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**A Longitudinal Examination of the Mediating Role of Various Sources of
Social Support on the Relation between Peer and Sibling Victimization and
Adolescent Delinquency**

By

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BA in Justice Studies, University of New Hampshire, 2020

BA in English, University of New Hampshire, 2020

THESIS

Submitted to the University of New Hampshire

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in

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On July 27th, 2021

Approval signatures are on file with the University of New Hampshire Graduate School.

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ABSTRACT

Peer victimization has proven to be a prevalent issue for children and adolescents. The current study examined the possible bidirectional effect between peer and sibling victimization and delinquency, and assessed whether social support from family, friends, and other non-parental adults would mediate this association. Using longitudinal data from the Technology Harassment Victimization study, 791 participants were surveyed via telephone. Bivariate correlations were calculated first, and two Poisson regressions predicting delinquency and peer and sibling victimization at Time 2 were also performed. Three structural equation models with cross-lagged designs were also calculated. In the Poisson regressions, family and other adult social support, but not friend support (which was measured at Time 2), concurrently predicted delinquency. However, none of the social support sources predicted peer and sibling victimization concurrently. Results from the structural equation models showed that the relationship between peer and sibling victimization and delinquency was unidirectional, since earlier peer and sibling victimization predicted later delinquency, but earlier delinquency did not predict later peer and sibling victimization. Analyses also showed that various forms of social support partially mediated associations between earlier peer and sibling victimization and later delinquency. An additional model, total social support, partially mediated associations between the peer and sibling victimization and delinquency variables, and this model yielded a better fit for the data. Therefore, results suggest that receiving social support, regardless of the source from which the social support comes, can decrease the likelihood of delinquent behavior for children and adolescents who are victimized by peers or siblings.

**A Longitudinal Examination of the Mediating Role of Various Sources of Social Support
on the Relation between Peer and Sibling Victimization
and Adolescent Delinquency**

According to the National Center for Education Statistics, “In 2015, about 21% of students ages 12-18 reported being bullied at school during the school year” (Musu-Gillette, Zhang, Wang, Zhang, & Oudekerk, 2017, p. iii), with 37.5% of third-graders reporting that they had experienced some form of relational or physical victimization by their peers (p. 19). In addition, peer victimization has proven to be a prevalent issue for children and adolescents (Williford, Fite, DePaolis, & Cooley, 2018; Card & Hodges, 2008), with one study finding that over 70% of the children in their sample had experienced some incident of peer victimization during the school year (Cooley, Fite, & Pederson, 2017, p. 104). Due to its frequency, a number of studies have examined possible outcomes for victims of peer aggression. As a result, several negative outcomes have been found to be associated with peer victimization for children and adolescents, including: mental health issues (McGee, Barber, Joseph, Dudley, & Howell, 2005; Polanin et al., 2021); low self-concept (e.g., children’s and adolescents’ views of themselves; Card & Hodges, 2008); suicide ideation (Klomek, Marrocco, Kleinman, Schonfeld, & Gould, 2008); delinquency (McGee et al., 2005); school disliking and truancy (Card & Hodges, 2008); and the likelihood of future arrest (Schwartz, Lansford, Dodge, Pettit, & Bates, 2018). In addition, the role of social support in mitigating the effects of peer victimization have been well-documented in the literature, exemplifying the influential role that social support from various sources can play in children and adolescents’ lives. Social support has been known to have several positive effects for children and adolescents, such as a decreased likelihood of engaging in substance use (Cutrin, Gomez-Fraguela, & Sobral, 2017; Micalizzi, Sokolovsky, Janssen, & Jackson, 2019); a

decreased likelihood of engaging in delinquent behaviors (Bax & Hlasny, 2019; Micalizzi et al., 2019); and an increase in their overall well-being (e.g., academic achievement, mental health, self-concept, etc.; Chu, Saucier, & Hafner, 2010). Further, low levels of social support have been found to have deleterious effects on children and adolescents, which can include issues such as increasing the likelihood that adolescents will engage in delinquent behaviors (Micalizzi et al., 2019), since there was less of an increase in delinquent behavior over time in adolescents whose parent-child relationships were considered “highly supportive” (p. 492). Also, the level of social support can affect children’s or adolescents’ perception of school or their community (Lardier, Barrios, Garcia-Reid, & Reid, 2018). Therefore, the purpose of this study is to examine the possible bidirectional association between peer and sibling victimization and delinquency and to assess whether three sources of social support (i.e., from parents, peers, and other non-parental adults) mediate this association using longitudinal data across two time points.

Overall, the majority of past literature regarding peer victimization and social support have focused mainly on internalizing behavioral outcomes specifically, with few studies examining externalizing behavioral outcomes, and even fewer studies examining delinquency as a specific externalizing behavioral outcome. Therefore, I will begin each section of this literature review by discussing the negative outcomes associated with internalizing behaviors, followed by studies that have looked at externalizing behaviors, and finally, those that have looked at delinquency as a specific form of externalizing behavior, thereby providing the rationale for this study. However, relevant theoretical perspectives will be considered first.

Theoretical Perspectives and the Role of Social Networks

Because the primary focus of this study is to examine the possible mediating role of social support on the relation between peer and sibling victimization and delinquency, relevant

theoretical perspectives on delinquency that focus on the role of social networks should be considered. To that end, Smångs (2010) reviewed several prominent theories that have dominated the field of criminology for decades regarding children and adolescents and delinquent behaviors. Using a social network analytic approach, Smångs reflected on Sutherland's differential association theory, Akers' social learning theory, Hirschi's social bond theory, and Hirschi and Gottfredson's self-control theory to consider each theory's contribution to core explanatory concepts of delinquent behavior. Theories such as differential association and social learning, which primarily focus on delinquent peer affiliation, argue that engaging in delinquent behavior is learned through social interactions (i.e., individuals learn to act in the same manner as others within their social network). Smångs categorizes these theories into a broader category, developed by Hansell and Wiatrowski (1981), as a "social ability model" (Smångs, 2010, p. 610). Advocates of this model suggest that delinquents and non-delinquents share common traits, such as having the same ability to engage in social relationships. In addition, their attachments to social partners have the same "significance and emotional quality as non-delinquents" (Smångs, 2010, p. 611). As a result, delinquency is "understood as the outcome of a normal learning process" (p. 611). However, Smångs juxtaposes that with Hirschi and Hirschi and Gottfredson's social control or social bond theories, which he categorizes as "social disability models". Social control and social bond theories posit that there are four common elements that can contribute to children's and/or adolescents' engagement in unlawful or delinquent behavior, which include a) attachment to others, such as parents or peers; b) commitment to institutions, such as school; c) involvement in activities, such as sports or clubs; and d) beliefs, such as whether they believe engaging in delinquent behaviors is wrong. Contrary to the social ability model, this category of theories suggests that delinquents do *not*

share common traits with non-delinquents. Advocates of this model believe that delinquents “lack normal interpersonal skills, have trouble maintaining long-term, meaningful relationships, are devoid of compassion for others, and have low needs for affiliation and affection” (Smångs, 2010, p. 611).

