominations were used to assess peer victimization. Students with a reciprocated best friend at the time of initial assessment and six months later demonstrated decreases in peer victimization, whereas those without a friend at both time points showed an increase in victimization. In a cross-sectional study, Holt and Espelage (2007) examined the relation between social support, bully/victim status (i.e., bullies, victims, bully/victims, or uninvolved), and psychological distress in a large sample of adolescents in grades 7 to 12. Self-reports revealed that uninvolved adolescents (i.e., adolescents who were not classified as bullies, victims, or bully/victims) reported the most friend support and the least anxiety and depression. Moreover, victims who reported moderate levels of friend support also indicated the least anxiety and depression.

In summary, empirical research shows the positive effect of friend support on peer victimization and internalizing problems with children and younger adolescents (Bollmer et al., 2005; Boulton et al., 1999; Goldbaum et al., 2003; Hodges et al., 1999; Hodges et al., 1997; O'Connell et al., 1999). Few studies on the effect of friend support have been conducted with older adolescents (for exceptions see Holt & Espelage, 2007; Prinstein et al., 2001), and these are cross-sectional in design. Further longitudinal research is still needed to understand whether the effect of friend support on peer victimization and internalizing problems remains stable for older adolescents over time.

Emotional support from parents. Considerable research with large school or community-based samples shows that high levels of parent emotional support (including listening, providing praise, affection, empathizing, trust, warm involvement, respect, and responsiveness) are protective factors for internalizing problems among adolescents

(Amato, 1994; Deković et al., 2004; Gorman-Smith, Tolan, Henry, & Florsheim, 2000; Harter & Whitesell, 1996; Licitra-Kleckler & Waas, 1993; Montague et al., 2010; Nada Raja, McGee, & Stanton, 1992; Needham, 2008; Seidman et al., 1999). On the other hand, a lack of parent support is associated with increased levels of depressive symptoms (Garnefski & Diekstra, 1996; Shaw, Krause, Chatters, Connell, & Ingersoll-Dayton, 2004).

Longitudinal studies show particularly compelling evidence that low levels of parent emotional support predict adolescents' clinical maladjustment including anxiety, depression, and low self-esteem (Brendgen et al., 2005; Cornwell, 2003; Demaray, Malecki, Davidson, Hodgson, & Rebus, 2005; Leadbeater, Kuperminc, Blatt, & Hertzog, 1999; Needham, 2008; Stice, Ragan, & Randall, 2004). For example, Cornwell (2003) examined the effects of changes in social support on depressive symptoms over a one-year period with adolescents in grades 7 to 12. Higher levels of parent emotional support were associated with lower levels of depressive symptoms one year later, such that a 25% increase in initial levels of parental emotional support resulted in a 2.7% decrease in depressive symptoms over time. Growth in parent emotional support over time was also significantly associated with declines in depressive symptoms, whereas decreases in parent emotional support over time were related to increases in symptoms. Needham (2008) investigated the relation between parent emotional support and depression during the transition from adolescence (mean age = 15.28 years) to young adulthood (mean age = 21.65 years). Using three waves of the National Longitudinal Study of Adolescent Health and adolescents' self-reports on depressive symptoms and parent emotional support, findings revealed that parent support during adolescence was inversely

associated with initial symptoms of depression. Overall, adolescents who experienced increases in levels of depressive symptoms over time also reported lower levels of parental support as young adults.

The effect of early parent support also has implications for mental and physical health in adulthood. In Shaw et al.'s (2004) retrospective study, a nationally representative sample of adults (aged 25 to 74 years) responded to questions that assessed early emotional support received from their mothers and fathers during childhood (e.g., "How much love and affection did she or he give you?" and "How much could you confide in her or him about things that were bothering you?"). Participants also responded to assessments of current depressive symptoms and chronic conditions (such as asthma, diabetes, arthritis, etc.). High levels of early emotional support from parents during childhood were significantly associated with participants' reports of good health throughout adulthood, whereas a lack of early parent support was associated with high levels of depression and chronic conditions in adulthood.

Together, past research illustrates that parents' support is associated with lower levels of internalizing problems; however, fewer studies have investigated the direct and diminishing effects of parent support for adolescents who experience peer victimization. Emotional support from parents may be important in reducing the association between peer victimization and internalizing problems because parents who are perceived as emotionally supportive may be more likely to be approached for help in solving peer conflicts (Ladd & Kochenderfer-Ladd, 1998; Perren & Hornung, 2005). Findings from emerging research demonstrate that parent emotional support is effective in protecting peer victimized adolescents from internalizing problems. For instance, Rigby (2000)

investigated the cross-sectional associations among peer victimization, perceived overall social support, and mental health in a large sample of adolescents aged 12 to 16 years.

Peer victimization was measured by self-reports for four subtypes of victimization:

verbal (e.g., being teased or called hurtful names), *relational* (e.g., being left out of things on purpose), *physical* (e.g., being kicked or hit), and *being threatened with harm*. Overall levels of social support were assessed by adolescents' reports of how much help they thought they would receive from teachers, a best friend, their mother, and their father if they were experiencing serious problems at school. Mental health was assessed using self-reports of somatic symptoms, anxiety, social dysfunction, and depression.

Adolescents who experienced frequent peer victimization and who had low overall levels of social support were at greater risk of poor mental health compared to those with high overall levels of social support. Adolescents also indicated that support was more likely to be available from parents than from teachers and classmates, and from mothers compared to fathers. Although these results provided evidence for the protective effect of social support on peer victimization and poor mental health, the independent effects of teacher, best friend, classmate, mother, and father support were not examined.

Only one recent study has investigated the independent effects of father, mother, and teacher emotional support on peer victimization and maladjustment over time. Using the same sample of adolescents (aged 12 to 19 years) but for only two waves of data at T1 and T2, our previous longitudinal study found that higher levels of mother emotional support were associated with lower levels of internalizing problems and moderated the effects of peer victimization on internalizing problems (Yeung & Leadbeater, 2010).

Furthermore, teachers' support also buffered against internalizing problems associated

with peer victimization across a two-year period. The present study extends beyond this previous work by examining the diminishing effect of parent support on the relation between peer victimization and internalizing problems for adolescents who are transitioning into young adulthood.

Emotional support from romantic dating partners. Romantic relationships become increasingly important during late adolescence and early adulthood (Furman, 2002; Furman & Shaffer, 2003). Like the supportive experiences that children and adolescents share with parents and friends, romantic relationships can offer another source of emotional support that include companionship and responsive caregiving for adolescents and young adults (Colletta, 1981; Collins & Feeney, 2000; Connolly & Johnson, 1996; Hartup, 1989; Zimmer-Gembeck, Siebenbruner, & Collins, 2001). However, past studies have focused typically on the effects of the negative qualities of romantic relationships on adolescents' mental health instead (e.g., Davila, Steinberg, Kachadourian, Cobb, & Fincham, 2004; Leadbeater, Banister, Ellis, & Yeung, 2008), and empirical research on emotional support from romantic dating partners is limited. Findings from longitudinal studies indicate that romantic involvement (i.e., being in a romantic relationship) can predict increases in depressive symptoms over time during late adolescence, particularly among adolescents who have a lack of trust in the availability of their partner and have a fear of rejection (Davila et al., 2004). Over-involvement in dating (i.e., having several dating partners in one year) also is associated with declines in emotional health (e.g., over-dependency, lack of self-control, inhibition, and anxiety) and increases in internalizing problems between early to mid-adolescence (Zimmer-Gembeck et al., 2001). Dating experiences that are aggressive have also been linked to

internalizing problems among victims (Leadbeater et al., 2008). In addition, dating partners have been examined primarily as perpetrators of aggression and violence in studies on peer victimization and romantic relationships (Bennett & Fineran, 1998; Connolly, Pepler, Craig, & Taradash, 2000; Holt & Espelage, 2005; Kaura & Lohman, 2007; Linder, Crick, & Collins, 2002), and rarely are considered to be sources of support that adolescents and young adults can draw from.

A limited number of studies have investigated more positive aspects of dating experiences. These report that healthy and higher quality romantic relationships, which include aspects of closeness, satisfaction, and ease of communicating with the romantic partner, are a foundation for the development of positive self-perceptions (Connolly & Konarski, 1994; Zimmer-Gembeck et al., 2001). Higher quality romantic relationships can also provide support and encouragement for academic achievement (Furman & Shaffer, 2003; Giordano, Phelps, Manning, & Longmore, 2008) and can deter youth offenders from becoming involved in future offenses (McCarthy & Casey, 2008). Further, higher quality romantic relationships can protect adolescents from experiencing increases in internalizing problems. Davies and Windle's (2000) longitudinal study revealed that adolescents (*Mean age* = 15.87 years, *SD* = 0.76) in steady dating relationships exhibited decreases in depressive symptoms over a one-year period. Another cross-sectional study with adolescents (aged 14 to 19 years) in grades 10 to 12 indicated that the presence of a dating relationship protected adolescents against social anxiety; however, negative qualities of dating relationships (i.e., conflict, criticism, exclusion, dominance, and pressure) were significantly associated with depressive symptoms (La Greca & Harrison, 2005).

Limitations of Existing Research

Emerging research offer promise for understanding how emotional support can reduce levels of peer victimization and internalizing problems in the transition to young adulthood. Yet extant work on peer victimization is limited by how emotional support is conceptualized and assessed. Specifically, two aspects of emotional support may be particularly important to this area of research: 1) sources of emotional support and 2) developmental shifts in social relationships. First, studies that investigate the effect of emotional support on peer victimization and internalizing problems have focused primarily on emotional support received from friends (Boulton et al., 1999; Cowie, 2000; Goldbaum et al., 2003; Hodges et al., 1999; Hodges et al., 1997; O'Connell et al., 1999; Pellegrini, Bartini, & Brooks, 1999). Findings on the positive effects of parent emotional support on the association between peer victimization and internalizing problems in adolescence are beginning to emerge (Rigby, 2000; Yeung & Leadbeater, 2010). Considerably less is known about the positive qualities of romantic relationships on adjustment, and no known study has examined this in the context of peer victimization. Given the increased importance of romantic relationships for older adolescents and young adults (Furman, 2002), more work that investigates the contribution of support from romantic partners is needed.

Second, past studies suggest that perceptions of emotional support change in its source and relevance throughout development (see reviews by Collins & van Dulmen, 2006b; Hartup, 1989; Hartup & Stevens, 1997). Parents and friends are primary sources of emotional support during childhood and adolescence, but perceived support from these social networks decline as adolescents transition into young adulthood (Furman &

Shaffer, 2003; Malecki & Elliott, 1999). Romantic relationships become a priority when these relationships offer trust, stability, and emotional support for older adolescents and young adults (Furman & Buhrmester, 1992; Richards et al., 1998; Shulman & Kipnis, 2001). It is not to say that the emotional support received from parents and friends completely diminishes or is no longer relevant for older adolescents and young adults. In fact, previous longitudinal work suggests that emotional support received in childhood and adolescence has significant implications for mental health in adulthood (see review by Hartup & Stevens, 1997; Shaw et al., 2004). Specifically, emotional support from parents throughout childhood and adolescence is associated with psychological and physical health over time, whereas lower levels of parent emotional support are related to increased levels of depression and chronic conditions in adulthood (Shaw et al., 2004). Likewise, children, adolescents, and adults with friends have fewer psychosocial problems and experience greater psychological well-being throughout adulthood and into old age compared to those without friends (see review by Hartup & Stevens, 1997).

Findings from empirical studies provide strong evidence for developmental shifts in the sources of support and in its perceived importance from childhood into young adulthood. However, research on peer victimization has not considered the impact of these developmental shifts on internalizing problems over time. Most studies that examine the effect of emotional support on peer victimization and internalizing problems in adolescence are cross-sectional in design (Demaray & Malecki, 2003; Hodges et al., 1997; Holt & Espelage, 2007; LaGreca & Harrison, 2005; Prinstein et al., 2001; Pellegrini et al., 1999; Rigby, 2000). Second, longitudinal studies that investigate changes in levels of peer victimization and in internalizing problems have only examined

the effect of friend support (Boulton et al., 1999; Goldbaum et al., 2003; Hodges et al., 1999) and more rarely the effect of parent support (Yeung & Leadbeater, 2010). The effects of other support providers including romantic dating partners have not been explored in longitudinal research.

More recent studies have considered the importance of comparing various sources of support and differentiating between the effect of these sources on adjustment (Colarossi & Eccles, 2003; Malecki & Demaray, 2003; Stice et al., 2004). For instance, one longitudinal study examined the differential effects of teacher, parent, and peer emotional support (e.g., let them know that they care about them, value and listen to their ideas, treat them with respect, help them or give advice) on adolescents' adjustment, and demonstrated that teacher and friend emotional support had larger positive effects on adolescents' self-esteem over time compared to parent emotional support (Colarossi & Eccles, 2003). Our previous longitudinal study used the same adolescent sample for two waves of data at T1 and T2, and examined different sources of emotional support and its effect on adjustment in the context of peer victimization in adolescence (Yeung & Leadbeater, 2010). Findings suggest that emotional support from parents and teachers may be effective in promoting positive adjustment among peer-victimized adolescents. Future studies that contribute to a better understanding of the developmental shifts in social support are vital, particularly when considering protective strategies against peer victimization and internalizing problems. For instance, one source of emotional support (e.g., parents and friends) may be more effective in diminishing internalizing problems during early to mid-adolescence compared to another source of support (e.g., romantic dating partners) from late adolescence into young adulthood. Further longitudinal

research is clearly needed to understand how developmental shifts in social relationships influence the protective effects of emotional support on the association between peer victimization and internalizing problems over time.

Finally, sex differences in these associations were explored in the present study for the following reasons. First, consistent findings suggest that adolescent girls report more internalizing problems than adolescent boys overall (Deković et al., 2004; Galambos et al., 2004; Hankin, 2008; Hankin et al., 1998; Khatri, Kupersmidt, & Patterson, 2000; Leadbeater, Blatt, Quinlan, 1995; Leve, Kim, & Pears, 2005; Lewinsohn et al., 1994; Menesini et al., 2009; Nada Raja et al., 1992), and that peer-victimized adolescent girls also report higher levels of anxiety and depression than peer-victimized adolescent boys (Bond et al., 2001; Lopez & DuBois, 2005). Second, contradicting findings have been obtained among studies that examine sex differences in the effect of support on peer victimization and on internalizing problems, with some studies reporting an absence of sex differences (Bollmer et al., 2005; Boulton et al., 1999; LaGreca & Harrison, 2005; Yeung & Leadbeater, 2010). Other studies have reported sex differences in perceived levels of support, with girls reporting higher levels of support from friends and parents than boys during adolescence and young adulthood (Furman & Buhrmester, 1992; Holt & Espelage, 2007; Leadbeater et al., 1999; Rigby, 2000). Perceptions of low levels of parent support also had a greater negative impact on the psychological well-being of adolescent girls than on adolescent boys (Needham, 2008). However, little research has examined sex differences in relation to the effect of emotional support on the association between peer victimization and internalizing problems, and findings from

existing work reported no sex differences in concurrent and longitudinal analyses (see Yeung & Leadbeater, 2010).

Therefore, the present study assessed whether adolescent girls reported higher levels of internalizing problems than adolescent boys over time, and also investigated whether sex influenced the effect of emotional support on peer victimization and internalizing problems.

Research Questions

The present study contributes to existing literature by examining the longitudinal associations between peer victimization, emotional support, and internalizing problems in late adolescence for the following reasons. First, longitudinal research has investigated peer victimization and internalizing problems in childhood and early adolescence over time (Bond et al., 2001; Hanish & Guerra, 2002; Hodges & Perry, 1999; Juvonen et al., 2000; Kochenderfer-Ladd & Wardrop, 2001), and empirical studies among older adolescents are limited and are mostly cross-sectional in design (Marini et al., 2006 ; Menesini et al., 2009). Second, there is increasing interest in understanding strategies to preventing peer victimization and internalizing problems among adolescents and little research to inform it.

The present study investigated the course and changes in the association between peer victimization and internalizing problems among adolescents who were transitioning into young adulthood, and also examined the effect of initial levels of emotional support on the relation between peer victimization and adolescents' internalizing problems across a four-year period. Specifically, the study explored the following research questions:

- (1) What is the developmental trajectory of internalizing problems as adolescents

transition into young adulthood? Do levels of physical or relational victimization co-vary with internalizing problems over time?

(2) Do initial levels of mother, father, friend, and romantic dating partner emotional support, independently, modulate the associations between physical or relational victimization and internalizing problems respectively over time?