Tatum (2001) argues that the concept of social support underlies criminological theories of delinquency. For example, social control theory suggests that strong social bonds directly or indirectly affect delinquent behavior. Further, Tatum argues that social control theory emphasizes the control exerted by family and other supportive relationships on individuals. In addition, she cites Barrera and Li (1996) who suggest that “[a]lthough supportive peer relationships increase as a youth move [sic] through adolescence, family support remains an important factor throughout this time period.” Therefore, it is possible that social support from various sources within adolescents’ social networks may exert some form of social control that may influence the likelihood of delinquent behavior. More specifically for the purpose of this study, it is possible that receiving social support from one’s social network may mediate the effect of peer and sibling victimization on delinquency.

Peer Victimization

Peer victimization, also commonly referred to as bullying victimization, is a prevalent issue for adolescents and is one of the most recurring forms of victimization that adolescents experience (Norrington, 2021). Card and Hodges (2008) suggest that peer victimization can occur in many forms, including both violent and nonviolent forms, and can be defined as, “the receipt of any act of aggression from similar-age peers” (p. 451). They provide examples of peer victimization, which include physically harming peers (e.g., hitting); verbally attacking peers (e.g., calling names); or using other tactics (e.g., spreading rumors/gossip or being socially

excluded). Due to its prevalence, past studies have examined the possible relationship between peer victimization and both internalizing and externalizing negative outcomes for adolescents. Studies have also examined possible factors that predict peer victimization as well.

Most studies have examined the effect of peer victimization on both internalizing and externalizing behavioral problems. However, some studies have examined the possible influence of peer victimization on either internalizing only or externalizing only behavioral problems. In terms of the association between peer victimization and internalizing behavioral issues, Norrington (2021) longitudinally examined whether peer victimization, defined as various forms of bullying (i.e., being physically victimized, being verbally victimized, being left out by peers, having things taken) predicted psychological distress in early adulthood, controlling for social, emotional, and psychological well-being, as well as the degree of closeness to friends. In addition, she examined whether adolescent self-concept mediated the effect of peer victimization on psychological distress in early adulthood. She found that bullying victimization in adolescence was associated with more psychological distress in adulthood for adolescents who had a negative self-concept. She also found that adolescents' self-concepts partially mediated the effect of peer victimization on psychological distress, depending on the type of victimization. More specifically, victimization by having things taken by peers indirectly contributed to an increase in adult psychological distress through adolescents' self-concept. However, Norrington also found that other forms of peer victimization (i.e., physical victimization and social exclusion) did not increase psychological distress in adulthood. Norrington argued that both verbal victimization and peer harassment may have more of an impact on adolescents because it may increase the likelihood that they will internalize their feelings, which can negatively impact their mental health.

Turner, Mitchell, and Jones (2020) examined the cumulative effect of peer victimization on trauma symptoms using longitudinal data from the Technology Harassment Victimization (THV) study. They measured victimization patterns based on whether the juveniles experienced victimization at two time points and categorized participants as either: youth who had no victimization at either Time 1 or 2 (i.e., “none”); those who experienced victimization at Time 1 but not at Time 2 (i.e., “desist”); those who did not experience victimization at Time 1 but did at Time 2 (i.e. “new”); and those who experienced victimization at both Time 1 and Time 2 (i.e., “re-victimization”). They found that juveniles who were not victimized at Time 1 but were at Time 2 (i.e., “new”) and juveniles who were victimized at both Time 1 and 2 (i.e., “re-victimized”) displayed higher trauma symptoms at Time 2 than non-victims. Therefore, they stress the importance of studying timing of peer victimization when examining negative outcomes in adolescents.

In addition to possible internalizing behaviors, some studies have looked at externalizing behaviors as a result of peer victimization. Walters and Espelage (2020) examined whether cognitive impulsivity and cognitive insensitivity mediated the effect of self-reported peer victimization (i.e., frequency of being picked on, hit or pushed, called names) on self-reported juvenile delinquency. In their three waves of longitudinal data, they found no direct effects of peer victimization at both Time 1 and 2 on delinquency at Time 3. However, an indirect association between peer victimization at Time 1 and delinquency at Time 3 was found, as that relationship was fully mediated by cognitive impulsivity (but not cognitive insensitivity) at Time 2. Therefore, it appears that peer victimization does not directly predict delinquency. They also examined whether peer victimization at Time 2 moderated the effect of cognitive impulsivity at Time 2 on delinquency at Time 3 and found a significant interaction between peer victimization

and cognitive impulsivity. Further analysis suggested that those with low levels of both cognitive impulsivity and peer victimization were less likely to engage in delinquent behavior. However, high levels of cognitive impulsivity, regardless of the level of peer victimization, increased the likelihood of delinquency. Further, the likelihood of delinquency was highest for those with both high levels of cognitive impulsivity and high levels of peer victimization. In addition, a moderated mediational effect was found in that the strength of the indirect effect of peer victimization at Time 1 on delinquency at Time 3 increased as Time 2 cognitive impulsivity increased.

In their longitudinal study of 585 children, Schwartz et al. (2018) examined the role of earlier peer victimization and aggression on both adolescent delinquency and adult criminal behavior based on two sources of information (i.e., court records and self-report, dichotomized as 1 = either self-report arrests, court record of arrests, or both and 0 = no arrests), while controlling for demographic variables. Schwartz et al. used a peer-nomination inventory to measure their two predictor variables, asking participants to identify up to three classmates who fit certain descriptions. For peer victimization, they gave descriptions such as “kids who get picked on” and for peer aggression, they gave descriptions such as “kids who start fights”. For both peer victimization and peer aggression, each child was given a score based on the number of nominations received from other classmates. They found that peer-nominated peer victimization and peer-nominated aggression in third and fourth grade predicted adolescent arrests, but not adult arrests. Also, juveniles who were peer-nominated victims in third and fourth grade were less likely to be arrested in adolescence. Further, those who were peer-nominated as aggressors in third and fourth grade were more likely to be arrested in adolescence. In addition, the interaction between peer victimization and aggression predicted adult arrests, but

not adolescent arrests. More specifically, for those who had high levels of peer-nominated victimization, aggression did not predict adult arrests. However, for those who had low levels of peer-nominated victimization, aggression predicted adult arrests.

As stated above, most studies examine the influence of peer victimization on both internalizing and externalizing behavioral issues. For example, McGee et al. (2005) examined the possible association between exposure to various forms of victimization (i.e., indirect witnessing and/or direct violence victimization within the home, school, or community, as well as indirect witnessing and/or direct victimization by peers) and both internalizing (i.e., depression and anxiety) and externalizing (i.e., self-reported delinquency) behavioral issues, which is more germane to this study. Peer victimization was found to predict internalizing behavior problems (e.g., mental health issues) and they also noted gender differences in the types and consequences of peer victimization as well. More specifically, they found that females were more likely to experience indirect victimization (e.g., witnessing violence) and that female peer victimization was associated with a greater likelihood of internalizing behavioral issues (e.g., depression and anxiety). Males, on the other hand, were more likely to display externalizing behaviors.

In addition, Kretschmer, Barker, Dijkstra, Oldehinkel, and Veenstra (2015) examined the possible effect of peer victimization on latent maladjustment profiles in early and mid-adolescence. They identified four latent profiles for early adolescence, which included a) low internalizing/externalizing (i.e., adolescents who scored low on withdrawal, anxiety, somatic symptoms, delinquency, and aggression); b) high internalizing (i.e., adolescents who scored high on withdrawal, anxiety, and somatic problems but low on externalizing); c) high externalizing (i.e., adolescents who scored high on delinquency and aggression but low on internalizing); and

d) high comorbid internalizing and externalizing (i.e., adolescents who scored high on withdrawal, anxiety, somatic symptoms, delinquency, and aggression). They found that about 1 in 5 adolescents who were victimized in early adolescence and who had a low internalizing/externalizing profile transitioned into the internalizing profile. They also found that the internalizing and comorbid profiles were more common than the externalizing profile in adolescents who had been victimized by their peers, suggesting severe mental health consequences for children and adolescents who are victimized by their peers. Also, Kretschmer et al. (2015) examined the stability of maladjustment profiles and found that adolescents who showed an externalizing profile (i.e., adolescents who scored high on delinquency and aggression) tended to stay in that profile rather than transition into an internalizing profile (i.e., adolescents who scored high on withdrawal, anxiety, and somatic problems).

In a meta-analysis of 114 longitudinal studies that conducted regression analyses, Polanin et al. (2021) examined whether involvement in school violence (e.g., physical aggression, bullying), either as a perpetrator or victim, affected adolescents' mental health, school performance, and likelihood of engaging in criminally delinquent behaviors. Overall, involvement in school violence either as a victim or perpetrator and involvement in school violence perpetration only predicted all three outcomes (i.e., mental health, school performance, and criminal delinquency) in the expected directions. However, when school violence victimization was isolated as a predictor, it predicted only mental health issues, but not criminal delinquency or school performance. Polanin et al. also examined the influence of involvement in school violence as a perpetrator and victim in specific disaggregated constructs within each of the three outcomes. In terms of mental health outcomes, perpetration of school violence predicted empathy and depression, but not suicidal ideation, self-esteem, and anxiety. Further

perpetration of school violence predicted only one of the school performance constructs (i.e., absenteeism), but not the likelihood of dropping out and/or graduating, GPA and/or scores on standardized tests, or school engagement. In terms of criminal delinquency constructs, perpetration of school violence was related to property offenses, non-weapon-related violence, and general delinquency, but not general crime involvement. Also, both bullying and peer victimization predicted depression, but only peer victimization predicted other negative internalizing behaviors.

It is possible that the association between peer victimization and behavioral problems may be bidirectional. For example, according to Card and Hodges' (2008) review article, if adolescents suffer from internalizing behaviors, they are more at-risk for being victimized by their peers in the future. They further argue that adolescents who display internalizing behaviors may be seen by their peers as being less likely to defend themselves against their perpetrator, and thus, are seen as easy prey. Further, the possible predictive value of internalizing and externalizing behavioral issues on later peer victimization was examined in Pouwels, Hanish, Smeekens, Cillessen, and van den Berg (2019) in their longitudinal study. They found that externalizing behaviors at age 5 predicted peer victimization at age 9. More specifically, they found that if children displayed externalizing behavior early in life, they were more likely to be victimized by their peers throughout childhood and adolescence. However, they did not find an association between early internalizing behaviors and later peer victimization. Other factors have also been found to predict peer victimization as well. For example, Card and Hodges' review article suggested that children who are physically weaker, engage in fewer prosocial behaviors, and have few or no friends are more likely to be victimized by their peers, and suggested that adolescents with these characteristics may also be easier targets for peers to

victimize. In addition, because perpetrators tend to receive satisfaction from their victimizing behavior, Card and Hodges further argue that they may be more likely to continue to victimize their peers in the future.

Considering the deleterious effects of peer victimization found in the above-cited studies, other studies have examined possible individual characteristics that may increase the likelihood that children and adolescents will experience peer victimization, including adolescents' position in their peer networks and social bonds (Schreck, Fisher, & Miller, 2004) and age, gender, and family structure (McGee et al., 2005). Schreck et al. (2004) looked at whether delinquency, adolescents' social network positions, and familial and school social bonds predicted peer violent victimization. They concluded that adolescents who enjoy school and had strong social bonds with their parents tended to be violently victimized less by their peers. Also, they found that adolescents' position and type of friendship network predicted violent victimization. More specifically, they found that adolescents who are in the center of non-deviant peer groups tended to be less likely to experience violent victimization than less popular adolescents in similar peer groups. Interestingly, they found that peer delinquency was not a significant risk factor for violent victimization.

Further, Robson, Allen, and Howard's (2020) meta-analysis examined the impact of self-regulation on children and adolescents' peer victimization among other negative outcomes. They found that children who are less able to self-regulate (i.e., control their impulses) have less positive outcomes, such as engaging in dangerous behaviors. Further, preschool children who demonstrated a high ability to self-regulate had more positive outcomes later, such as better school performance and social skills, which decreased the likelihood that they would be victimized by their peers and have both internalizing and externalizing behavioral problems in

elementary school. Robson et al. also found similar results regarding levels of self-regulation in elementary school-aged children. Elementary school-aged children who had a high ability to self-regulate had greater academic achievement and fewer externalizing and internalizing behavioral problems, including less drug use and less depression in later school years. Lastly, they found that elementary school children who displayed a greater ability to self-regulate were less likely to engage in criminal behavior, be unemployed, or become obese later in adulthood. Their study stresses the importance of self-regulation in children, since this concept was associated with many positive outcomes for children both in the short and long-term.