(3) Are there sex and developmental transition group differences (*mid-adolescent transition group* aged 12-15 years; *late adolescent transition group* aged 16-19 years) in (a) the course of peer victimization and internalizing problems, and (b) the effect of emotional support on peer victimization and internalizing problems?

Consistent with past literature, it was predicted that:

(1) Longitudinal trajectories of physical and relational victimization would co-vary with the longitudinal trajectory for internalizing problems over time. Specifically, it was expected that levels of internalizing problems would be higher on occasions when physical and relational victimization respectively, were higher.

(2) Adolescents with high initial levels of mother, father, friend, and romantic dating partner emotional support would experience lower levels of peer victimization and internalizing problems. Furthermore, it was expected that emotional support received from friends would be the most salient type of emotional support for adolescents since perceived support from parents appear to decline while perceived support from friends increase in late adolescence (Helsen et al., 1999).

(3) Adolescent girls would report higher levels of internalizing problems compared to adolescent boys over time. It was expected that the trajectory of internalizing problems would increase among adolescents in the *mid-adolescent*

transition group (aged 12 to 15 years). It was unclear whether the trajectory of internalizing problems would remain stable, increase, or decline among adolescents in the *late adolescent transition group* (aged 16 to 19 years). Consistent with previous work (Furman & Buhrmester, 1992; Holt & Espelage, 2007; Leadbeater et al., 1999; Rigby, 2000), it was predicted that adolescent girls in both the *mid-* and *late adolescent transition groups* would report higher levels of support from friends and parents than boys.

Chapter III: Methods

Participants

Data for the present study were from the Healthy Youth Survey (HYS), a collaborative project between an interdisciplinary group of University of Victoria researchers. The HYS was administered in the spring of 2003 (T1), of 2005 (T2), and of 2007 (T3) in a medium-sized urban community. Participants were obtained from a random sample of 9500 telephone listings where 1036 households with an eligible adolescent (aged 12 to 18 years) were identified. Of these, 185 parents or guardians refused the participation of the adolescent in their care and 187 adolescents refused participation. Complete data were available from 664 adolescents (321 boys and 343 girls) at T1, 580 adolescents (87.3%; 273 boys and 307 girls) at T2, and 540 adolescents (81.3%; 246 boys and 294 girls) at T3. Participants who indicated that one or more of their parents had died at either T1 ($n = 13$), T2 ($n = 7$), or T3 ($n = 5$) were excluded from analyses. Two participants had a parent die and also had missing data at T2 and T3. Therefore, longitudinal data were available from 513 adolescents (77% of original sample) for subsequent analyses.

Adolescents ranged in age from 12 to 19 years ($M = 15.5$ years, $SD = 1.9$ years) at T1, from 14 to 21 years ($M = 17.6$ years, $SD = 1.9$ years) at T2, and from 16 to 23 years ($M = 19.5$ years, $SD = 1.9$ years) at T3. At T1, 32% of adolescents were in middle school (i.e., grades 6 to 8), 65% of adolescents were in high school (i.e., grades 9 to 12), and 3% of adolescents were in college or university. At T2, 3% of adolescents were in middle school (i.e., grade 8), 58% adolescents were in high school (i.e., grades 9 to 12), 20% of adolescents and young adults were in college or university, and 19% were not enrolled in

school (e.g., needed to work; on waiting list for college; travelling; wanted a break from school). At T3, 32% of adolescents were in high school (i.e. grades 9 to 12), 38% of adolescents and young adults were in college or university, and 30% were not enrolled in school.

Demographic information for adolescents' current living situation, mother's and father's employment, levels of education, ethnicity, household moves, and welfare assistance was gathered from adolescents at T1. Adolescent reports on their current living situation indicated that on average, 64.3% of adolescents lived with both biological parents, 10.4% lived with their mother only, 9.0% lived with their mother and stepfather/partner, 8.7% lived back and forth between their mother's and father's households, 1.3% lived with their father and stepmother/partner, 1.1% lived with their father only, and 5.1% had other arrangements (e.g., lived with siblings, grandparents, relatives, foster family, or adoptive family). Reports by adolescents also revealed that 90% of fathers and 76% of mothers were employed at a part-time or full-time job. Forty-four percent of fathers and 49% of mothers completed college or university, 17% of fathers and 18% of mothers completed vocational training (e.g., trade school) or some post-secondary courses, 19% of fathers and 19% of mothers finished high school, and 9% of fathers and 5% of mothers did not complete high school. Ten percent of adolescents and 9% of adolescents indicated that they did not know their fathers' and mothers' highest level of education respectively. Adolescents' ethnicity was identified as the following: 85% Caucasian, 4% Asian, 3% Aboriginal, 1% Hispanic, 1% African, 1% East Indian, 1% Middle Eastern, and 4% Other (e.g., Aboriginal-European, Aboriginal-Black, and Bi-Racial). Reports by adolescents revealed that 72% of adolescents

experienced 3 or fewer household moves in their lifetime, 22% of adolescents experienced 4 to 7 household moves, and 6% of adolescents experienced 8 or more household moves in their lifetime.

Seventy-seven percent of adolescents indicated that their families *never* experienced financial difficulties, 20% *sometimes* experienced financial difficulties, and 2% of adolescents indicating that their families *often* faced financial problems. One percent of adolescents did not respond to this question. Of those families who *sometimes* or *often* faced financial difficulties, 79% of adolescents indicated that their family sometimes or often had trouble paying for basic necessities (including food, rent, or clothing), 54% indicated that their family sometimes or often had trouble paying for things they need for school (e.g., school supplies or field trips), and 91% indicated that their family sometimes or often had trouble paying for things that they like to do (e.g., playing on sports teams or going on vacation). Overall, 8% of adolescents indicated that their family had previously received welfare assistance.

Procedure

Informed and written consent was obtained from parents (or guardians) and adolescents. A trained interviewer administered the HYS through individual interviews with the adolescent in their home or another private place. The interviewer read the questions aloud and the adolescent recorded their own answers. All responses were placed in an envelope and sealed to maintain confidentiality. On average, it took adolescents 1 hour and 15 minutes to complete the survey. Adolescents received a \$25.00 gift certificate for a music or food store for their participation at each interview.

Measures

Peer Victimization was measured from adolescents' self-reports using the Social Experiences Questionnaire (SEQ; Crick & Grotpeter, 1996; see Appendix A). Peer victimization experiences were evaluated by two subscales of the SEQ: relational victimization and physical victimization. Each subscale also contained five items. Adolescents rated how often they experienced *physical victimization* (e.g., "How often do you get pushed or shoved by your peers?"), and *relational victimization* (e.g., "How often do your peers tell lies about you to make others not like you anymore?") on a 3-point Likert scale (1 = never, 2 = sometimes, or 3 = almost all the time). Total scores were computed by summing each adolescent's scores for the items within the physical victimization scale and the relational victimization scale respectively. Total scores could range from 5 to 15 for both scales. Cronbach's alphas for each of the subscales in the current study were $\alpha = .67$ and $.64$, and $.68$ for physical victimization at T1, T2, and T3 respectively, and $\alpha = .73$, $.72$, and $.71$ for relational victimization at T1, T2, and T3 respectively.

Father and Mother Emotional Support (ES). Adolescents were asked to answer items that assessed parent emotional support with reference to individuals they considered their father and mother including biological, adoptive, step, foster, or other parental figures. Adolescents answered questions on *father emotional support* with reference to the following individuals at T1: 90% ($n = 577$) were biological fathers, 5% ($n = 32$) were stepfathers, 2% ($n = 13$) were adoptive fathers, .8% ($n = 5$) were mothers' boyfriends, .5% ($n = 3$) were grandfathers, and .5% ($n = 3$) were other father figures including a mentor, brother-in-law, and family friend. Six adolescents (.9%) indicated

that they had no father figure. At T2, father emotional support items were completed with reference to 91% ($n = 508$) biological fathers, 5% ($n = 26$) stepfathers, 2% ($n = 9$) adoptive fathers, .4% ($n = 2$) grandfather, and 1% ($n = 7$) other father figures including a mother's boyfriend, mentor, and brother-in law. Four adolescents (.7%) indicated that they had no father figure. At T3, father emotional support items were completed with reference to 91% ($n = 472$) biological fathers, 5% ($n = 26$) stepfathers, 2% ($n = 9$) adoptive fathers, .6% ($n = 3$) grandfathers, and .8% ($n = 4$) other father figures including a mother's boyfriend, mentor, brother-in law, and family friend. Four adolescents (.8%) indicated that they had no father figure. Adolescents answered questions on *mother emotional support* with reference to the following individuals at T1: 97% ($n = 622$) biological mothers, 1.6% ($n = 10$) adoptive mothers, .5% ($n = 3$) stepmothers, and .5% ($n = 3$) were other mother figures including a foster mother, grandmother, and half sister. One adolescent (.2%) did not identify their maternal support provider. At T2, items were completed with reference to 98% ($n = 547$) biological mothers, 1.4% ($n = 8$) adoptive mothers, .2% ($n = 1$) stepmothers, and .4% ($n = 2$) other mother figures. At T3, items were completed with reference to 98% ($n = 506$) biological mothers, 1.5% ($n = 8$) adoptive mothers, .4% ($n = 2$) stepmothers, and .4% ($n = 2$) other mother figures.

Father and mother emotional support was assessed using Schaefer's (1965) inventory of parental behaviours (see Appendix B). Adolescents rated how much they felt that five statements were like their father and mother separately (e.g., "My father is a person who understands my problems and worries"; "My mother is a person who is able to make me feel better when I am upset") on a 3-point Likert scale (1 = not like him/her, 2 = somewhat like him/her, or 3 = like him/her). Total scores were computed by

summing each adolescent's scores for the items within the father emotional support scale and the mother emotional support scale respectively. Total scores could range from 5 to 15 for both scales. Cronbach's alphas were adequate at T1 ($\alpha = .77$ and $.75$ for father emotional support and mother emotional support respectively), at T2 ($\alpha = .79$ and $.76$ for father emotional support and mother emotional support respectively), and at T3 ($\alpha = .83$ and $.73$ for father emotional support and mother emotional support respectively).

The degree of interaction between adolescents and their parental figures may affect adolescents' reports of perceived support from fathers and mothers. Thus, adolescent-reports on their current living situation was used to identify if they lived with the parental figures that they identified as their father and mother emotional support providers. An independent samples t-test was used to examine mean differences in levels of father emotional support for adolescents living with and without their identified father emotional support provider at each time point. For T3 only, adolescents who lived with their father emotional support provider reported significantly higher levels of emotional support ($M = 13.07$, $SD = 2.10$) compared to those who did not [$M = 12.53$, $SD = 2.61$; $t(329) = 2.39$, $p < .05$]. The magnitude of the effect (Cohen's $d = .23$) was small. Differences in levels of mother emotional support based on living status with or without mother emotional support providers were not significant at T1, T2, or T3.

Friend Emotional Support was assessed from adolescent-reports on their experiences with friends using the Perceived Social Support from Friends measure (PSS-Fr; Procidano & Heller, 1983; see Appendix C). Adolescents were presented with nine statements related to feelings and experiences in their relationships with their friends, and adolescents were asked to indicate whether they received various forms of emotional

support from their friends (e.g., “I rely on my friends/peers for emotional support”) using a scale of 0 = no, 1 = yes, or 2 = don’t know. Total scores could range from 0 (no perceived emotional support) to 9 (maximum perceived emotional support) as provided by friends. The “don't know” category was not scored. Cronbach’s alphas were $\alpha = .72$, $.67$, and $.67$ for friend emotional support at T1, T2, and T3 respectively.

Dating Partner Emotional Support was tapped using questions developed by the HYS team that reflect positive relations with dating partners (see Appendix D). *Dating* was defined as, “seeing someone or going out with someone who is more than just a friend (could be a boyfriend or girlfriend).” Adolescents who indicated that they were currently dating responded to three questions: “I feel a strong bond with my dating partner”, “My dating partner and I are really important to each other”, and “I can rely on my dating partner”, on a scale of 1 = not at all true, 3 = sometimes true, and 5 = very true. If adolescents were currently dating more than one person, adolescents were asked to answer these questions about the dating partner that they had the most involvement with. Total scores were computed by summing the scores for the three questions (range 3 to 15). Cronbach’s alphas were moderate for dating partner emotional support ($\alpha = .69$ for T1, $.80$ for T2, and $.80$ for T3).

Internalizing Problems were measured from adolescents’ responses to the Brief Child and Family Phone Interview (BCFPI; Cunningham, Pettingill, & Boyle, 2001; see Appendix E). The *internalizing problems scale* contains 18 items that tap into separation anxiety (e.g., “Do you notice that you feel sick before being separated from those you are close to?”), general anxiety (e.g., “Do you notice that you worry about doing better at things?”), and depressed mood (e.g., “Do you notice that you have trouble enjoying

yourself?”). Adolescents rated how often the experiences described in these 18 items occurred on a 3-point Likert-type scale (never, sometimes, or often). Total scores were computed by summing each adolescent’s scores for the items within the internalizing problems scales respectively (range 18 to 54). Reliabilities for each of the scales in the current study were strong ($\alpha = .85$ for internalizing problem scale at T1, $\alpha = .87$ at T2, and $\alpha = .87$ at T3).

Data Screening

An examination of the data set revealed that missing data were scattered randomly. Ipsative mean imputation (Schafer & Graham, 2002) was used to handle missing data *at the level of the scale scores*: the mean of the adolescent’s own score for each of their missing item was imputed to replace missing item values if they had completed at least 80% of the items for a given scale. Total scale scores were then created by summing each adolescent’s scores for the items within each scale.

Potential outliers were investigated for all variables in the present study (i.e., physical and relational victimization, father emotional support, mother emotional support, friend emotional support, dating partner emotional support, and internalizing problems) at Time 1 (T1), Time 2 (T2), and Time 3 (T3). Cases with standardized scores in excess of ± 3.29 ($p < .001$, two-tailed test) were considered as potential univariate outliers (Tabachnick & Fidell, 2007). An examination of the standardized scores revealed 29 outliers in total with z-scores greater than 3.29 for physical victimization, 23 outliers in total for relational victimization, and 3 outliers in total for internalizing problems across T1, T2, and T3. Total outliers with z-scores greater than -3.29 across the three time points were also found for the following: 21 outliers for father emotional support; 25

outliers for mother emotional support; 30 for friend emotional support; and 5 for dating partner emotional support. Following the guidelines provided by Tabachnick and Fidell (2007), outliers were assigned a raw score that was one unit smaller (or larger for emotional support variables) than the next most extreme score in the distribution to reduce the impact of the outlier. Potential multivariate outliers were examined using Mahalanobis distance of $p < .001$ (Tabachnick & Fidell, 2007). Probability estimates indicated that there were no multivariate outliers (i.e., no cases with $p < .001$).

Selective attrition was assessed by examining possible differences on the main variables across time between participants who remained in the longitudinal study for all three time points and did not indicate that one or more of their parents had died ($n = 513$) and participants who dropped out at either T2 or T3 and/or indicated that their parent had died ($n = 151$). Findings from multivariate repeated measures analysis of variance did not reveal any between-group differences for physical and relational victimization, emotional support from fathers, mothers, friends, and dating partners, and internalizing problems at any time point.

Statistical Procedures

Hierarchical linear modeling (HLM) was used to examine the hypotheses in this study. This is a statistical approach that is commonly used to assess how each person changes over time (i.e., within-person change) and how these changes differ across people (i.e., between-person change) (Raudenbush & Bryk, 2002; Singer & Willett, 2003). Here, I examined within-person changes in the association between peer victimization and internalizing problems over time. Analyses were conducted to investigate the effect of emotional support on these longitudinal associations, and

whether pathways differed by adolescents' developmental transition group and sex. HLM has the following advantages: it assesses within-person changes that are independent of differences between individuals, allows handling for missing data, has the ability to include time-varying covariates and predictors of rates of change, and takes account of unequal error variances within individuals. Other analytical techniques including multivariate repeated measures analyses are limited by the assumption that there are no differences in variability between individuals (where a single regression equation is estimated for all individuals). In HLM, both fixed effects (average person intercepts and slopes) and random effects (individual variability across measurement occasion) are estimated.