As stated above, Norrington (2021) argues that peer victimization, which is also commonly referred to as bullying victimization, is a prevalent issue for adolescents in our society and is one of the most recurring forms of victimization that adolescents experience. Due to its prevalence, the past studies outlined above have examined the possible relationship between peer victimization and both internalizing and externalizing outcomes for adolescents, and also, factors that can predict victimization. In addition to this, studies have also examined the possible role of social support as a mediator on the relation between peer victimization and negative outcomes in adolescence.

Social Support

Adolescents' social support networks have been found to be associated with more optimal development (Zwecker, Harrison, Teplin, Abram, & Welty, 2018). According to Olenik-Shemesh and Heiman (2017), social support has been defined as "the individual's perception of being cared for, valued, and included in his or her social environment, which includes family, peers, and other close, significant people" (p. 31). Therefore, social support can include parental support (Micalizzi et al., 2019), general support from other close adults (Baetz

& Widom, 2020), or support from friends (Andrews, Hanish, & Santos, 2017). Chu, Saucier, and Hafner (2010) also suggest that adolescents can have multiple sub-types of support, including perceived and enacted support. They write that perceived support refers to the amount of support adolescents think that they have, whereas enacted support refers to the amount of support adolescents have already received (Chu et al., 2010). Throughout the literature, strong social support networks have also been linked to positive adolescent outcomes, such as a decreased likelihood of engaging in substance use (Cutrin et al., 2017; Micalizzi et al., 2019); delinquency (Bax & Hlasny, 2019; Micalizzi et al., 2019); and violent/nonviolent behavior (Cutrin et al., 2017; Kurtz & Zavala, 2017).

One source of social support that adolescents can receive is from their parents or family. Some studies have examined the role of various parenting constructs as mediating (Cutrin et al., 2017) or moderating variables (Micalizzi et al., 2019) on the relationship between various predictors and externalizing behavioral issues, such as delinquency, substance use, or violent/nonviolent behaviors. Cutrin et al. (2017) examined whether parental support (e.g., warmth, responsiveness, and closeness) and parental knowledge (e.g., knowing with whom and where their child spends time outside of the home) affect juvenile antisocial behaviors, such as substance abuse, nonviolent behavior (e.g., stealing something from school or running away from home), and violent antisocial behaviors (e.g., using a weapon to hurt someone). Their sample consisted of 2 subgroups: both male and female high school students aged 14 to 20 (referred to as “students”) and males only aged 14 to 22 from juvenile detention centers (referred to as “offenders”). Cutrin et al. found that for both males and females in the student group, parental support was positively associated with substance abuse and violent behavior. However, parental support was positively associated with nonviolent behavioral issues only for males in

the student group. Surprisingly, the more parental support both male and female students experienced, the *more* substance use and violent behaviors they engaged in. Also, the more parental support male students experienced, the more nonviolent behavioral issues they had. However, parental support was also positively associated with parental knowledge for both male and female students. Further, parental knowledge was negatively associated with all three externalizing behavioral issues (i.e., substance abuse, nonviolent behavior, violent behavior) for both males and females in the student group. Therefore, it appears that for the student group, there is a direct effect of parental social support on externalizing behavioral issues regardless of gender; however, when parental social support is combined with parental knowledge, the juveniles had fewer externalizing behavioral issues, regardless of gender.

For males in the offender group, Cutrin et al. found no direct association between parental support and either of the three externalizing behavioral issues. However, as with the student group, parental support was positively associated with parental knowledge for the males in the offender group and parental knowledge was negatively associated with all three externalizing outcomes. Therefore, male offenders who had more parental support also had parents who had more knowledge of their activities and friendships. Further, offenders who had parents with more knowledge of their activities and friendships had fewer externalizing behavioral issues (i.e., substance use, nonviolent behavior, violent behavior). Cutrin et al. argue that, for both the student and offender groups, although parental support is not a direct protective factor against antisocial behaviors, it can indirectly protect adolescents if parents have knowledge of the juveniles' activities and friendships.

In their longitudinal study of 1023 participants in grades 6 through 8, Micalizzi et al. (2019) examined whether parental support moderated the effect of three sources of parental

knowledge (i.e., parental control, parental solicitation, and child disclosure) on substance initiation (i.e., alcohol, tobacco, marijuana, other drug use) and delinquency over time. In terms of substance initiation, they found that the more parental control the participants reported, the less likely they were to initiate the use of substances; however, this association was only for those who reported high levels of parental support. In terms of delinquency, they found a relationship between all three sources of knowledge (i.e., child disclosure, parental solicitation, and parental control) and delinquency, such that the more parental knowledge, regardless of the source, the less delinquency they engaged in over time. However, this too was only for those who also reported higher levels of parental support. Both Cutrin et al. and Micalizzi et al.'s findings suggest the importance that supportive familial relationships can have during adolescence.

Other studies have also examined parental social support as a predictor of adolescent delinquency (Bax & Hlasny, 2019) and violent behavior/offending (Kurtz & Zavala, 2017). Bax and Hlasny (2019) examined whether parenting factors (e.g., frequency of parent-child conversations, parental love and affection, parental monitoring); peer delinquency (e.g., having friends who smoke or have been absent from school; having been a victim or perpetrator of certain acts from your peers); school factors (e.g., level of school-related stressed regarding homework or exams); and personality factors (e.g., feeling worthy or finding enjoyment in teasing peers) influenced violent and non-violent delinquency in South Korean adolescents, while also looking at possible gender differences. They found that boys who had parents who show them love and affection, know where they are when they leave the house, have frequent conversations with their parents, and come from intact families, were less likely to engage in both violent and non-violent delinquency. Girls who had parents who show them love and

affection and whose parents know where they are when they leave the house were also less likely to engage in both violent and nonviolent delinquency. Surprisingly, and unlike boys, girls who had parents with whom they have frequent conversations were *more* likely to engage in both forms of delinquent behavior. Bax and Hlasny do not give an explanation to this finding, warranting future research. Another study by Kurtz and Zavala (2017) also examined violent offending and violent behavior in adolescence and used differential social support and coercion theory as a foundation for their study. They sought to examine whether types of social interactions (i.e., supportive or coercive in nature) could contribute to delinquent behaviors, while also accounting for impulsivity and self-control. Kurtz and Zavala found that different forms of violent behavior were associated with less support from both an adolescents' mother and father, however, more so regarding support from the mother. They also found that all four support variables (e.g., having an intact family, receiving support from the mother, receiving support from the father, and parental supervision) were all associated with a decrease in delinquency, violent offending, and violent behavior. Furthermore, they found that impulsivity had a negative association with the four support variables and that males tended to display more impulsivity than females. Kurtz and Zavala argue that social support from parents can help reduce impulsive behavior in adolescents, which in turn, could help reduce their risk of violent offending, violent behavior, or engagement in delinquent acts.