For the present study, multilevel equations were specified at two levels using HLM 6.06 (Raudenbush, Bryk, & Congdon, 2004). As illustrated by Raudenbush & Bryk (2002), the Level 1 model (see Equation 1) fits an individual slope for each person where performance y for an individual i on a given measurement occasion j is a function of the average individuals performance at baseline (π_{0i}), plus a slope parameter (π_{1i}) that indicates the average individuals rates of change across time, plus a random measurement error term (ε_{ij}) that indicates within-person residual variance for the individuals best fitting slope. When Level 1 time is centered at a zero, π_{0i} is interpreted as person i 's expected score at baseline.

$$y_{ij} = \pi_{0i} + \pi_{1i}(\text{Time}_{ij}) + \varepsilon_{ij} \quad (1)$$

The Level 2 model considers the Level 1 intercepts and slopes as dependent measures to estimate between-person variance in these with-in person parameters. Specifically, Level 2 equations (see Equations 2 and 3) estimate between-person variance

in Level 1 intercepts (π_{0i}) and slopes (π_{1i}) by modeling these parameters as a function of the population mean (average) intercept (β_{00}) or slope (β_{10}), plus a random intercept (r_{0i}) or slope (r_{1i}) that represents each individual's deviation from these averages. The random effects assess whether baseline performance and rates of change are equivalent across individuals.

$$\pi_{0i} = \beta_{00} + r_{0i} \quad (2)$$

$$\pi_{1i} = \beta_{10} + r_{1i} \quad (3)$$

Estimating trajectories of internalizing problems. First, I examined the developmental trajectory of internalizing problems across the four-year period. Following the models illustrated above, specific Time-Level 1 model (see Equation 4) were fitted and tested.

$$\text{Internalizing Problems}_{ij} = \pi_{0i} + \pi_{1i}(\text{TIS}_{ij}) + \varepsilon_{ij} \quad (4)$$

Equation 4 estimates individual rates of internalizing problems as a function of time in study (TIS) across the four-year period. Each time point was indexed as years and months since baseline testing for each individual (i.e., TIS at baseline = 0; TIS1 = Age at T2 - Age at T1; TIS2 = Age at T3 - Age at T1).

To examine developmental transition group and sex differences in the trajectory of internalizing problems over time, transition group and sex variables were added in the Level 2 models (see Equations 5 and 6).

$$\pi_{0i} = \beta_{00} + \beta_{01}(\text{transition group}_i) + \beta_{02}(\text{sex}_i) + r_{0i} \quad (5)$$

$$\pi_{1i} = \beta_{10} + \beta_{11}(\text{transition group}_i) + \beta_{12}(\text{sex}_i) + r_{1i} \quad (6)$$

Transition group and sex were included in the models for both the intercept (Equation 5) and slope (Equation 6) to assess between-person differences in initial levels of

internalizing problems at T1 and between-person differences in rates of change over time. Transition group was dummy coded with adolescents in the mid-adolescent transition group (aged 12 to 15 years at baseline testing) being assigned a value of 0 and adolescents in the late adolescent transition group (aged 16 to 19 years at baseline testing) being assigned a value of 1. Sex was also dummy coded with boys assigned a value of 0 and girls assigned a value of 1. These variables were modeled simultaneously to consider *unique* contributions of each predictor while controlling for the influence of the others.

Examining the time-varying covariation between internalizing problems and peer victimization by developmental transition group. Two time-varying covariance models were constructed to assess whether levels of physical or relational victimization co-varied with internalizing problems over time for each developmental transition group separately. In addition to changes in internalizing problems due to time, physical victimization (see Equation 7) and relational victimization (see Equation 8) were included independently,¹ as time-varying covariates in the Level 1 model. In this case, the slope parameter (π_{1i}) represents individual rates of linear change in internalizing problems across time, while the slope parameter (π_{2i}) assessed whether higher levels of physical or relational victimization respectively, on specific occasions were associated with higher internalizing problem scores independent of linear changes across time. As before, time in study (TIS) was parameterized as years and months since baseline testing, and physical and relational victimization was centered at zero to represent no physical and relational victimization.

¹ Given that there were only three data time points used in the present study, only two variables were available to be estimated (i.e., K-1 degrees of freedom). Thus, models were constructed by including time and by including either physical or relational victimization as time-varying covariates in the Level 1 model.

$$\text{Internalizing Problems}_{ij} = \pi_{0i} + \pi_{1i}(\text{TIS}_{ij}) + \pi_{2i}(\text{physical victimization}_{ij}) + \varepsilon_{ij} \quad (7)$$

$$\text{Internalizing Problems}_{ij} = \pi_{0i} + \pi_{1i}(\text{TIS}_{ij}) + \pi_{2i}(\text{relational victimization}_{ij}) + \varepsilon_{ij} \quad (8)$$

To examine sex differences in the time-varying covariation between physical or relational victimization and internalizing problems, sex was added in the Level 2 models (see Equations 9 to 11).

$$\pi_{0i} = \beta_{00} + \beta_{01}(\text{sex}_i) + r_{0i} \quad (9)$$

$$\pi_{1i} = \beta_{10} + \beta_{11}(\text{sex}_i) + r_{1i} \quad (10)$$

$$\pi_{2i} = \beta_{20} + \beta_{21}(\text{sex}_i) + r_{2i} \quad (11)$$

Sex was included in the models for both the intercept (Equation 9) and slopes (Equations 10 and 11) to assess between-person differences in initial levels of internalizing problems at T1 and between-person differences in rates of change over time. Sex was dummy coded with boys assigned a value of 0 and girls assigned a value of 1.

Examining the effect of emotional support and sex (and sex X emotional support interactions) by developmental transition group. I examined individual differences in the time-varying covariation between victimization type and internalizing problems for each developmental transition group separately. Candidate variables (sex, emotional support, and sex X emotional support) were added in the Level 2 models (see Equations 14 to 16). These models evaluated whether sex and each source of emotional support would independently effect the time-varying covariation between physical (see Equation 12) or relational victimization (see Equation 13) and internalizing problems respectively. Sex X emotional support interactions were also examined in the model.

$$\text{Internalizing Problems}_{ij} = \pi_{0i} + \pi_{1i}(\text{TIS}_{ij}) + \pi_{2i}(\text{physical victimization}_{ij}) + \varepsilon_{ij} \quad (12)$$

$$\text{Internalizing Problems}_{ij} = \pi_{0i} + \pi_{1i}(\text{TIS}_{ij}) + \pi_{2i}(\text{relational victimization}_{ij}) + \varepsilon_{ij} \quad (13)$$

$$\pi_{0i} = \beta_{00} + \beta_{01}(\text{sex}_i) + \beta_{02}(\text{emotional support}_i) + \beta_{03}(\text{sexXemotional support}_i) + r_{0i} \quad (14)$$

$$\pi_{1i} = \beta_{10} + \beta_{11}(\text{sex}_i) + \beta_{12}(\text{emotional support}_i) + \beta_{13}(\text{sexXemotional support}_i) + r_{1i} \quad (15)$$

$$\pi_{2i} = \beta_{20} + \beta_{21}(\text{sex}_i) + \beta_{22}(\text{emotional support}_i) + \beta_{23}(\text{sexXemotional support}_i) + r_{2i} \quad (16)$$

Sex, emotional support, and sex X emotional support interactions were included in the models for both the intercept (Equation 14) and slopes (Equations 15 and 16) to assess between-person differences in initial levels of internalizing problems at T1 and between-person differences in rates of change over time. Sex was dummy coded with boys being assigned a value of 0 and girls being assigned a value of 1. Initial levels of emotional support were also dummy coded for each source of support from fathers, mothers, and friends. Specifically, adolescents with low to moderate levels of emotional support were assigned a value of 0 (i.e., total scores were 1 SD below the mean or lower), and adolescents with moderate to high levels of emotional support were assigned a value of 1 (i.e., total scores were higher than 1 SD below the mean). These variables were modeled simultaneously to consider *unique* contributions of each predictor while controlling for the influence of the others.

Chapter IV: Results

Descriptive Statistics

Means and standard deviations (by totals and developmental transition group) and ranges are presented in Table 1, and Pearson's correlations between all variables are shown in Table 2. Internalizing problems were significantly correlated with physical victimization ($r_s = .12$ to $.32$) and relational victimization ($r_s = .16$ to $.37$) at each time point and across time. Correlations between physical victimization and relational victimization were small to moderate ($r_s = .19$ to $.43$) concurrently and across time. Mother emotional support was correlated with father emotional support ($r_s = .09$ to $.23$) and friend emotional support ($r_s = .09$ to $.21$) concurrently and over time. Father emotional support was concurrently correlated with friend emotional support ($r_s = .08$ to $.15$), but not over time.

T1 father emotional support was significantly and negatively correlated with physical victimization at T1 ($r = -.10$) and T2 ($r = -.10$), but not at T3. T1 father emotional support was significantly and negatively correlated with relational victimization at T3 ($r = -.10$), but not at T1 or T2. Also, T1 father emotional support was significantly and negatively correlated with reports of internalizing problems at T1 ($r = -.15$), T2 ($r = -.18$), and T3 ($r = -.18$).

T1 mother emotional support had significant and negative correlations with physical victimization at T1 only ($r = -.12$), and with relational victimization at T2 ($r = -.13$) and T3 ($r = -.09$). T1 mother emotional support was significantly and negatively correlated with internalizing problems at T1 ($r = -.13$), T2 ($r = -.13$), and T3 ($r = -.13$).

Table 1. Means and Standard Deviations (by Totals and Developmental Transition Group) at T1, T2, and T3

Variable	Overall					Transition Group						Group
	Mean (SD)			Time	Range	T1		T2		T3		
	T1	T2	T3			Mid	Late	Mid	Late	Mid	Late	
Physical V	5.70 (1.06)	5.39 (.80)	5.74 (1.07)	** ^b	5-15	5.81 (1.13)	5.45 (.82)	5.53 (.94)	5.17 (.48)	5.87 (1.18)	5.58 (.88)	**
Relational V	5.95 (1.36)	5.68 (1.12)	5.91 (1.30)	** ^b	5-15	6.11 (1.50)	5.82 (1.18)	5.83 (1.23)	5.48 (.92)	6.01 (1.37)	5.78 (1.20)	*
Father ES	13.08 (2.00)	12.70 (2.21)	12.88 (2.30)	** ^c	5-15	13.32 (1.85)	12.84 (2.11)	12.78 (2.16)	12.60 (2.19)	13.03 (2.23)	12.75 (2.33)	<i>ns</i>
Mother ES	14.02 (1.45)	13.76 (1.64)	13.87 (1.55)	* ^a	5-15	14.20 (1.33)	13.82 (1.52)	13.83 (1.61)	13.74 (1.61)	13.77 (1.70)	14.00 (1.31)	<i>ns</i>
Friend ES	7.72 (1.53)	7.71 (1.55)	7.91 (1.45)	* ^d	0-9	7.72 (1.53)	7.86 (1.39)	7.64 (1.59)	7.89 (1.46)	7.92 (1.43)	8.03 (1.42)	<i>ns</i>
Internalizing P	30.20 (6.06)	31.05 (6.22)	31.62 (6.23)	** ^d	18-54	29.55 (6.06)	31.41 (5.81)	30.59 (6.19)	31.31 (6.07)	31.69 (6.36)	31.59 (6.03)	<i>ns</i>

Note. V = Victimization. ES = Emotional support. P = Problems. * $p < .01$, ** $p < .001$. *ns* = not significant. Standard deviations are in parentheses. Mid-adolescent transition group = ages 12 to 15 years. Late adolescent transition group = ages 16 – 19 years.

^a Significant main effect of Time for T1.

^b Significant main effect of Time for T2.

^c Significant main effect of Time between T1 and T2 only.

^d Significant main effect of Time for T3.

Table 2. *Intercorrelations of Variables at T1, T2, & T3*

Variable	1			2			3			4			5			6			7			Sex
	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	
1. Physical V																						
T1 (N=639)	-																					-.21
T2 (N=558)	.41	-																				-.13
T3 (N=517)	.33	.40	-																			-.16
2. Relational V																						
T1 (N=639)	.43	.25	.26	-																		.08
T2 (N=558)	.26	.36	.24	.40	-																	.07
T3 (N=517)	.19	.21	.35	.30	.41	-																.10
3. Father ES																						
T1 (N=633)	-.10	-.10	-.09	-.06	-.06	-.10	-															-.06
T2 (N=548)	-.05	-.14	-.10	-.05	-.11	-.13	.58	-														-.06
T3 (N=511)	-.00	-.04	-.08	-.03	-.04	-.11	.45	.60	-													-.04
4. Mother ES																						
T1 (N=639)	-.12	-.00	-.08	-.05	-.13	-.09	.23	.09	.09	-												-.00
T2 (N=558)	-.15	-.09	-.16	-.08	-.20	-.15	.10	.17	.14	.47	-											.12
T3 (N=518)	-.10	-.16	-.17	-.10	-.11	-.19	.10	.13	.20	.32	.49	-										.09
5. Friend ES																						
T1 (N=576)	-.20	-.15	-.13	-.20	-.05	-.02	.15	.08	.00	.17	.11	.12	-									.31
T2 (N=543)	-.12	-.19	-.13	-.10	-.15	-.01	.07	.08	.06	.09	.21	.15	.46	-								.34
T3 (N=504)	-.16	-.16	-.07	-.12	-.11	-.10	.08	.06	.12	.11	.12	.15	.39	.49	-							.27
6. Dating ES																						
T1 (N=140)	-.01	.07	.07	-.01	-.13	.03	-.18	-.24	-.24	.14	.06	.10	-.01	.14	.20	-						.05
T2 (N=204)	-.10	-.15	-.15	.00	-.13	-.10	-.01	.08	.11	.11	.09	.01	.04	.14	.22	.13	-					.07
T3 (N=241)	-.10	-.09	-.12	.01	-.03	.06	-.00	.06	.14	.01	.13	.16	.22	.24	.17	.08	.35	-				.21
7. Internalizing P																						
T1 (N=639)	.18	.15	.13	.33	.21	.16	-.15	-.08	-.07	-.13	-.12	-.02	.03	-.04	-.06	.01	.17	.00	-			.15
T2 (N=557)	.12	.20	.23	.24	.33	.28	-.18	-.15	-.12	-.13	-.22	-.11	-.04	-.13	-.04	.08	-.02	-.04	.58	-		.12
T3 (N=517)	.14	.17	.32	.25	.22	.37	-.18	-.19	-.13	-.13	-.12	-.18	-.05	-.09	-.07	.04	-.02	-.00	.47	.62	-	.12

Note. Significant correlations ($p < .05$, two-tailed) are in bold. V = Victimization. ES = Emotional support. P = Problems. Sex (0 = male, 1 = female).

T1 friend emotional support was significantly and negatively correlated with physical victimization at T1 ($r = -.20$), T2 ($r = -.15$), and T3 ($r = -.13$), and with relational victimization at T1 ($r = -.20$) only. *T1 friend emotional support* was not correlated with internalizing problems across time.

Possibly due to small participant numbers, *T1 dating partner support* was not significantly correlated with internalizing problems, or the predictor variables of physical victimization and relational victimization at any time point. *Dating partner support* was not analyzed further.

Sex was significantly and negatively correlated with physical victimization across time ($r = -.21$ at T1; $r = -.13$ at T2; $r = -.16$ at T3), indicating that boys were experiencing physical victimization more often compared to girls. Sex was significantly and positively correlated with relational victimization at T1 ($r = .08$) and T3 ($r = .10$), indicating that girls were experiencing relational victimization more often compared to boys at T1 and T3 only. Further, sex was significantly and positively correlated with mother emotional support at T2 ($r = .12$) and T3 ($r = .09$), with friend emotional support across time ($r = .31$ at T1; $r = .34$ at T2; $r = .27$ at T3), and with internalizing problems across time ($r = .15$ at T1; $r = .12$ at T2; $r = .12$ at T3). Thus, girls reported receiving emotional support from mothers (at T2 and T3 only), and from friends more often than boys at each time point. Also, girls reported experiencing internalizing problems more often than boys at each time point.