The above-cited studies exemplify the need for strong familial and parental support for adolescents, considering the significant role that they can play in adolescents' lives. However, even though parental social support can be beneficial to adolescents, peer support and support from other adults (e.g., teachers, relatives) can be impactful as well. Chu et al. (2010) noted in their meta-analysis that social support from teachers was the most impactful in terms of

children's and adolescents' well-being, with social support from parents being the second most impactful type of support for children and adolescents. Since adolescents spend much of their time at school, they are not under the direct supervision of their parents, which means that these adolescents must rely on others at certain times if they are dealing with stressful situations. However, Chu et al. (2010) also note that parental support can have negative consequences for adolescents, since parental support, at times, can result in conflict during this stage of individuals' lives. Social support from peers during adolescence can be particularly beneficial as well (Cooley, Fite, Rubens, & Tunno, 2015), since most peer victimizations occur while other peers are around, giving the adolescent support when their parents cannot be there (Craig, Pepler, & Atlas, 2000, as cited in Cooley et al., 2015). Therefore, the relative influence of various sources of social support have been studied regarding externalizing behaviors (Lardier et al., 2018; Brezina & Azimi, 2018) and both internalizing and externalizing behaviors (Cotter, Wu, & Smokowski, 2016).

Lardier et al. (2018) examined whether school importance, community participation, family cohesion, and overall social support (from friends, school personnel, and other adults combined) affected adolescents' substance use for a sample of 737 adolescents in grades 9 through 12. They found that social support indirectly influenced substance use for both male and female adolescents through school importance and community participation. More specifically, those who had higher levels of social support from their greater social network (e.g., mentors or teachers) reported greater emphasis on the importance of education and reported that they participated in more community activities. In turn, those who placed greater importance on education and engaged in more community activities, were less likely to report substance use.

Lardier et al. emphasized the importance of multiple forms of support for more optimal adolescent outcomes in their study since it can play a vital role in adolescents' lives.

Brezina and Azimi's (2018) study examined the differential social support hypothesis, which posits that social support fosters a sense of commitment to and conformity with the source of the support. Therefore, if the source of the social support is a law-abiding individual, the recipient of that support will have a sense of commitment to that law-abiding individual and will model his/her lawful behavior. On the other hand, if the source of social support is a deviant individual, the recipient of that support will have a sense of commitment to that deviant individual and will model his/her deviant behavior. Therefore, the main focus of their study was to examine whether peer social support could have what is referred to as a "dark side" (p. 652). To do so, they conducted a secondary analysis of a subsample of 1198 adolescents aged 11 to 17 from the National Youth Survey (Elliott, Huizinga, & Ageton, 1985), who reported that they affiliate with delinquent peers. They were interested in whether Time 2 social support from delinquent peers predicted Time 2 loyalty to peers and whether Time 2 loyalty to delinquent peers predicted Time 2 delinquency, controlling for Time 1 delinquency. They also examined a possible direct effect from delinquent peer social support to delinquency, arguing that they may simply be modeling the behavior of supportive peers. Toward that end, they measured two forms of peer social support, which included peer emotional support (e.g., my friends are willing to listen) and peer identity support (e.g., my friends would be supportive if I got into trouble with the police). In addition, they measured both emotional and identity support from more conventional sources of social support (i.e., from family). They found that, for adolescents who affiliate with delinquent peers, delinquent peer emotional social support had a direct influence on the likelihood of engaging in delinquent behavior. Those with high levels of Time 2 delinquent

peer emotional support were more likely to engage in Time 2 delinquent behavior, even when controlling for Time 1 delinquent behavior. However, Time 2 delinquent peer identity support had an indirect influence on Time 2 delinquency with Time 2 loyalty to delinquent peers mediating the association. Those who had more delinquent peer identity support had more loyalty to delinquent peers, which in turn, increased the likelihood that they would engage in delinquent behavior. Interestingly, Time 2 family emotional support (but not family identity support) also indirectly influenced Time 2 delinquency through Time 2 delinquent peer loyalty. Those who had more family emotional support were less likely to feel loyal to their delinquent peers. In turn, those with less loyalty to deviant peers engaged in less delinquency.

In addition to examining externalizing behaviors, other studies have also looked at both internalizing and externalizing behaviors and multiple forms of social support. Cotter et al.'s (2016) 5-year longitudinal study, with a highly diverse sample of approximately 3000 males and 3000 females in grades 6 through 11, examined possible gender differences in the effect of adolescents' experienced parental emotional social support (e.g., how often did the adults in your home let you know that you were loved), perceived social support from friends (e.g., I can count on my friends for support), and perceived social support from teachers (e.g., my teachers care about me) on both internalizing and externalizing behavioral problems based on Achenbach and Rescorla's Youth Self Report version of the Child Behavior Checklist (CBCL-YSR; Achenbach & Rescorla, 2001). They found no differences in internalizing behavioral issues based on either perceived friend or teacher support; however, they found that both males and females who experienced more parental support had fewer internalizing behavioral issues. Interestingly, males had more externalizing behavioral issues when they had *more* experienced parental support, but parental support was not associated with externalizing behavioral issues for females.

In terms of friends' support, both males and females who perceived that they had more support from friends, had more externalizing behavioral issues. Once again, teacher support did not predict externalizing behavioral issues for either males or females. Therefore, it appears that social support has more beneficial effects in terms of internalizing behavioral issues, depending on the source of the support, and more negative effects on externalizing behavioral issues, depending on the source of the support.

Social Support as a Mediator and/or Moderator between Peer Victimization and Negative Outcomes

As shown by the above-cited studies, the role that peer victimization and various sources of social support play in negative outcomes for children and adolescents has been well-documented. However, several studies have examined the possible mediating and/or moderating role of social support on the relationship between peer victimization and negative outcomes in adolescence. Several have focused on internalizing behavioral outcomes only (Burke, Sticca, & Perren, 2017; Desjardins & Leadbeater, 2011, Tanigawa, Furlong, Felix, & Sharkey, 2011; Papafratzeskakou, Kim, Longo, & Riser, 2011), with one study focusing on externalizing behavioral outcomes only (Cuevas, Sabina, Fahlberg, & Espinola, 2021). However, the majority of studies that examined the possible mediating and/or moderating role of social support on negative outcomes examined possible differential effects on internalizing and externalizing behavioral outcomes (Fernandez, Loukas, Golaszewski, Batanova, & Pasch, 2020; Rasalingham, Clench-Aas, & Raanaas, 2017; Cooley et al., 2015; Attar-Schwartz, Mishna, & Khoury-Kassabri, 2019; Tucker, Finkelhor, & Turner, 2020) with only Cooley et al., Attar-Schwartz et al., and Tucker et al. examining delinquency as a specific form of externalizing behavior. In addition, past studies on the possible mediating and/or moderating role of social support between peer

victimization and negative outcomes examined various sources of social support and various types of peer victimization (e.g., relational and/or physical peer victimization). Finally, most past studies that examined these relationships used cross-sectional data, with very few examining these relationships longitudinally.

In terms of internalizing outcomes, Tanigawa et al. (2011) examined whether social support buffered the effect of peer victimization on depressive symptoms, with 544 male and female seventh and eighth grade students. They examined four sources of social support (i.e., parents, teachers, classmates, and close friends) and relational peer victimization and overt/physical peer victimization combined. For both male and female students, they found that peer victimization had a significant direct effect on depressive symptoms, and that males and females who experienced more victimization also had more depressive symptoms. In addition, social support from all four sources directly predicted depressive symptoms, in that males and females who experienced more social support had fewer depressive symptoms, regardless of the source of support. In terms of the possible moderating effect of social support, no interactions between peer victimization and any of the sources of social support were significant for female students. However, two sources of social support (i.e., support from parents and support from a close friend) moderated the effect of peer victimization on depressive symptoms for male students. Although peer-victimized males who had either high or low support from parents or peers had more depressive symptoms, the association between peer victimization and depressive symptoms was stronger for males with low levels of parental support and low levels of support from a close friend, compared to high parental support and high levels of support from a close friend. Therefore, when including physical forms combined with relational forms of peer

victimization, both parental and peer social support appeared to buffer the effects of peer victimization on depression.

Burke et al. (2017) examined the effects of both parental support and a specific form of peer support (i.e., friendship support) on the relation between both relational and overt/physical peer-victimization combined and depressive symptoms; however, Burke et al. conducted two separate cross-lagged structural equation models, using four six-month waves of longitudinal data. Their sample consisted of 960 seventh-grade Swiss students, with 725 students participating in all four waves. In both the parental support and friendship support models, they found stability in victimization, depressive symptoms, and both parental support and friendship support over time. In addition, they found a bidirectional association between victimization and depressive symptoms, indicating that adolescents who experience either one of them will most likely experience the other, and indicating stability in the association between the two, possibly creating a self-perpetuating vicious cycle of negative experiences. In addition, longitudinally high levels of victimization and lower levels of both parental support and friendship support were associated with higher levels of depressive symptoms over time. However, neither parental support nor friendship support was found to moderate the effect of victimization on depressive symptoms. Overall, peer victimization was found to be a risk factor and both parental support and friendship support were found to be protective factors for depressive symptoms.

In their longitudinal study, Desjardins and Leadbeater (2011) also examined parental support and peer support; however, they also examined whether, for those who experience peer victimization, parental support might differentially influence depressive symptomology depending on which parent (i.e., father or mother) provided the parental support. To that end, they examined whether emotional support from both the mother and father and support from

peers moderated the association between relational victimization and depressive symptoms in adolescents using a national sample of 644 12 to 19-year-old adolescents in Canada. Desjardins and Leadbeater found a direct effect of relational victimization on depressive symptoms and a direct effect of maternal (but not paternal) emotional support and peer emotional support on depressive symptoms. For the direct effect, adolescents who experienced more relational victimization had more concurrent depressive symptoms at all three time points. Further, adolescents who had more maternal emotional support and adolescents who had more peer emotional support had fewer concurrent depressive symptoms at all three time points. However, emotional support, regardless of the source, did not moderate the effects of relational victimization on concurrent depressive symptoms at any of the three time points. In addition, none of the three sources of emotional support predicted depressive symptoms longitudinally. However, there was a significant interaction between relational victimization at Time 2 and each of the three sources of emotional support at Time 2 on depressive symptoms at Time 3. Interestingly, mother and father parental support acted in opposite ways. Relationally victimized adolescents with high (but not moderate or low) levels of maternal emotional support had *increases* in depressive symptoms at Time 3. In addition, relationally victimized adolescents with high (but not low and moderate) levels of paternal emotional support had *decreases* in depressive symptoms at Time 3. Finally, relationally victimized adolescents with high and moderate (but not low) levels of peer emotional support had *increases* in depressive symptoms at Time 2. Therefore, it appears that the only source of emotional support that positively buffered the effect of relational victimization on depressive symptoms was emotional support from the father, whereas high levels of peer and maternal emotional support were associated with an increase in depressive symptoms. Therefore, the findings from Desjardins and Leadbeater

(2011) suggest that parental support can play a positive role in relationally victimized children in terms of depressive symptoms.

None of the above-cited studies have examined possible differences in the effect of various types of peer victimization. However, Papafratzeskakou et al. (2011) examined whether parental and peer support moderated the unique effect of two forms of victimization (i.e., relational and physical/overt) on depressive symptoms with a sample of 261 adolescents aged 10 to 14. In terms of direct effects, they found that both male and female adolescents who experienced either relational or physical peer victimization had more depressive symptoms. In addition, regardless of gender, parental social support and peer social support predicted depressive symptoms, since those with higher levels of peer or parental social support had lower levels of depressive symptoms. However, in terms of the moderating effects of social support, only peer social support moderated the effect of peer physical victimization on depressive symptoms. Unlike Desjardins and Leadbeater (2011), cited above, both male and female adolescents who had lower levels (but not higher levels) of support from their peers were more likely to experience depressive symptoms after being physically victimized. However, Desjardins and Leadbeater only examined relational victimization, whereas Papafratzeskakou et al. examined both relational and physical/overt victimization. Therefore, the type of peer victimization could differentially affect adolescents based on the support they receive from their peers.