Correlations by developmental transition group (*mid-adolescent transition group* aged 12-15 years; *late adolescent transition group* aged 16-19 years) are depicted in Table 3. Correlations were similar to those reported previously except for a few

Table 3. *Intercorrelations of Variables at T1, T2, & T3 (by Transition Group)*

Variable	1			2			3			4			5			6			7			8
	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	T1	T2	T3	
1. Physical V																						
T1	-	.25	.34	.27	.15	.08	-.10	-.00	-.01	-.17	-.04	-.01	-.14	-.00	-.09	.04	-.17	-.11	.01	.16	.14	-.28
T2	.45	-	.30	.06	.04	.02	-.11	-.15	-.10	-.00	.06	-.02	-.19	-.15	-.19	.16	-.22	-.12	-.01	.15	.08	-.25
T3	.31	.42	-	.21	.14	.30	.00	-.02	-.10	-.07	-.06	-.05	-.06	-.06	-.02	-.03	-.18	-.11	.14	.25	.30	-.17
2. Relational V																						
T1	.49	.30	.27	-	.44	.36	-.18	-.12	-.10	-.05	-.02	-.06	-.11	.05	.04	.10	-.05	.11	.28	.31	.29	.14
T2	.29	.45	.26	.37	-	.37	-.07	-.12	.03	-.12	-.11	-.05	.01	-.02	.03	.02	-.10	-.03	.17	.30	.23	.04
T3	.22	.26	.36	.26	.42	-	-.01	-.05	-.05	-.04	-.04	-.07	-.03	.02	-.02	-.05	-.08	.07	.17	.30	.34	.13
3. Father ES																						
T1	-.13	-.15	-.17	-.01	-.08	-.18	-	.60	.53	.14	-.00	.01	.16	.12	.14	-.24	.05	.03	-.11	-.06	-.03	-.03
T2	-.09	-.16	-.15	-.02	-.12	-.19	.56	-	.60	.00	.04	-.05	.04	.07	.13	-.33	.20	.09	-.10	-.07	-.03	-.04
T3	-.02	-.05	-.09	-.00	-.09	-.15	.37	.60	-	-.00	.00	.06	-.02	.08	.14	-.35	.12	.24	-.03	-.02	-.03	.00
4. Mother ES																						
T1	-.12	-.05	-.11	-.08	-.17	-.16	.30	.16	.17	-	.53	.55	.25	.21	.17	.11	.06	.03	-.07	-.04	-.06	.10
T2	-.22	-.17	-.22	-.11	-.26	-.23	.18	.27	.24	.43	-	.54	.15	.29	.16	.05	.08	.22	-.08	-.17	-.09	.18
T3	-.12	-.18	-.21	-.11	-.12	-.25	.17	.24	.30	.21	.47	-	.14	.19	.17	.20	.08	.19	-.03	-.08	-.13	.17
5. Friend ES																						
T1	-.23	-.13	-.16	-.25	-.08	-.00	.15	.10	.03	.11	.08	.10	-	.41	.37	-.01	.00	.08	.11	-.07	-.10	.28
T2	-.17	-.19	-.15	-.15	-.21	-.01	.04	.08	.05	.01	.15	.12	.50	-	.53	.09	.12	.23	.03	-.15	-.08	.34
T3	-.19	-.14	-.09	-.19	-.17	-.13	.05	.01	.11	.08	.10	.14	.39	.46	-	.29	.27	.15	.13	.02	-.04	.25
6. Dating ES																						
T1	-.03	.12	.26	-.13	-.26	.18	-.10	-.12	-.03	.19	.04	-.05	.08	.19	.02	-	.13	-.06	.10	.17	.09	.08
T2	-.05	-.13	-.13	.05	-.17	-.13	-.11	-.09	.09	.18	.10	-.06	.11	.16	.14	.20	-	.34	.16	.06	.03	.11
T3	-.15	-.14	-.16	-.10	-.06	.01	-.04	.03	.00	-.05	.05	.18	.39	.24	.19	.51	.38	-	.02	-.05	-.04	.17
7. Internalizing																						
T1	.31	.28	.17	.39	.28	.19	-.16	-.07	-.09	-.15	-.15	-.03	-.03	-.11	-.20	-.13	-.18	-.00	-	.58	.54	.24
T2	.12	.25	.24	.22	.36	.28	-.27	-.21	-.19	-.20	-.26	-.13	-.02	-.13	-.09	.00	-.12	-.02	.58	-	.64	.04
T3	.15	.22	.34	.23	.22	.39	-.30	-.31	-.20	-.18	-.15	-.21	-.02	-.09	-.09	-.01	-.10	.02	.44	.61	-	.04
8. Sex	-.17	-.09	-.16	.04	.09	.08	-.10	-.08	-.08	-.10	.07	.05	.34	.34	.28	-.00	.01	.25	.09	.18	.18	-

Note. Significant correlations ($p < .05$, two-tailed) are in bold. V = Victimization. ES = Emotional support. Sex (0 = male, 1 = female).

Correlations for the mid-adolescent transition group (12 to 15 years) are depicted in the lower left quadrant of the table. Correlations for the late adolescent transition group (16 to 19 years) are presented in the upper right quadrant of the table.

correlations associated with the late adolescent transition group. In particular, concurrent correlations between physical and relational victimization were significant except at T2. Physical victimization was significantly correlated with internalizing problems over time except at T1. Also, emotional support from fathers, mothers, and friends were not correlated with internalizing problems over time.

Time-Based Trajectory of Internalizing Problems

Table 4 summarizes results from analyses that examined the time-based trajectory of internalizing problems over time. The slope coefficient for time (β_{10}) indicated a significant increase in internalizing problems ($\beta = 0.31, p < .001$) over time. This represented an average increase of 1.02% ($0.31 / 30.36$) in internalizing problems for each additional year from baseline. Over the course of time, average levels of internalizing problems increased by 4.08% ($1.02\% \times 4$ years). Furthermore, the random slope effect in the level 2 (r_1) model was significant which indicates reliable between-person differences about the average internalizing problems slope.

To identify between-person differences in the internalizing problems trajectory, developmental transition group and sex were included in the level 2 model (see Equations 5 and 6). These variables were modeled simultaneously to consider *unique* contributions of each predictor while controlling for the influence of the others. Findings are depicted in Table 5. Intercepts for transition group and sex indicated significant differences in internalizing problems at baseline testing. The slope coefficient for time (β_{10}) remained significant in showing an overall increase in internalizing problems ($\beta = 0.64, p < .001$) over time. Sex did not significantly impact the trajectory of internalizing problem, but transition group did ($\beta = -0.59, p < .001$). Specifically, the average adolescent in the *mid-*

Table 4. *Time-based Model: Fixed and Random Effects of Internalizing Problems as a Function of Time in Study*

Internalizing Problems					
Parameter	Coefficient	SE	T ratio	df	p
Fixed Effects					
Intercept (π_{0i})	30.36	0.28	108.04	438	<.001
Slope (π_{1i})	0.31	0.08	4.04	438	<.001
	Variance Component		χ^2	df	p
Random Effects					
Individual-level Intercept (r_0)	23.67		1368.94	438	<.001
Individual-level Slope (r_1)	0.96		695.78	438	<.001
Within-person residual (ϵ)	13.15				

Table 5. *Time-based Model: Fixed and Random Effects of Transition Group and Sex on the Internalizing Problems Trajectory*

Internalizing Problems					
Parameter	Coefficient	SE	T ratio	df	p
Fixed Effects					
Intercept (β_{00})	28.55	0.47	60.37	436	<.001
Transition Group (β_{01})	1.68	0.55	3.08	436	<.01
Sex (β_{02})	1.89	0.55	3.46	436	<.01
Time slope (β_{10})	0.64	0.13	4.71	436	<.001
Transition Group (β_{11})	-0.59	0.15	-4.01	436	<.001
Sex (β_{12})	-0.12	0.15	-0.77	436	0.44
		Variance Component	χ^2	df	p
Random Effects					
Individual-level Intercept (r_0)	22.31		1310.19	436	<.001
Individual-level Slope (r_1)	0.88		671.09	436	<.001
Within-person residual (ϵ)	13.15				

Note. Transition Group (0 = mid-adolescent transition group 12 to 15 years, 1 = late adolescent transition group 16 to 19 years). Sex (0 = male, 1 = female).

adolescent transition group exhibited an average increase of 2.2% ($0.64 / 28.55$) in internalizing problems for each additional year from baseline. Over the course of time, average levels of internalizing problems increased by 8.8% ($2.2\% \times 4$ years). In contrast, the average adolescent in the *late adolescent transition group* exhibited only a slight 0.18% [$(0.64 + -0.59) / 28.55$] increase in internalizing problems each additional year from baseline. In order to assess whether changes in the late adolescent transition group were significantly different from zero, analyses were conducted with the late adolescent transition group coded as 0 and the mid-adolescent transition group coded as 1. Findings indicated that the slope coefficient for time (β_{10}) was not significant ($\beta = 0.03, p = .83$), and internalizing problems were stable for the late adolescent transition group. Due to significant differences between the transition groups, all subsequent analyses were conducted separately for the mid- and late adolescent transition groups.

Time-Based Trajectory of Internalizing Problems by Transition Group

Table 6 summarizes results from analyses that examined the basic time-based trajectory of internalizing problems by developmental transition group over time. Analyses also examined sex differences in the internalizing problems trajectory.

For both transition groups, the slope coefficient for *time* (β_{10}) indicated a significant increase in internalizing problems for adolescents in the *mid-adolescent transition group* ($\beta = 0.36, p < .05$) and the *late adolescent transition group* ($\beta = 0.40, p < .01$) over time. This represented an average increase of 1.3% ($0.36 / 28.74$) for the *mid-adolescent transition group* and of 1.3% ($0.40 / 29.99$) for the *late adolescent transition group* in internalizing problems for each additional year from baseline.

Table 6. *Time-based Model: Fixed and Random Effects of Sex on the Internalizing Problems Trajectory by Transition Group*

Internalizing Problems										
Parameter	Mid-Adolescent Transition Group					Late Adolescent Transition Group				
	Coefficient	SE	T ratio	df	p	Coefficient	SE	T ratio	df	p
Fixed Effects										
Intercept (β_{00})	28.74	0.47	61.76	311	<.001	29.99	0.47	63.29	255	<.001
Sex (β_{01})	1.36	0.67	2.03	311	<.05	2.34	0.71	3.30	255	<.01
Time slope (β_{10})	0.36	0.15	2.47	311	<.05	0.40	0.14	2.89	255	<.01
Sex (β_{11})	0.33	0.20	1.66	311	0.10	-0.63	0.19	-3.29	255	<.01
	Variance Component		χ^2	df	p	Variance Component		χ^2	df	p
Random Effects										
Individual-level Intercept (r_0)	24.80		866.20	278	<.001	21.08		626.22	223	<.001
Individual-level Slope (r_1)	1.18		465.34	278	<.001	0.40		277.72	223	<.01
Within-person residual (ϵ)	13.23					13.18				

Note. Sex (0 = male, 1 = female).

Intercept tests of between-person differences for sex indicated significant differences in internalizing problems at baseline testing for adolescents in the *mid-adolescent* and *late adolescent transition groups*, with girls exhibiting higher initial levels of internalizing problems than boys. Further, sex did not significantly impact the trajectory of internalizing problems for the *mid-adolescent transition group*. On the other hand, sex did significantly impact the trajectory of internalizing problems for the *late adolescent transition group*. Specifically for the *late adolescent transition group*, the average late adolescent boy exhibited an increase of 1.3% ($0.40 / 29.99$) in internalizing problems for each additional year from baseline. The average late adolescent girl exhibited a slight decrease of 0.8% [$(0.40 + -0.63) / 29.99$] in internalizing problems each additional year from baseline. In order to assess whether changes for girls in the late adolescent transition group were significantly different from zero, analyses were conducted with girls coded as 0 and boys coded as 1. Findings indicated that the slope coefficient for time (β_{10}) was not significant ($\beta = -0.23, p = .08$), and hence, internalizing problems remained stable for late adolescent girls.

Time-Varying Covariation Models by Transition Group

Two time-varying covariation models were tested to examine physical and relational victimization, independently, as covariates of with-person trajectories of internalizing problems for each transition group. Analyses controlled for the effect of Sex. Consistent with my directional hypotheses, one-tailed probability tests were applied.

Findings for internalizing problem effects as a function of time and *physical victimization* are depicted by transition group in Table 7. For the *mid-adolescent*

Table 7. *Time-Varying Covariation Model: Fixed and Random Effects of Sex on the Co-Varying Association between Internalizing Problems and Physical Victimization by Transition Group*

Parameter	Internalizing Problems									
	Mid-Adolescent Transition Group					Late Adolescent Transition Group				
	Coefficient	SE	T ratio	df	p	Coefficient	SE	T ratio	df	p
Fixed Effects										
Intercept (β_{00})	22.66	1.61	14.04	311	<.001	28.94	1.73	16.70	255	<.001
Sex (β_{01})	-3.13	2.29	-1.37	311	0.09	-3.26	3.17	-1.03	255	0.15
Time slope (β_{10})	0.37	0.14	2.66	311	<.01	0.40	0.14	2.90	255	<.01
Sex (β_{11})	0.30	0.19	1.58	311	0.06	-0.69	0.19	-3.60	255	<.001
Physical V Slope (β_{20})	1.03	0.27	3.81	846	<.001	0.19	0.29	0.63	677	0.26
Sex (β_{21})	0.87	0.39	2.23	846	<.05	1.10	0.58	1.90	677	<.05
	Variance Component		χ^2	df	p	Variance Component		χ^2	df	p
Random Effects										
Individual-level Intercept (r_0)	19.43		725.22	278	<.001	20.53		609.15	223	<.001
Individual-level Slope (r_1)	0.85		408.45	278	<.001	0.39		274.14	223	<.05
Within-person residual (ϵ)	13.72					13.28				

Note. V = Victimization. Tests of fixed effects are one-tailed. Sex (0 = male, 1 = female).

transition group, there was a significant slope coefficient for time, indicating significant increases in internalizing problems ($\beta = 0.37, p < .01$) over time. Also, the slope coefficient for physical victimization ($\beta = 1.03, p < .001$) was significant for internalizing problems. Specifically from baseline, for every one unit increase in *physical victimization* (i.e., from *never* to *almost all the time*), there was an increase of 4.5% ($1.03 / 22.66$) in internalizing problems that was independent of the time-based increases in internalizing problems. Between baseline and four years later, average levels of internalizing problems increased by 18% ($4.5\% \times 4$ years) for adolescents in the mid-adolescent transition group who reported increases in levels of physical victimization. Findings for the *late adolescent transition group* indicated that there was a significant slope coefficient for time, indicating significant increases in internalizing problems ($\beta = 0.40, p < .01$) over time. On the other hand, the slope coefficient for physical victimization ($\beta = 0.19, p = .26$) was not significant for internalizing problems. Intercept tests of between-person differences for sex did not reveal significant differences in internalizing problems at baseline testing for adolescents in the *mid-adolescent* or *late adolescent transition groups*. Sex significantly impacted the time-varying covariation between internalizing problems and physical victimization for the *mid-adolescent* ($\beta = 0.87, p < .05$) and *late adolescent transition groups* ($\beta = 1.10, p < .05$). In particular for the *mid-adolescent transition group*, the average mid-adolescent boy exhibited an increase of 4.5% ($1.03 / 22.66$) in the time-vary covariation between internalizing problems and physical victimization for each additional year from baseline. The average mid-adolescent girl exhibited an increase of 8.4% [$(1.03 + 0.87) / 22.66$] in the time-vary covariation between internalizing problems and physical victimization for each additional

year from baseline, which is approximately twice the percentage increase of boys. For the *late adolescent transition group*, the average late adolescent girl exhibited an increase of 4.5% $[(0.19 + 1.10) / 28.94]$ in the time-vary covariation between internalizing problems and physical victimization for each additional year from baseline. On the other hand, the time-vary covariation between internalizing problems and physical victimization was not significant for late adolescent boys ($\beta = 0.19, p = .26$).

Findings for internalizing problem effects as a function of time and *relational victimization* are depicted by transition group in Table 8. For the *mid-adolescent transition group*, there was a significant slope coefficient for time ($\beta = 0.42, p < .01$), indicating significant increases in internalizing problems over time. Also, the slope coefficient for relational victimization ($\beta = 1.09, p < .001$) was significant. Specifically, for every one unit increase in *relational victimization* (i.e., from *never* to *almost all the time*), there was an increase of 5% $(1.09 / 22.21)$ in internalizing problems. Between baseline and four years later, average levels of internalizing problems increased by 20% $(5\% \times 4 \text{ years})$ for adolescents in the mid-adolescent transition group who reported increases in levels of relational victimization. Findings for the *late adolescent transition group* indicated that the slope coefficient for time was significant ($\beta = 0.40, p < .01$), indicating significant increases in internalizing problems over time. Further, the slope coefficient for relational victimization ($\beta = 1.05, p < .001$) was significant. Specifically from baseline, for every one unit increase in *relational victimization* (i.e., from *never* to *almost all the time*), there was an increase of 4.3% $(1.05 / 24.14)$ in internalizing problems. Between baseline and four years later, average levels of internalizing problems increased by 17% $(4.3\% \times 4 \text{ years})$ for adolescents in the late adolescent

Table 8. *Time-Varying Covariation Model: Fixed and Random Effects of Sex on the Co-Varying Association between Internalizing Problems and Relational Victimization by Transition Group*

Parameter	Internalizing Problems									
	Mid-Adolescent Transition Group					Late Adolescent Transition Group				
	Coefficient	SE	T ratio	<i>df</i>	<i>p</i>	Coefficient	SE	T ratio	<i>df</i>	<i>p</i>
Fixed Effects										
Intercept (β_{00})	22.21	1.66	13.39	311	<.001	24.14	1.64	14.75	255	<.001
Sex (β_{01})	-0.22	2.11	-0.10	311	0.46	2.09	2.21	0.94	255	0.17
Time slope (β_{10})	0.42	0.15	2.87	311	<.01	0.40	0.14	2.86	255	<.01
Sex (β_{11})	0.28	0.20	1.46	311	0.07	-0.63	0.19	-3.31	255	<.001
Relational V Slope (β_{20})	1.09	0.27	3.99	846	<.001	1.05	0.26	3.97	677	<.001
Sex (β_{21})	0.25	0.34	0.74	846	0.23	0.01	0.36	0.03	677	0.49
		Variance Component	χ^2	<i>df</i>	<i>p</i>	Variance Component	χ^2	<i>df</i>	<i>p</i>	
Random Effects										
Individual-level Intercept (r_0)	20.12		753.91	278	<.001	18.56		573.91	223	<.001
Individual-level Slope (r_1)	0.98		433.88	278	<.001	0.34		268.74	223	<.01
Within-person residual (ϵ)	13.10					13.21				

Note. V = Victimization. Tests of fixed effects are one-tailed. Sex (0 = male, 1 = female).

transition group who reported increases in levels of relational victimization. Intercept tests of between-person differences for sex did not reveal significant differences in internalizing problems at baseline testing for adolescents in the *mid-adolescent* or *late adolescent transition groups*. Also, sex did not significantly impact the time-varying covariation between internalizing problems and relational victimization.

The Effect of Emotional Support, Sex, and Sex X Emotional Support Interactions on the Time-Varying Covariation Models by Transition Group

Analyses were conducted to examine whether initial levels of emotional support from fathers, mothers, and friends² would diminish the time-varying covariation between internalizing problems and victimization type for each transition group. Given the significant effect of sex in previous analyses, sex and sex X emotional support interactions were examined.

Findings on the effect of emotional support, sex, and sex X emotional support interactions on the time-varying covariation between internalizing problems and *physical victimization* are shown by transition group in Table 9. For the *mid-adolescent transition group*, intercept tests of between-person differences for emotional support did not reveal significant differences in internalizing problems at baseline testing. On the other hand, intercept tests for sex X emotional support interactions revealed significant differences in internalizing problems at baseline testing. Findings from these analyses were similar to those already reported with the addition that friend emotional support significantly

² Continuity scores (where emotional support scores at T1, T2, and T3 were combined to reflect total emotional support scores across time) were also used to explore differences in emotional support from fathers, mothers, and friends in the time-varying covariation between internalizing problems and physical or relational victimization. Findings were similar except that the effect of emotional support was not longer significant.

Table 9. *Time-Varying Covariation Model: Fixed and Random Effects of Sex and Emotional Support (and Sex X Emotional Support) on the Co-Varying Association between Internalizing Problems and Physical Victimization by Transition Group*

Parameter	Internalizing Problems									
	Mid-Adolescent Transition Group					Late Adolescent Transition Group				
	Coefficient	SE	T ratio	df	p	Coefficient	SE	T ratio	df	p
Fixed Effects										
Intercept (β_{00})	32.68	8.75	3.73	305	<.001	23.32	4.40	5.31	249	<.001
Sex (β_{01})	-11.05	10.25	-1.08	305	0.14	10.52	12.38	0.85	249	0.20
Father ES (β_{02})	-8.12	6.80	-1.19	305	0.12	4.10	4.21	0.98	249	0.17
Mother ES (β_{03})	-6.44	5.41	-1.19	305	0.12	-4.10	3.22	-1.27	249	0.10
Friend ES (β_{04})	4.30	4.22	1.02	305	0.16	7.44	3.38	2.20	249	<.05
Sex X Father ES (β_{05})	8.57	7.80	1.10	305	0.14	3.39	8.48	0.40	249	0.35
Sex X Mother ES (β_{06})	14.34	7.50	1.91	305	<.05	-9.66	8.98	-1.08	249	0.14
Sex X Friend ES (β_{07})	-14.17	6.25	-2.27	305	<.05	-9.87	10.01	-0.99	249	0.16
Time slope (β_{10})										
Sex (β_{11})	1.31	0.78	1.68	305	<.05	1.61	0.40	4.02	249	<.001
Father ES (β_{12})	-0.36	0.95	-0.38	305	0.35	-2.52	0.74	-3.40	249	<.001
Mother ES (β_{13})	-0.49	0.45	-1.10	305	0.14	-0.42	0.43	-0.99	249	0.16
Friend ES (β_{14})	0.01	0.73	0.01	305	0.50	-0.07	0.32	-0.22	249	0.41
Sex X Father ES (β_{15})	-0.66	0.31	-2.11	305	<.05	-0.98	0.36	-2.74	249	<.001
Sex X Mother ES (β_{16})	0.09	0.60	0.14	305	0.44	0.79	0.58	1.35	249	0.09
Sex X Friend ES (β_{17})	-0.17	0.90	-0.19	305	0.42	0.59	0.55	1.09	249	0.14
Physical V Slope (β_{20})	0.89	0.55	1.61	305	0.05	0.84	0.62	1.34	249	0.09
Sex (β_{21})	-0.57	1.25	-0.46	828	0.32	1.18	0.67	1.77	659	<.05
Father ES (β_{22})	2.75	1.42	1.93	828	<.05	-1.63	2.08	-0.78	659	0.22
Mother ES (β_{23})	1.40	1.05	1.34	828	0.09	-1.00	0.65	-1.53	659	0.06
Friend ES (β_{24})	0.90	0.68	1.33	828	0.09	0.79	0.55	1.45	659	0.07
	-0.64	0.72	-0.89	828	0.19	-1.12	0.53	-2.09	659	<.05

Sex X Father ES (β_{25})	-1.97	1.21	-1.63	828	0.05	-0.26	1.56	-0.17	659	0.43
Sex X Mother ES (β_{26})	-2.22	1.05	-2.11	828	<.05	1.69	1.63	1.03	659	0.15
Sex X Friend ES (β_{27})	2.02	0.91	2.22	828	<.05	1.77	1.75	1.02	659	0.16
	Variance Component		χ^2	<i>df</i>	<i>p</i>	Variance Component		χ^2	<i>df</i>	<i>p</i>
Random Effects										
Individual-level Intercept (r_0)	19.17		716.42	272	<.001	21.19		607.55	217	<.001
Individual-level Slope (r_1)	0.89		408.41	272	<.001	0.35		257.58	217	<.05
Within-person residual (ϵ)	13.35					12.93				

Note. V = Victimization. ES = Emotional support (0 = low, 1 = high). Sex (0 = male, 1 = female). Tests of fixed effects are one-tailed.

impacted the trajectory of internalizing problems for the mid-adolescent transition group. In particular, the average mid-adolescent with low levels of friend emotional support exhibited an increase of 4% (1.31 / 32.68) in internalizing problems for each additional year from baseline. Mid-adolescents with high levels of friend emotional support exhibited an increase of 2% [(1.31+ -0.66) / 32.68] in internalizing problems for each additional year from baseline, which is half the percentage increase of adolescents with low friend emotional support. Further investigation by conducting analyses separately for boys and girls indicated that friend emotional support was particularly important for mid-adolescent boys ($\beta = -0.68, p < .05$). Mid-adolescent boys with high levels of friend emotional support exhibited a smaller increase of 2% [(1.36 + -0.68) / 33.93] in internalizing problems for each additional year from baseline relative to boys with low levels of friend emotional support. Furthermore, the sex X mother emotional support and the sex X peer emotional support interactions, independently, impacted the time-varying covariation between internalizing problems and *physical victimization* for the mid-adolescent transition group. To further investigate these interactions, separate analyses were conducted for boys and girls. Findings indicated that the sex X mother emotional support interaction was significant for mid-adolescent girls ($\beta = -1.29, p < .05$). In particular, mid-adolescent girls with high levels of emotional support from mothers exhibited a smaller increase of 4.2% [(2.19 + -1.29) / 21.53] in the time-varying covariation between internalizing problems and *physical victimization* for each additional year from baseline relative to girls with low levels of mother emotional support (see Figure 1). Moreover, results indicated that the sex X friend emotional support interaction was significant for mid-adolescent girls ($\beta = 1.41, p < .05$). Mid-adolescent girls with

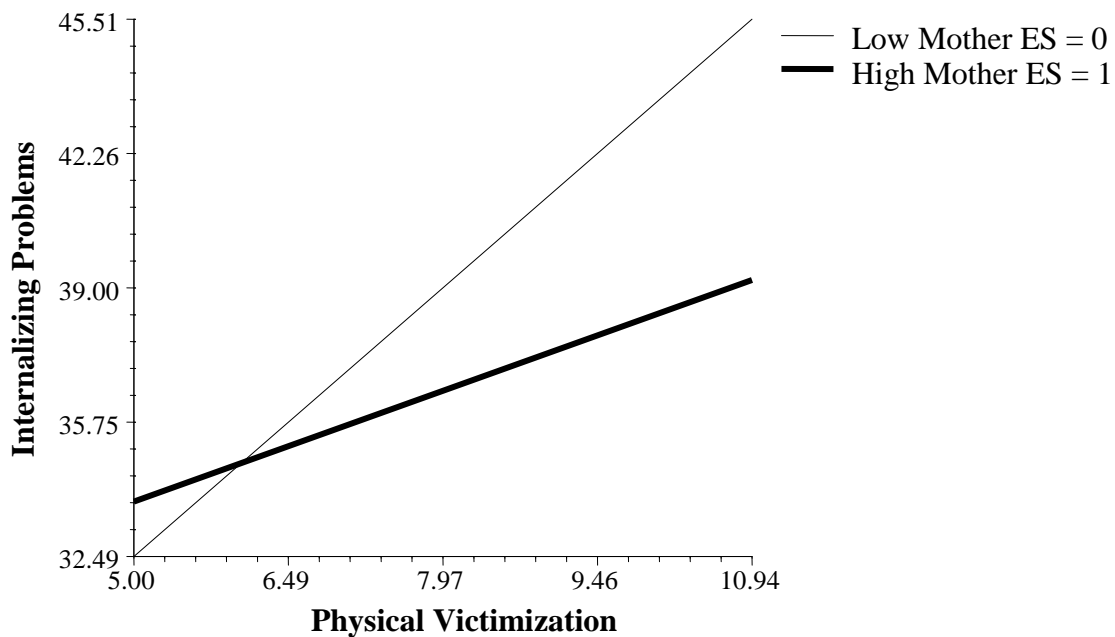


Figure 1. The effect of high and low mother emotional support (ES) on the time-varying covariation between internalizing problems and *physical victimization* for adolescent girls in the *mid-adolescent transition group*.

high levels of friend emotional support exhibited an increase of 16.7% $[(2.19 + 1.41 / 21.53)]$ in the time-varying covariation between internalizing problems and *physical victimization* for each additional year from baseline relative to girls with low levels of friend emotional support (see Figure 2). For the *late adolescent transition group*, intercept tests of between-person differences for friend emotional support revealed significant differences in internalizing problems at baseline testing. On the other hand, intercept tests for sex X emotional support interactions did not reveal significant differences in internalizing problems at baseline testing for late adolescents. Findings from these analyses were similar to those already reported with the addition that friend emotional support significantly impacted the trajectory of internalizing problems. Specifically, the average late adolescent with low levels of friend emotional support exhibited an increase of 7% $(1.61 / 23.32)$ in internalizing problems, compared to adolescents with high levels of friend emotional support who exhibited a smaller increase of 2.7% $[(1.61 + -0.98) / 23.32]$ in internalizing problems for each additional year from baseline. Further investigation by conducting analyses separately for boys and girls indicated that friend emotional support was particularly important for late adolescent boys ($\beta = -0.97, p < .01$). Late adolescent boys with high levels of friend emotional support exhibited a smaller increase of 2.8% $[(1.62 + -0.97) / 23.16]$ in internalizing problems for each additional year from baseline relative to boys with low levels of friend emotional support. Emotional support from friends also significantly impacted the time-varying covariation between internalizing problems and physical victimization. In particular, the average late adolescent with low levels of friend emotional support exhibited an increase of 5.1% $(1.18 / 23.32)$ in the time-varying covariation between

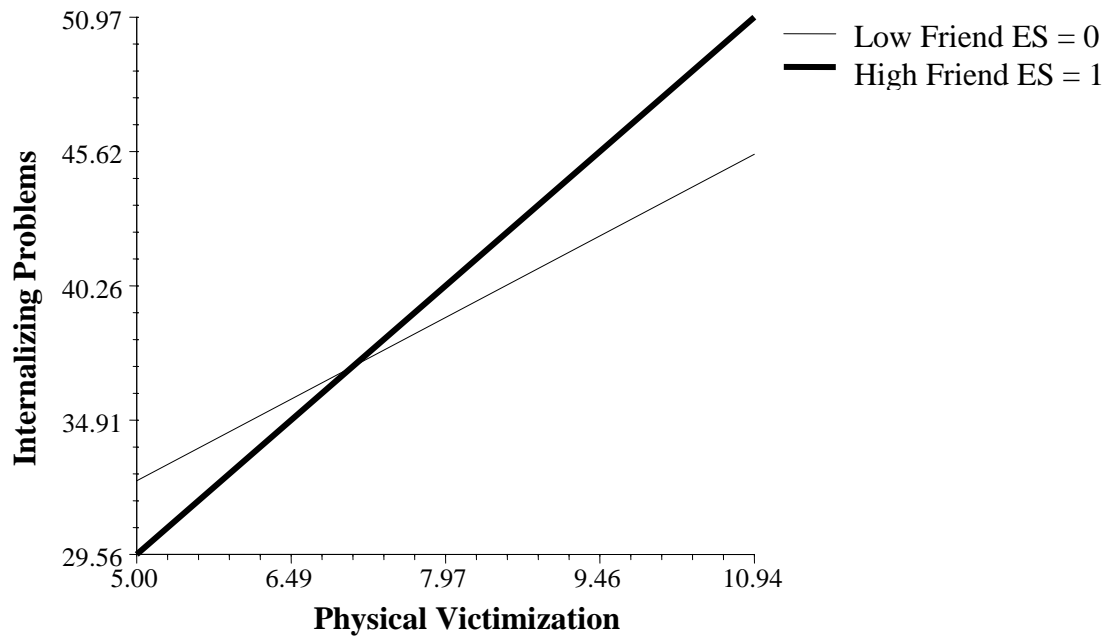


Figure 2. The effect of high and low friend emotional support (ES) on the time-varying covariation between internalizing problems and *physical victimization* for adolescent girls in the *mid-adolescent transition group*.

internalizing problems and *physical victimization* for each additional year from baseline. In comparison, the average late adolescent with high levels of friend emotional support exhibited a small decline of 0.3% $[(1.18 + -1.12) / 23.32]$ in the time-vary covariation between internalizing problems and *physical victimization* for each additional year from baseline. Analyses examining the effect of sex X emotional support interactions on the time-varying covariation between internalizing problems and *physical victimization* were not significant for the late adolescent transition group. However, further investigation by conducting analyses separately for boys and girls revealed a significant effect of friend emotional support on the time-varying covariation between internalizing problems and *physical victimization* for late adolescent boys only ($\beta = -1.15, p < .05$). Specifically, the average late adolescent boy with high levels of friend emotional support exhibited a smaller increase of 0.3% $[(1.21 + -1.15) / 23.16]$ in the time-vary covariation between internalizing problems and *physical victimization* for each additional year from baseline relative to boys with low levels of friend emotional support (see Figure 3). In order to assess whether changes in the effect of high friend emotional support on the time-varying covariation between internalizing problems and *physical victimization* were significantly different from zero, analyses were conducted with high friend emotional support coded as 0 and low friend emotional support coded as 1. Findings indicated that the slope coefficient for physical victimization (β_{20}) was not significant ($\beta = -0.17, p = .31$), and the time-varying covariation between internalizing problems and *physical victimization* was stable for late adolescent boys with high friend emotional support.