As suggested above, several studies have examined the effect of social support and peer victimization on both internalizing and externalizing behavioral issues. For example, Fernandez et al. (2020) examined whether three sources of social support (i.e., parents, peers, and teachers) moderated the effects of relational victimization on both depressive symptoms and conduct

problems with a sample of 189 sixth to eighth grade students (11 to 15 years old) who self-identify as “Hispanic, Latino, or Mexican American” (p. 213), with roughly half reporting that Spanish is the main language spoken at home. They tested two hierarchical regression models, one predicting depressive symptoms and one predicting conduct problems, and found that those who experienced more relational victimization and those with less parental support had higher levels of both depressive symptoms and conduct issues, while controlling for gender and language spoken at home. No other sources of support predicted depressive symptoms; however, those with higher levels of teacher support had fewer conduct problems. In terms of possible interactions between relational victimization and sources of social support, three interaction terms (i.e., relational victimization by peer social support and relational victimization by parental social support on depressive symptoms; relational victimization by parental support on conduct problems) were significant. More specifically, those who had high levels of parental support, regardless of the level of relational victimization, had lower levels of depressive symptoms. However, those with low levels of parental support had high levels of depressive symptoms, but only if they experienced high levels of relational victimization, and not if they experienced low levels of relational victimization. Although the interaction term was significant for relational victimization and peer support, those who experienced higher levels of relational victimization had higher levels of depressive symptoms, regardless of the level of peer support. Together, these findings suggest that parental support (but not peer support) buffered the effects of relational victimization on depressive symptoms. However, the opposite was found for conduct problems; high levels of parental support tended to *exacerbate* the relationship between parental support and conduct problems. In other words, conduct problems increased more so for relationally victimized individuals if they had high parental support.

In addition, Rasalingham et al. (2017) examined whether two sources of social support (i.e., peer and parental) mediated the effect of peer victimization on both internalizing (i.e., emotional issues) and externalizing behaviors (i.e., conduct problems, hyperactivity/attention issues) and total symptom problems (i.e., summed emotional, conduct, hyperactivity/attention issues) for adolescent outcomes. They dichotomized all outcomes as either low risk or borderline/high risk. First, both boys and girls who reported being victimized by their peers were 3.9 and 4.2 times, respectively, more likely to be borderline/high risk for total symptom problems. Boys were also 5 times and girls were 3.6 times more likely to have borderline/high risk for emotional issues if they were peer-victimized. Regarding externalizing problems, if they were peer-victimized, both boys and girls were 3.5 times more likely to be borderline/high risk for conduct problems and 1.7 times more likely to be borderline/high risk for hyperactivity/attention issues. When examining the indirect effect of peer victimization on total symptom problems, Rasalingham et al. found that adolescents who were victimized by their peers were less likely to perceive that their parents supported them and less likely to perceive that their peers supported them. In addition, those who perceived that they had less support from both their peers and parents scored higher on total symptom problems. However, because both internalizing and externalizing behavioral difficulties were combined into an overall difficulty score for all mediational models, it is unknown whether social support differentially mediated the association between peer victimization and externalizing behavioral difficulties and internalizing behavioral difficulties. It should also be noted that this study did not examine whether the source of social support differentially mediates the association of peer victimization on *juvenile delinquency*, specifically, suggesting the need for research that examines whether source of

social support differentially mediates the relationship between peer victimization and juvenile delinquency as a specific form of an externalizing behavioral issue.

To that end, Cuevas et al. (2021) examined whether peer and sibling victimization combined, immigration status, enculturation, acculturation, and familism support (i.e., support from significant others, family, friends) contributed to adolescents engaging in various types of either delinquency (i.e., physical, property, drug/alcohol) or dating aggression (i.e., physical, sexual, psychological). Using a sample of Latino adolescents between the ages of 12 and 18, they found that adolescents who had more familism support were less likely to engage in dating aggression and other forms of delinquency. They also found that victimization by peers and siblings was positively associated with dating aggression (but not sexual dating aggression) and engaging in various forms of delinquency. Cuevas et al. argue that it is possible that adolescents who have stronger familism support may better understand what healthy relationships look like, increasing the likelihood their own dating relationships will be characterized as supportive. They also argue that adolescents who have strong family support may also experience more parental supervision, which may explain the negative association between family support and delinquency in their study.

In terms of delinquency as a specific type of externalizing behavior along with internalizing behaviors, Cooley et al. (2015) examined whether self-reported peer social support and peer delinquency moderated the effects of teacher-reported overt (i.e., being physically harmed by peers, such as being pushed or physically attacked) and relational (i.e., non-physical harm, such as having rumors spread) victimization on participants' scores on both the withdrawn depression subscale and the delinquency/rule-breaking behavior subscale of the CBCL-YSR (Achenbach & Rescorla, 2001). Only peer social support was found to significantly predict

withdrawn depression; the more peer social support, the less withdrawn depression. In terms of interaction effects, none of the overt victimization interactions were significant for withdrawn depression. However, regardless of the level of relational victimization, those with high levels of peer social support had low levels of depressive symptoms. On the other hand, those with low levels of peer social support had significantly higher levels of depressive symptoms if they experienced high levels of relational victimization, compared to those with low levels of relational victimization. In terms of delinquency, they found that gender, overt victimization, and peer delinquency uniquely predicted delinquency/rule-breaking behavior. However, neither relational victimization nor peer social support predicted rule-breaking behavior. For gender, males scored higher in delinquency/rule-breaking behavior than females. The type of victimization also appeared to make a difference in that those who experienced more overt victimization (but not relational victimization) were more likely to engage in delinquency/rule-breaking behavior. In addition, those who had peers who engaged in more delinquency were more likely to engage in delinquency/rule-breaking behavior. In terms of interactions between peer social support and peer victimization, no interaction between overt victimization and peer social support was significant, suggesting that overt victimization has a unique direct effect only on delinquency/rule-breaking behavior. However, a three-way interaction between relational victimization, peer delinquency, and peer social support was found, suggesting that for adolescents with high levels of peer social support and high levels of peer delinquency, relational victimization marginally predicted increased delinquency/rule-breaking behavior. Further, relational victimization did not predict delinquency/rule-breaking behavior for adolescents with both high levels of peer delinquency and low levels of social support.