Findings on the effect of emotional support, sex, and sex X emotional support interactions on the time-varying covariation between internalizing problems and

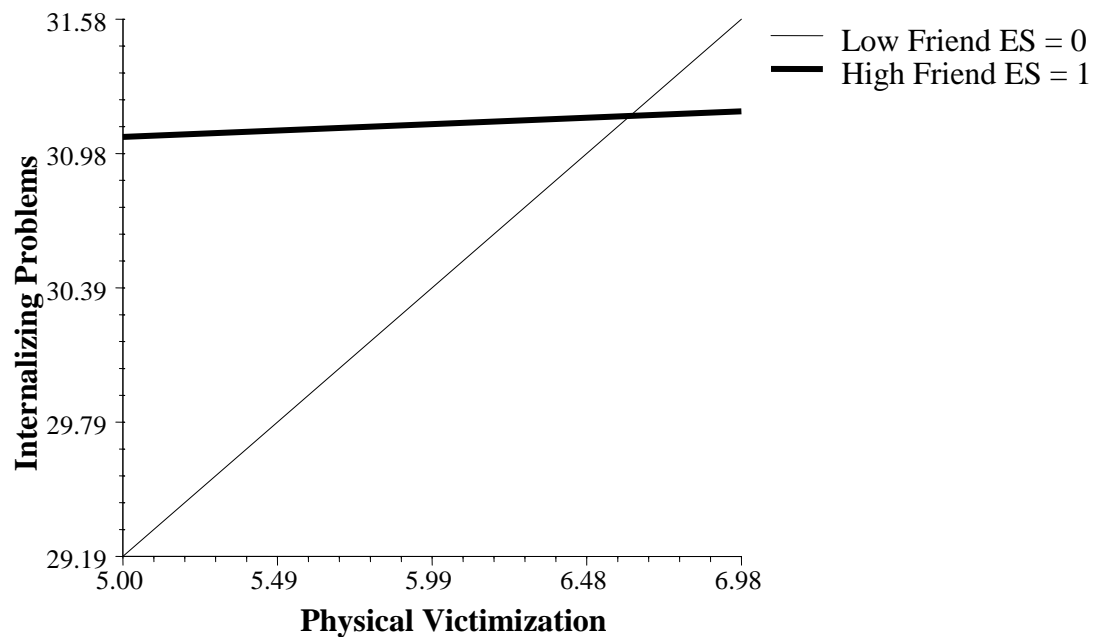


Figure 3. The effect of high and low friend emotional support (ES) on the time-varying covariation between internalizing problems and *physical victimization* for adolescent boys in the *late adolescent transition group*.

relational victimization are shown by transition group in Table 10. For the *mid-adolescent transition group*, intercept tests of between-person differences for friend emotional support revealed significant differences in internalizing problems at baseline testing. Intercept tests for sex X emotional support interactions did not reveal significant differences in internalizing problems at baseline testing. Findings from these analyses were similar to those already reported with the addition that friend emotional support impacted the trajectory of internalizing problems for the mid-adolescent transition group. Specifically, the average mid-adolescent with low levels of friend emotional support exhibited an increase of 4.7% (1.37 / 29.46) in internalizing problems, compared to adolescents with high levels of friend emotional support who exhibited a smaller increase of 2% [(1.37 + -0.78) / 29.46] in internalizing problems for each additional year from baseline. Further investigation by conducting analyses separately for boys and girls indicated that friend emotional support was particularly important for mid-adolescent boys ($\beta = -0.81, p < .01$). Mid-adolescent boys with high levels of friend emotional support exhibited a smaller increase of 2% [(1.40 + -0.81) / 29.35] in internalizing problems for each additional year from baseline relative to boys with low levels of friend emotional support. Emotional support from friends also significantly impacted the time-varying covariation between internalizing problems and *relational victimization* for the mid-adolescent transition group. In particular, the average mid-adolescent with low levels of friend emotional support exhibited a small decrease of 0.1% (-0.03 / 29.46) in the time-varying covariation between internalizing problems and *relational victimization* for each additional year from baseline. In comparison, mid-adolescents with high levels

Table 10. *Time-Varying Covariation Model: Fixed and Random Effects of Sex and Emotional Support (and Sex X Emotional Support) on the Co-Varying Association between Internalizing Problems and Relational Victimization by Transition Group*

Parameter	Internalizing Problems									
	Mid-Adolescent Transition Group					Late Adolescent Transition Group				
	Coefficient	SE	T ratio	df	p	Coefficient	SE	T ratio	df	p
Fixed Effects										
Intercept (β_{00})	29.46	7.90	3.73	305	<.001	27.97	5.29	5.29	249	<.001
Sex (β_{01})	-10.56	10.09	-1.05	305	0.15	6.62	7.43	0.89	249	0.19
Father ES (β_{02})	-3.65	4.63	-0.79	305	0.22	-5.70	3.59	-1.59	249	0.06
Mother ES (β_{03})	-9.67	7.13	-1.36	305	0.09	3.45	2.89	1.20	249	0.12
Friend ES (β_{04})	6.93	3.44	2.01	305	<.05	-2.02	3.66	-0.55	249	0.29
Sex X Father ES (β_{05})	8.12	5.97	1.36	305	0.09	-3.15	5.49	-0.57	249	0.28
Sex X Mother ES (β_{06})	11.00	8.56	1.29	305	0.10	1.08	4.56	0.24	249	0.41
Sex X Friend ES (β_{07})	-8.25	6.81	-1.21	305	0.12	-3.70	5.87	-0.63	249	0.26
Time slope (β_{10})										
Sex (β_{11})	1.37	0.72	1.90	305	<.05	1.61	0.39	4.11	249	<.001
Father ES (β_{12})	-0.55	0.95	-0.58	305	0.28	-2.68	0.69	-3.89	249	<.001
Mother ES (β_{13})	-0.53	0.45	-1.17	305	0.12	-0.45	0.43	-1.04	249	0.15
Friend ES (β_{14})	0.13	0.68	0.19	305	0.43	0.07	0.31	0.22	249	0.41
Sex X Father ES (β_{15})	-0.78	0.32	-2.40	305	<.01	-1.09	0.35	-3.09	249	<.01
Sex X Mother ES (β_{16})	0.35	0.63	0.55	305	0.29	0.67	0.60	1.12	249	0.13
Sex X Friend ES (β_{17})	0.00	0.84	0.00	305	0.50	0.62	0.47	1.33	249	0.09
Relational V Slope (β_{20})	0.65	0.65	1.01	305	0.16	1.15	0.61	1.89	249	<.05
Sex (β_{21})	-0.03	1.10	-0.02	828	0.49	0.38	0.80	0.47	659	0.32
Father ES (β_{22})	2.43	1.33	1.83	828	<.05	-0.81	1.05	-0.78	659	0.22
Mother ES (β_{23})	0.61	0.78	0.78	828	0.22	0.71	0.49	1.44	659	0.07
Friend ES (β_{24})	1.39	0.93	1.50	828	0.07	-0.50	0.48	-1.05	659	0.15
	-1.00	0.59	-1.69	828	<.05	0.57	0.57	0.99	659	0.16

Sex X Father ES (β_{25})	-1.85	0.94	-1.96	828	<.05	1.08	0.84	1.28	659	0.10
Sex X Mother ES (β_{26})	-1.69	1.12	-1.50	828	0.07	-0.56	0.77	-0.73	659	0.23
Sex X Friend ES (β_{27})	1.13	0.87	1.30	828	0.10	0.54	0.82	0.66	659	0.25
	Variance Component		χ^2	<i>df</i>	<i>p</i>	Variance Component		χ^2	<i>df</i>	<i>p</i>
Random Effects										
Individual-level Intercept (r_0)	18.83		713.92	272	<.001	19.29		589.34	217	<.001
Individual-level Slope (r_1)	0.93		417.03	272	<.001	0.32		257.36	217	<.05
Within-person residual (ϵ)	12.99					12.56				

Note. V = Victimization. ES = Emotional support (0 = low, 1 = high). Sex (0 = male, 1 = female). Tests of fixed effects are one-tailed.

of friend emotional support exhibited an even larger decrease of 3.5% $[(-0.03 + -1.00) / 29.46]$ in the time-vary covariation between internalizing problems and *relational victimization* for each additional year from baseline. Moreover, the sex X father emotional support interaction impacted the time-varying covariation between internalizing problems and *relational victimization*. Further investigation by conducting analyses separately for boys and girls revealed that this interaction was significant for girls ($\beta = -1.25, p < .01$). Mid-adolescent girls with high levels of father emotional support exhibited a smaller increase of 6.3% $[(2.43 + - 1.25) / 18.74]$ in the time-varying covariation between internalizing problems and *relational victimization* for each additional year from baseline relative to girls with low levels of father emotional support (see Figure 4). Separate analyses for boys and girls also revealed that friend emotional support significantly impacted the time-varying covariation between internalizing problems and *relational victimization* for mid-adolescent boys ($\beta = -1.04, p < .05$). Mid-adolescent boys with high levels of friend emotional support exhibited a larger decrease of 3.6% $[(-0.01 + - 1.04) / 29.35]$ in the time-varying covariation between internalizing problems and *relational victimization* for each additional year from baseline relative to boys with low levels of friend emotional support (see Figure 5). For the *late adolescent transition group*, intercept tests of between-person differences for emotional support and for sex X emotional support interactions did not reveal significant differences in internalizing problems at baseline testing. Findings from these analyses were similar to those already reported with the addition that friend emotional support significantly impacted the trajectory of internalizing problems for the late adolescent transition group. Specifically, the average late adolescent with low levels of friend emotional support

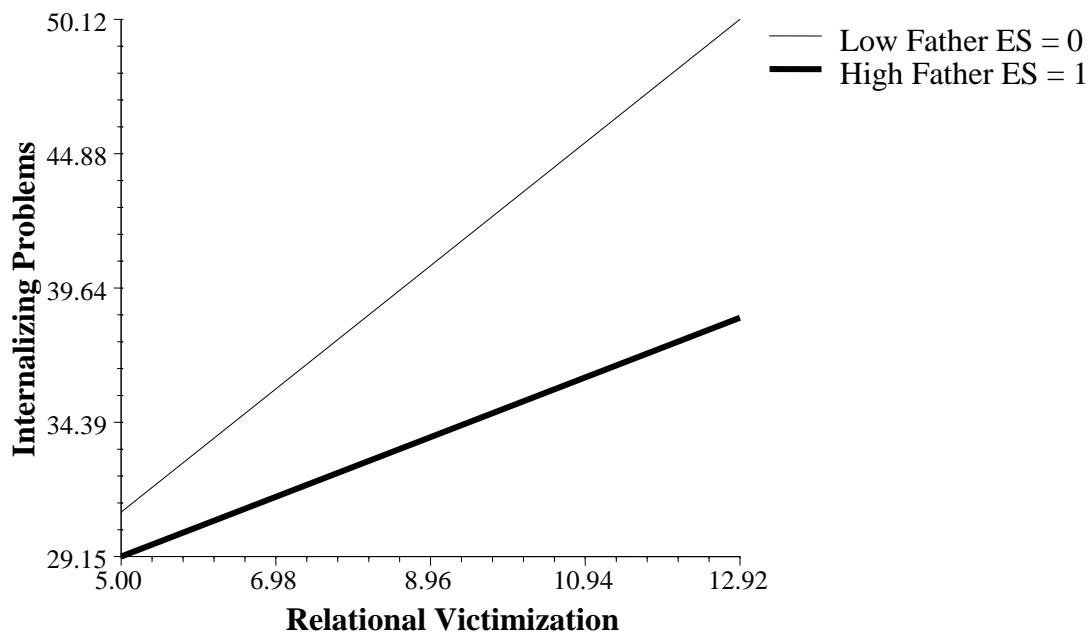


Figure 4. The effect of high and low father emotional support (ES) on the time-varying covariation between internalizing problems and *relational victimization* for adolescent girls in the *mid-adolescent transition group*.



Figure 5. The effect of high and low friend emotional support (ES) on the time-varying covariation between internalizing problems and *relational victimization* for adolescent boys in the *mid-adolescent transition group*.

exhibited an increase of 5.8% (1.61 / 27.97) in internalizing problems, compared to late adolescents with high levels of friend emotional support who exhibited a smaller increase of 1.9% $[(1.61 + -1.09) / 27.97]$ in internalizing problems for each additional year from baseline. The sex X friend emotional support interaction also significantly impacted the trajectory of internalizing problems, and further investigation by conducting analyses separately for boys and girls indicated that the interaction was significant for late adolescent boys ($\beta = -1.08, p < .01$). Late adolescent boys with high levels of friend emotional support exhibited a smaller increase of 1.9% $[(1.62 + -1.08) / 28.03]$ in internalizing problems for each additional year from baseline relative to late adolescent boys with low levels of friend emotional support. Analyses examining the effect of sex X emotional support interactions on the time-varying covariation between internalizing problems and *relational victimization* were not significant for the late adolescent transition group. However, further investigation by conducting analyses separately for boys and girls revealed significant effects of mother emotional support ($\beta = -1.13, p < .05$), father emotional support ($\beta = 1.75, p < .01$), and friend emotional support ($\beta = 1.15, p < .05$) on the time-varying covariation between internalizing problems and *relational victimization* for late adolescent girls only. Specifically, the average late adolescent girl with high levels of mother emotional support exhibited a larger decrease of 4.4% $[-0.39 + -1.13) / 34.27]$ in the time-vary covariation between internalizing problems and *relational victimization* for each additional year from baseline, relative to girls with low levels of mother emotional support (see Figure 6). On the other hand, the average late adolescent girl with high levels of father emotional support exhibited an increase of 4% $[-0.39 + 1.75) / 34.27]$ in the time-vary covariation between internalizing problems and

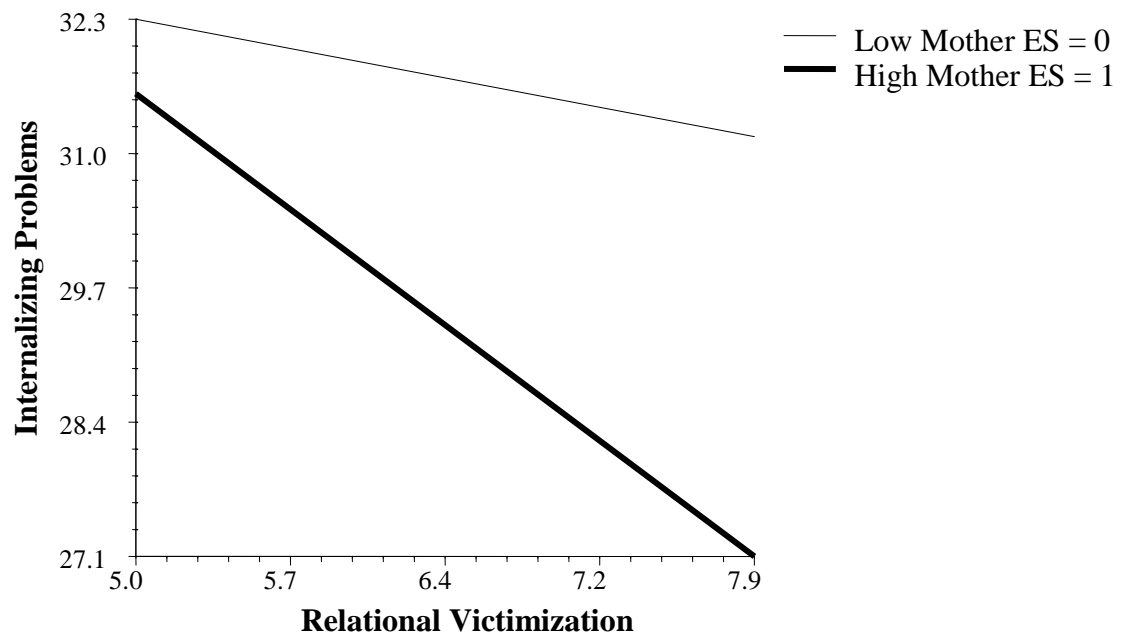


Figure 6. The effect of high and low mother emotional support (ES) on the time-varying covariation between internalizing problems and *relational victimization* for adolescent girls in the *late adolescent transition group*.

relational victimization for each additional year from baseline, relative to girls with low levels of father emotional support (see Figure 7). The average late adolescent girl with high levels of friend emotional support also exhibited an increase of 2.2% $[(-0.39 + 1.15) / 34.27]$ in the time-vary covariation between internalizing problems and *relational victimization* for each additional year from baseline, relative to girls with low levels of friend emotional support (see Figure 8).

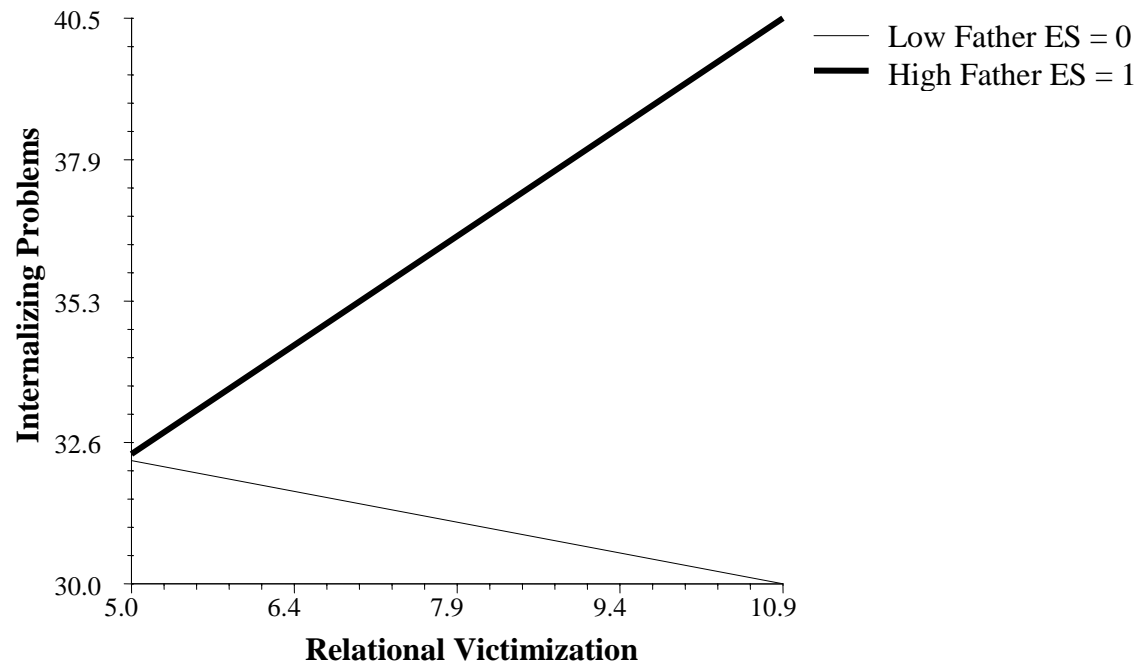


Figure 7. The effect of high and low father emotional support (ES) on the time-varying covariation between internalizing problems and *relational victimization* for adolescent girls in the *late adolescent transition group*.

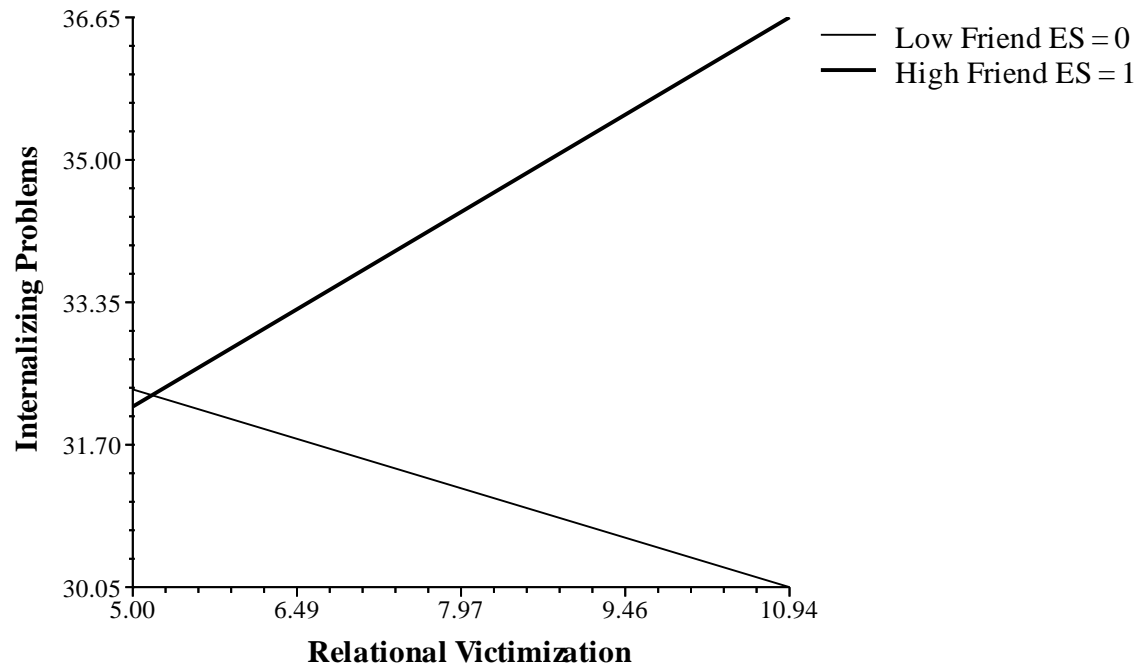


Figure 8. The effect of high and low friend emotional support (ES) on the time-varying covariation between internalizing problems and *relational victimization* for adolescent girls in the *late adolescent transition group*.

Chapter V: Discussion

The present study extends beyond past research by illuminating trajectories of internalizing problems beyond mid-adolescence and into young adulthood, and by investigating changes in the association between peer victimization and internalizing problems over a four-year period. The present study is also among the first to examine the effect of father, mother, and friend emotional support on these relations as adolescents transitioned into young adulthood. First, the overall developmental trajectory of internalizing problems as adolescents transitioned into young adulthood was examined. This was followed by investigating trajectories of internalizing problems for two developmental transition groups: *mid-adolescent transition group* and the *late adolescent transition group*. Second, I investigated whether levels of physical or relational victimization co-varied with internalizing problems for each transition group over time. Third, I determined if the associations between physical or relational victimization and internalizing problems respectively, were diminished by the effect of father, mother, and friend emotional support for each transition group over time. In all analyses, sex differences were examined.

Developmental Trajectory of Internalizing Problems as Adolescents

Transition into Young Adulthood

Over a period of four-years, on average participants in this study experienced significant increases in levels of internalizing problems. However, changes in the course of internalizing problems differed by developmental transition group. As hypothesized, adolescents in the *mid-adolescent transition group* (aged 12-15 years) experienced significant increases in internalizing problems over time. This is consistent with previous

research indicating that internalizing problems increase during mid-adolescence but peak by age 15 (Lewinsohn & Essau, 2002; Zahn-Waxler et al., 2000). Past studies suggest that increases in internalizing problems during mid-adolescence may be due to several reasons including parental depression, increases in problematic relationships with parents, and decreases in levels of support (Brendgen et al., 2005; Buist, Deković, Meeus, & van Aken, 2004; Galambos et al., 2004; Leve et al., 2004; Zahn-Waxler et al., 2000). In the present study, trajectories of internalizing problems for adolescents in the *late-adolescent transition group* (aged 16-19 years) remained stable. Only one other study has examined the development of internalizing problems, such as depression, from late adolescence into young adulthood, and findings also indicated that rates of depression increased from mid- to late adolescence, but remained stable from late adolescence to young adulthood (Hankin et al., 1998).

While the trajectory of internalizing problems for adolescents in the *late-adolescent transition group* remained stable overall, changes in the internalizing problem trajectory for late adolescents were observed when considering sex differences between boys and girls. Increases in the internalizing problems trajectory were observed for late adolescent boys, but remained stable and higher for late adolescent girls. Sex differences in the internalizing problems trajectory are not surprising, and results contribute to extensive literature indicating that adolescent girls and young women report higher levels of internalizing problems than adolescent boys and young men overall (Deković et al., 2004; Galambos et al., 2004; Hankin, 2008; Hankin et al., 1998; Khatri et al., 2000; Leadbeater et al., 1995; Leve et al., 2005; Lewinsohn et al., 1994; Menesini et al., 2009; Nada Raja et al., 1992; Nolen-Hoeksema, 2001). On the other hand, no significant sex

differences were observed for adolescents in the *mid-adolescent transition group*.

Present findings were similar to those of previous longitudinal research that examine the emergence of sex differences in internalizing problems. Studies have found that sex differences in rates of internalizing problems begin to emerge (and are small) in mid-adolescence, and continue to increase with the largest sex differences being observed during late adolescence (Angold & Rutter, 1992; Hankin et al., 1998).

Time-Varying Covariation between Peer Victimization and Internalizing Problems

Overall findings replicated considerable past research with children and young adolescents in showing a consistent association between peer victimization and internalizing problems, and confirmed that experiences of repeated victimization can lead to increases in internalizing problems (Bond et al., 2001; Casey-Cannon et al., 2001; Hanish & Guerra, 2002; Juvonen et al., 2000; Kochenderfer-Ladd & Wardrop, 2001; Lopez & DuBois, 2005; O'Brennan et al., 2009). Findings extend beyond past research by illuminating changes in the association between peer victimization and internalizing problems beyond mid-adolescence and into young adulthood. Specifically, findings for the *mid-adolescent transition group* demonstrated that increases in physical and relational victimization were significantly associated with increases in internalizing problems. However for the *late adolescent transition group*, only increases in relational victimization were significantly associated with increases in internalizing problems. Differences between transition groups in the effect of physical victimization on internalizing problems may be due to group differences in levels of physical victimization being reported across time. Reports of physical victimization were low in both transition

groups. However, adolescents in the *mid-adolescent transition group* reported significantly higher levels of physical victimization compared to adolescents in the *late adolescent transition group* at each time point (see Table 1), with most adolescents in the *late adolescent transition group* reporting ‘never’ experiencing physical victimization. This is consistent with previous longitudinal research showing that physically aggressive behaviors towards others tend to decrease over time (Brame, Nagin, & Tremblay, 2001; Broidy et al., 2003; Cairns, Cairns, Neckerman, Ferguson, & Gariépy, 1989; NICHD Early Child Care Network, 2004), whereas relationally aggressive behaviors towards others appear to become more prevalent over time (Cairns et al., 1989; Côté, Vaillancourt, Barker, Nagin, & Tremblay, 2007; Craig, 1998).

Significant sex differences in the time-varying covariation between *physical victimization* and internalizing problems were also observed. Adolescent girls in the *mid-adolescent transition group* experienced approximately twice the increase (8.4% each year) in the time-varying covariation between physical victimization and internalizing problems compared to boys (4.5% each year). Adolescent girls in the *late adolescent transition group* also experienced increases (4.5% each year) in the time-varying covariation between physical victimization and internalizing problems, while boys remained stable (0.7% increase each year but the increase was not significantly different from zero). Mid- and late adolescent girls reported significantly lower mean levels of physical victimization over Time 1, 2, and 3 ($M = 5.45, SD = .89; M = 5.29, SD = .77; M = 5.59, SD = .99$ respectively) compared to boys ($M = 5.90, SD = 1.11; M = 5.49, SD = .82; M = 5.93, SD = 1.13$ respectively). However, the significant sex differences in the time-varying covariation between physical victimization and internalizing problems for

girls in both transition groups indicate that increases in the highly non-normative experience of physical victimization may place adolescent girls at greater risk for increases in internalizing problems. These increases in experiences of physical victimization for mid- and late adolescent girls are not normative, as previous findings show that girls are less likely to exhibit physical forms of aggression and also are less likely to experience physical victimization than boys (Björkqvist, Lagerspetz, & Kaukiainen, 1992; Craig, 1998; Crick & Bigbee, 1998; Crick & Grotpeter, 1996; Galen & Underwood, 1997; Prinstein et al., 2001; Whitney & Smith, 1993; Yeung & Leadbeater, 2007). Given that this is unusual, this may be an indication of other existing problems that may place mid- and late adolescent girls at risk for increases in both physical victimization and internalizing problems into late adolescence and young adulthood. Existing problems include high initial levels of internalizing problems, the co-occurrence of externalizing problems (including aggression and conduct problems), delinquency, and affiliation with aggressive and deviant peer groups (Bardone, Moffitt, Caspi, Dickson, & Silva, 1996; Fergusson, Wanner, Vitaro, Horwood, & Swain-Campbell, 2003; Fergusson & Woodward, 2000; Pajer, 1998; Woodward & Fergusson, 2000). Further research is needed to examine if these existing problems explain sex differences in the time-varying covariation between physical victimization and internalizing problems.

The Effect of Emotional Support on the Time-Varying Covariation between Peer Victimization and Internalizing Problems

Initial levels of emotional support from fathers, mothers, and friends significantly modified the time-varying covariation between peer victimization and internalizing problems, and findings differed by transition group and sex.

For the *mid-adolescent transition group*, initial levels of emotional support in the family context were particularly important for mid-adolescent girls. Initial levels of high mother and father emotional support reduced the time-varying covariation between peer victimization and internalizing problems for girls. Findings were consistent with previous studies showing that high levels of parent emotional support were protective factors for internalizing problems among adolescents (Deković et al., 2004; Gorman-Smith et al., 2000; Harter & Whitesell, 1996; Montague et al., 2010; Needham, 2008; Seidman et al., 1999), and that parent emotional support was effective in reducing increases in internalizing problems for peer-victimized adolescents (Rigby, 2000; Yeung & Leadbeater, 2010). Mothers and fathers who are emotionally supportive may be perceived by their adolescents as understanding, available, and ready to help, and accordingly, may be more likely to be approached for assistance when they encounter conflicts with peers (Allen & Allen, 2009; Ladd & Kochenderfer-Ladd, 1998; Perren & Hornung, 2005).

For the *late adolescent transition group*, levels of high mother emotional support at the beginning of the transition to young adulthood was protective across the transition for girls, whereas initial levels of high father emotional support were associated with increases in the time-varying covariation between relational victimization and

internalizing problems for girls. It is not clear why these effects of emotional support would differ for mothers and fathers for late adolescent girls who were transitioning into young adulthood. Differences between mothers and fathers may be due to several reasons. First, late adolescent girls may perceive the *functional roles* of their mothers and fathers differently in dealing with relational victimization. Previous research suggests that both adolescents and young adults perceive mothers as more warm, accepting, and receptive in communicating about various problems compared to fathers, whereas adolescents and young adults perceive fathers primarily as active problem-solvers of the difficulties that they encounter (Almeida & Galambos, 1991; Atkinson & Blackwelder, 1993; Dutra, Miller, & Forehand, 1999; Robinson, 2000). Mid- and late adolescent girls may perceive mothers' emotional support as pivotal sources of comfort and view their fathers' emotional support as a basis for obtaining solutions to their problems. These complimenting styles of parent emotional support may be useful and effective in resolving relational conflicts with peers during the transition between mid- to late adolescence. However, by late adolescence and young adulthood, friendships become more complex and intimate in emotional depth than in mid-adolescence (Collins & van Dulmen, 2006a). Therefore, successful solutions to relational victimization during the transition from late adolescence to young adulthood may need to be more emotionally empathic or comforting when addressing concerns related to disruptions in the intimacy of friendships. Support that is only characterized by finding a solution to the problem (and is not emotionally empathic) may be valuable, but may no longer be addressing the concerns or clarifying feelings associated with experiences of relational victimization for late adolescent girls and young women. The former are stereotypically female traits that

mothers may be more likely to model in supporting late adolescents, and the latter are stereotypically male traits that fathers may be more likely to model. Accordingly, late adolescents may be approaching mothers more often than fathers for help. In fact, past findings reveal that late adolescents and young adults describe their mothers as more open to listen to problems and to clarify feelings for them than fathers (Hunter & Youniss, 1982). On the other hand, fathers may be providing high support for problems related to other areas such as decisions regarding directions after high school, while minimizing other aspects including cohesion within friendships. It is not clear what types of problems were being supported by mothers and fathers in the present study, and further studies are needed to illuminate the types of problems that mothers and fathers address during late adolescence and young adulthood. Second, differences may be due to the *nature of the relationship* between late adolescents and their mothers and fathers. While the parent-adolescent relationship may involve strong emotional ties to both parents, research on attachment demonstrates that relationships between mid- and late adolescents and their mothers are characterized more by self-disclosure with mothers, whereas strong emotional ties with fathers are largely characterized by time spent together through shared recreational activities (see review by Collins & Lauren, 2004b). Relationships that involve higher levels of self-disclosure may provide a context in which mothers learn to understand their daughters. Past studies indicate that late adolescent girls were more likely to report that their mothers knew them fairly well and knew their feelings, but reported that fathers did not know them well (Hunter & Youniss, 1982; Youniss & Kitterlinus, 1987). Given these differences in how emotional ties are expressed with mothers and fathers, late adolescent girls who are facing peer conflicts

where relational victimization is the primary concern, may require more of the intimacy found in self-disclosure (e.g., sharing of feelings and emotions) that is commonly accessed through mothers, to diminish feelings of discomfort and to find solutions to the conflict. Further, relationships with mothers that involve communication, closeness, and trust may also serve as a model for more positive friendships and romantic relationships in young adulthood (Arnett, 2007; Robinson, 2000). Finally, differences may be due to parental differences in *time spent* with mothers compared to fathers. Findings from previous work among mid- and late adolescents suggest that mothers report interacting with their children and family members more often than fathers do, and that children and family members also report interacting more often with their mothers than with their fathers (Oliveri & Reiss, 1987). In the present study, late adolescent girls who are transitioning into young adulthood may be choosing to maintain relationships more with their mothers than with their fathers. Increases in the time spent through interactions with mothers may lead to more opportunities to discuss, brainstorm, and work through successful solutions to conflicts with peers. Late adolescent girls may also be re-approaching mothers for help to discuss another solution if the first response was unsuccessful. Overall, the quality, amount, availability, and nature of parental emotional support on the association between peer victimization and internalizing problems are largely unstudied for adolescents who are transitioning into young adulthood. Future qualitative research and observational studies are needed to assess differences in the strategies that parents use to support their adolescents for handling peer conflicts, and also to prevent maladjustment during this transition period.

Likewise, findings from the present study extend beyond previous work by examining whether the effect of friend emotional support on the time-varying covariation between peer victimization and internalizing problems remains stable for older adolescents over time. Overall for both the *mid-adolescent* and *late adolescent transition groups*, initial levels of high friend emotional support were protective for mid- and late adolescent boys, but not for mid- and late adolescent girls. Mid- and late adolescent boys with supportive friendships may be more willing to intervene or protect one another when one is the target of another peer's aggression. On the other hand, initial levels of high friend emotional support were associated with increases in the association between peer victimization and internalizing problems for adolescent girls in both transition groups.

For the *mid-adolescent transition group*, differences in the effect of friend emotional support may be due to differences in the social structure between mid-adolescent boys and girls. Compared to mid-adolescent boys, previous studies indicate that the social structure of early and mid-adolescent girls reflect more close friendships, given that the size of the friendship groups are smaller and often involve longer interactions (Björkqvist et al., 1992; Lagerspetz et al., 1988; Rose & Rudolph, 2006). Closer friendships can create intimate spaces for self-disclosure and be a significant resource of emotional support, but smaller social networks may also increase the opportunity for conflicts which may involve the use of peer aggression as a hurtful strategy to achieve social goals (Collins & Madsen, 2006; Grotzinger & Crick, 1996; Crick & Nelson, 2002). In the present study, mid-adolescent girls reported higher levels of friend emotional support; however, it may be that the same friends who were offering emotional support to girls were also the ones who were being the aggressor. As a result,

these negative interpersonal circumstances do not diminish the association between peer victimization and internalizing problems for mid-adolescent girls, and instead may continue to heighten their risk for developing higher levels of internalizing problems over time. Further research is needed to differentiate between groups of friends who are primarily emotional support providers and groups of friends who may be both emotional support providers and aggressors, and to clarify whether the effect of emotional support from friends who are primarily support providers will be protective against the association between peer victimization and internalizing problems for mid-adolescent girls.

Few studies have investigated friendships during the transition from *late adolescence to young adulthood*, but suggest that changes in friendships may occur as a result of personal transitions (Aquilino, 1997; Arnett, 2006, 2007). During this transition period, late adolescents may be graduating from high school and moving to pursue further academic studies, to begin a new career, or to travel. These transitions may diminish access to and communication with support providers within the peer group. However, past work indicates that not all transitions, such as moving to college, resulted in decreased support within late adolescents' friendships, rather friendships that were centered on communication and frequent interaction (e.g., through online chat and video conferencing, talking on the phone, or visits back home) remained as significant sources of support and self-disclosure (Oswald & Clark, 2003). Overall, existing research indicate that late adolescents and young adults share similar friendship concerns and expectations with younger adolescents, but also reveal that friendships among late adolescents and young adults are more complex and have greater intimacy and emotional

depth than in early to mid-adolescence (Collins & van Dulmen, 2006a). This is particularly the case for late adolescent girls and young women who report greater levels of affection, nurturance, and intimate disclosure in their friendships than late adolescent boys and young men (Collins & Madsen, 2006; Barry, Madsen, Nelson, & Carroll, 2009; Hunter & Youniss, 1982).

For the *late-adolescent transition group*, findings in the present study indicated that initial levels of high friend emotional support were not protective for late adolescent girls. One reason may be due to the tendency to idealize friendships among late adolescent girls. Specifically for late adolescent girls who are not successful in maintaining close friendships during personal transitions, it may be that these adolescent girls are idealizing their friendships and reporting high initial levels of friend emotional support. However, late adolescent girls may not be receiving the support that they are expecting to receive from their friendships, which may lead to increases in levels of internalizing problems. Second, late adolescent girls with a personality style that reflects a preoccupation with interpersonal concerns (i.e., interpersonal depressive vulnerability involving fear of abandonment by others and extreme desire for closeness and nurturing by others) may exhibit increases in internalizing as a result of their vulnerability to interpersonal events that disrupt intimacy in relationships (Leadbeater et al., 1995). A review by Leadbeater et al. (1995) also indicates that compared to adolescent boys and young men, adolescent girls and young women exhibit higher levels of interpersonal depressive vulnerability. In this case, disruptions to relationships (such as moving away to college) may place late adolescent girls with interpersonal depressive vulnerability at risk for increases in internalizing problems.

Finally, differences in the effect of friend emotional support for both mid- and late adolescent transition groups may be explained by variations between boys and girls in coping responses to peer victimization. While high levels of friend emotional support may have been protective for mid- and late adolescent boys, thinking and talking excessively about problems may have contributed to increases in peer victimization and internalizing problems for mid- and late adolescent girls. Specifically, rumination (characterized by focusing repetitively on symptoms, causes, and consequences of emotional stress) and co-rumination (characterized by talking about problems frequently with friends, revisiting the same problems repeatedly, mutually encouraging the discussion of problems, and focusing on negative feelings), is more common among adolescent girls and young women than adolescent boys and young men, and both coping styles are associated with increased symptoms of depression and anxiety in adolescent girls and young women over time (Hankin, 2008; Hankin, Stone, & Wright, 2010; Nolen-Hoeksema, 2001; Nolen-Hoeksema, Morrow, & Fredrickson, 1993; Rose, Carlson, & Walker, 2007; Rose & Rudolph, 2006; Thayer, Rossy, Ruiz-Padial, & Johnsen, 2003; Zlomke & Hahn, 2010). Hence, future studies are needed to further examine the nature and quality of friend emotional support to clarify if varying coping styles account for sex differences in the effect of friend emotional support on increases in peer victimization and internalizing problems.

Limitations and Future Directions

Findings in the present study revealed differential effects in the source of emotional support (from mothers, fathers, and friends) on the time-varying covariation between peer victimization and internalizing problems. Some sources of support were

protective while other sources were not protective or had no significant effect, and these differential effects also varied between boys and girls. As discussed previously, support providers may differ in the strategies that they use to support adolescents in handling peer conflicts. Likewise, it remains unclear as to how adolescents were processing and using the emotional support that they were receiving from their emotional support providers, and whether this differed by whom they received the support from. Adolescents may perceive one source of support provider as more effective in promoting positive adjustment compared to another source, and adolescents may approach support providers for help accordingly. Future studies that use qualitative interviews can illuminate how adolescents process and use the emotional support that they are receiving from mothers, fathers, and friends. Findings can be used to inform practices and programs that build healthy relationships for adolescents, and also to promote positive adjustment for adolescents as they transition into young adulthood.

Past studies show that romantic relationships become a priority for older adolescents and young adults (Furman & Buhrmester, 1992; Richards et al., 1998; Shulman & Kipnis, 2001), and can be a significant resource of emotional support for adolescents when they face peer conflicts. In the present study, emotional support from dating partners was not significantly correlated with physical victimization, relational victimization, or internalizing problems for either transition group. The effect of dating partner emotional support on the time-varying covariation between peer victimization and internalizing problems could not be assessed as a result. Non-significant findings could possibly be due to the small number of adolescents who were currently dating, and the stability and quality of the dating relationships. Further research is needed to understand

the contribution of emotional support from dating partners in diminishing the association between peer victimization and internalizing problems.

Moreover, data for the present study relied solely on self-reports of peer victimization, emotional support, and internalizing problems. Adolescents were asked to report on how often they experienced victimization by their peers, and may have under-rated their experiences in order to avoid the stigma associated with being identified as a victim. Likewise, adolescents' perceptions of emotional support may vary depending on the current relationship status with their mothers, fathers, and friends. Future studies that draw from multi-informant sources, including peer reports of victimization, and parent and peer reports of emotional support can be used to validate responses (Ladd & Kochenderfer-Ladd, 2002).

Finally, the sample in the present study was drawn from middle-class, university educated, and Caucasian families. Less is known about the effect of emotional support on trajectories of peer victimization and internalizing problems among families with differing socioeconomic statuses or ethnic and cultural backgrounds. For instance, previous studies have reported variations among families in their views of parent-adolescent relationships with respect to what signifies parental warmth, and in the type of communication shared between adolescents and their parents (see review by Collins & Laursen, 2004b). Future research is needed to determine if findings can be generalized to lower socioeconomic groups and other ethnic groups.

Conclusions

The present study illuminates how emotional support from parents and friends can protect against increases in peer victimization and internalizing problems over time,

and considers how these associations differ across developmental transitions and between adolescent boys and girls. Findings contribute to a growing body of literature indicating that parents remain as significant sources of emotional support from mid- to late adolescence and from late adolescence to young adulthood. In particular, high initial levels of mother emotional support for mid- and late adolescent girls, and high initial levels of father emotional support for mid-adolescent girls, can have a crucial long-term impact on adolescents' internalizing problems. Emotional support from friends also remains relevant and has significant implications for the emotional health of older adolescents and young adults, and this is particularly important for boys.

In summary, findings emphasize the importance of fostering responsive and emotionally supportive relationships within the family and peer contexts early on, so that adolescents and young adults can have a consistent foundation from which they can draw support. This becomes particularly important during the transition from late adolescence into young adulthood, where late adolescents often experience personal transitions that may bring changes to the levels of emotional support received within existing relationships. Thus, it becomes important to develop strategies that maintain these supportive networks, especially for adolescents and young adults who also are being victimized.

In fact, present findings have clear implications for practices that focus on promoting supportive relationships for adolescents and young adults who may be at risk of increasing levels of peer victimization and internalizing problems. Specifically, results support the importance of building and maintaining existing support systems within the family (particularly with fathers of late adolescent girls), and fostering new relationships

with peers to prevent long-term and negative mental health problems associated with peer victimization experiences. Within the family context, adolescents and young adults need to know that they can approach their mother and/or father to disclose and discuss conflicts that they may be experiencing with their peers. Training can give mothers and fathers the strategies to initiate consistent conversations with their adolescents and young adults that involve asking what the conflict is about and brainstorming solutions with their adolescents and young adults to be used in resolving the conflict. When parents help their adolescents and young adults to handle conflicts, this offers them support and also maintains a relationship that allows for open communication when they need to seek help. Adolescents and young adults will also acquire new approaches to use in resolving future peer conflicts.

Findings also provide a basis for the development of effective prevention programs in order to prevent and diminish the association between peer victimization and internalizing problems *before* adolescents transition into young adulthood. Curricula in school-based prevention programs can teach mid- to late adolescents to use respectful and supportive responses within friendships. For instance, role-playing activities can allow adolescents to devise and practice strategies to resolving conflicts peacefully within their friendships, rather than resorting to physically or relationally aggressive responses towards one another. These strategies also teach adolescents how to provide support for their friends if they are approached for help. Furthermore, teachers can be another source of emotional support for adolescents (Yeung & Leadbeater, 2010). Training can help teachers to recognize physical and relational forms of victimization, and equip them with the appropriate skills and responses to use when adolescents approach them for help

(Bauman & Del Rio, 2006). Overall, creating responsive environments for adolescents and young adults to seek help from when they face peer victimization is essential in promoting emotional well-being across these developmental transitions.

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Appendix A: Peer Victimization Measure

Items used to assess Physical and Relational Victimization from the Social Experiences Questionnaire (SEQ; Crick & Grotpeter, 1996).

Physical Victimization Items:

Here is a list of things that people your age (peers) sometimes do. How often do they happen to you?

	Never	Sometimes	Almost all the Time
1. How often do you get hit by your peers?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. How often do your peers yell at you or call you mean names?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. How often do you get pushed or shoved by your peers?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. How often do your peers kick you or pull your hair?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. How often do your peers say they will beat you up if you don't do what they want you to do?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Relational Victimization Items:

Here is a list of things that people your age (peers) sometimes do. How often do they happen to you?

	Never	Sometimes	Almost all the Time
1. How often do your peers leave you out on purpose when it is time to do an activity?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. How often does a peer who is mad at you try to get back at you by not letting you be in the group anymore?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. How often do your peers tell lies about you to make others not like you anymore?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

4. How often do your peers say they won't like you unless you do what they want you to do?
5. How often do your peers try to keep others from liking you by saying mean things about you?
-

Appendix B: Parent Emotional Support Measure

Items used to assess Father and Mother Emotional Support from the Inventory of Parental Behaviors (Schaefer, 1965)

How much do you feel the following statements are like your “father”?

<u>My “father” is a person who...</u>	Not like him	Somewhat like him	Like him
1. Understands my problems and worries.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Is able to make me feel better when I am upset.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Enjoys talking things over with me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Has a good time at home with me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Enjoys doing things with me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

How much do you feel the following statements are like your “mother”?

<u>My “mother” is a person who...</u>	Not like her	Somewhat like her	Like her
1. Understands my problems and worries.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Is able to make me feel better when I am upset.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Enjoys talking things over with me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Has a good time at home with me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Enjoys doing things with me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Appendix C: Friend Emotional Support Measure

Items used to assess Friend Emotional Support from the Perceived Social Support from Friends measure (PSS-Fr; Procidano & Heller, 1983)

The statements below refer to feelings or experiences which sometimes happen to people in their relationships with their friends or peers. Please read each one and indicate whether they happen to you.

	Yes	No	Don't Know
1. My friends/peers give me the moral support I need.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. I rely on my friends/peers for emotional support.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. If I felt that one or more of my friends/peers were upset with me, I'd just keep it to myself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. There is a friend/peer I could go to if I were just feeling down, without feeling funny about it later.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. My friends/peers and I are very open about what we think about things.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. My friends/peers are sensitive to my personal needs.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. My friends/peers are good at helping me to solve problems.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. I have a deep sharing relationship with a number of friends/peers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. I have a relationship with a friend/peer that is as intimate as other people's relationships with friends/peers.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Note. Statement #3 was reverse coded.

Appendix D: Dating Partner Emotional Support Measure

Items used to assess Dating Partner Emotional Support developed by the HYS team.

Please indicate how true each of the following statements are for you.

	Not at all True		Sometimes True		Very True
1. I feel a strong bond with my dating partner.	1	2	3	4	5
2. My dating partner and I are really important to each other.	1	2	3	4	5
3. I can rely on my dating partner.	1	2	3	4	5

Appendix E: Internalizing Problems Measure

Items used to assess Internalizing Problems from the Brief Child and Family Phone Interview (BCFPI; Cunningham, Pettingill, & Boyle, 2001).

Do you notice that you...	Never	Sometimes	Often
1. Feel hopeless?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Get no pleasure from your usual activities?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Have trouble enjoying yourself?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Worry about your past behaviour?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. Worry about doing the wrong thing?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Worry about doing better at things?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Are unhappy, sad or depressed?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Are overly anxious to please people?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Become overly upset while away from someone you are close to?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Worry about being separated from those you are close to?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11. Are afraid of making mistakes?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12. Have no interest in your usual activities?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13. Become overly upset when leaving someone you are close to?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14. Worry that something bad will happen to the people you are close to?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15. Are not as happy as other people your age?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16. Worry about things in the future?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17. Feel sick before being separated from those you are close to?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
18. Are scared to go to sleep without your parents nearby?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>