In addition, Attar-Schwartz et al. (2019) examined perceived classmate support, bullying victimization, and internalizing and externalizing behaviors, including delinquency, for a sample of 669 fourth, seventh, and tenth grade students in Canada, while controlling for parental and teacher support. However, rather than examining social support as a moderator, they examined whether gender moderated the effect of perceived classmate support on both CBCL-YSR (Achenbach, 1991) internalizing behavior (i.e., withdrawal, somatic problems, anxiety/depression) combined into an overall internalizing score and externalizing behavior (i.e., aggression, delinquency/rule-breaking behavior) combined into an overall externalizing score. In addition, they examined the possible mediating effect of bullying victimization (i.e., physical, verbal, and social bullying combined) on the relationship between classmate social support and both overall internalizing and overall externalizing scores. They found direct effects for classmate support, bullying victimization, gender, and parental support (but not teacher support) on internalizing behavioral issues. Those with either less perceived support from classmates, more bullying victimization, or less parental support had higher internalizing behavioral issues. In terms of the moderating role of gender, the interaction between gender and perceived classmate support was significant for internalizing behavior only. Although both slopes were significant, the association between perceived classmate support and internalizing behavior was stronger for females than it was for males. With regard to externalizing behavioral issues, they only found two direct effects (i.e., bullying victimization and parental support) in that those with either more bullying victimization or less parental support had higher externalizing behavioral issues. The interaction between gender and classmate support on externalizing behavior was not significant. However, they also tested for possible mediating effects and found that bullying victimization partially mediated the association between perceived classmate support and

internalizing behavior and fully mediated the association between perceived classmate support and externalizing behavior. Therefore, students who perceived higher levels of classmate support were less likely to be bullied by their peers and, in turn, less likely to engage in externalizing behavior. Although not the main focus of their study, it should also be noted that parental social support predicted both internalizing and externalizing behavior; so the more parental support, the less internalizing behavior and externalizing behavior. They also noted that the students reported relatively high levels of all three sources of support; however, the highest perceived social support was from parents and the lowest was from classmates. Attar-Schwartz et al.'s findings were consistent with other studies reviewed above which provide evidence that, although relationships with peers are important in adolescence, parents remain important figures in their children's lives during this period.

In addition to the possible moderating role of social support examined in the above studies, like Attar-Schwartz et al., Tucker et al. (2020) also tested a mediational mode. However, Tucker et al. examined whether various sources of social support mediated the association between *sibling* victimization (but not *peer* victimization) with other internalizing behaviors, such as mental health distress and self-esteem. In a study of 850 10 to 17-year-olds, while using data from the National Survey of Children's Exposure to Violence (conducted by Tucker et al., 2020), they measured two sources of social support (i.e., family and friend social support) and overall total social support from family and friend combined. Their primary focus was to examine whether social support mediated the association between sibling victimization and mental health distress (i.e., trauma symptom scores for anger, depression, anxiety, dissociation, and posttraumatic stress), self-esteem, and delinquency. In terms of direct effects, they found that adolescents with more sibling victimization in the past year were more likely to

have lower self-esteem, more mental health distress, and engage in more delinquency. They further found that adolescents who experienced more sibling victimization in the past year tended to have less family, friend, and total social support. In addition, family, friend, and overall total social support had direct effects on mental health distress and self-esteem. In other words, the more family, friend, and total support the adolescents had, the less mental health distress and the higher the self-esteem. In addition, they found that family, friend, and total support mediated the association between both sibling victimization and mental health and sibling victimization and self-esteem; however, family social support was more impactful than peer support in both of these instances. The more sibling victimization the adolescents experienced, the less family, friend, and total support the adolescents had. In turn, the less family, friend, and total support the adolescent had, the more mental health distress and the lower the self-esteem they experienced. Interestingly, when it came to delinquency, they found that only family and total support, but not friend support, predicted delinquency. In essence, the more family and total support (but not friend support) that adolescents had, the less likely they were to engage in delinquent behavior. In addition, family and total support (but not friend support) mediated the association between sibling victimization and delinquency. Those with more sibling victimization tended to have less family and total support, and, ultimately, engaged in more delinquency. Tucker et al.'s study further demonstrates the importance of the source of social support in reducing both internalizing and externalizing behavioral issues for victimized adolescents.

Based on the mixed results for the influence of peer social support on externalizing outcomes for peer-victimized adolescents, it is possible that the mediating effect of perceived support from a close friend on the relation between peer victimization and negative outcomes

may vary based on the quality of the friendship. Therefore, You and Bellmore (2012) examined whether five dimensions of friendship quality (i.e., conflict, security, closeness, help/protection, companionship) mediated the effect of relational victimization on the internalizing subscales (i.e., anxious depression, withdrawn depression, somatic complaints) and externalizing subscales (i.e., aggression, delinquency/rule breaking behavior) of Achenbach's (1991) CBCL-YSR measure. In terms of direct effects, they found that adolescents who experienced relational victimization had more internalizing behavioral issues and fewer externalizing behavioral issues. In addition, four friendship quality dimensions (i.e., conflict, security, closeness, help/protection; but not companionship) predicted internalizing behavioral issues; the more conflict and closeness and the less security and help/protection in the friendship, the more internalizing behavioral issues the adolescent had. The association between relational victimization and internalizing behavior was mediated by friendship conflict, friendship security, and friendship help/protection. The more relational victimization the adolescents experienced, the more conflict, the less security, and the less help/protection they had in their friendships, all of which ultimately resulted in more internalizing behavioral problems. In terms of externalizing behavioral issues, they found that the conflict and companionship dimensions directly predicted externalizing behavior; the more conflict and companionship in the friendship, the more externalizing behavioral issues. Further, the association between relational victimization and externalizing behavior was mediated by friendship conflict and friendship companionship. Therefore, adolescents who experienced more relational victimization tended to have both more conflict and less companionship in their friendships, which, in turn, increased the likelihood that they would engage in externalizing behavior. Therefore, the quality of friendships may account for differences in peer social support across studies.

The Importance of Polyvictimization and Non-Victimization Adversity

It has been noted that adolescents can experience different forms of victimization, including victimization from peers, family members, or other adults, thus giving birth to the term *polyvictimization*. Finkelhor, Turner, Hamby, and Ormrod (2011) describe polyvictimization as “having experienced multiple victimizations of different kinds, such as sexual abuse, physical abuse, bullying, and exposure to family violence” (p. 4). They stress the importance of studying multiple forms of victimization, since most of the literature focuses only on one type of victimization and not multiple forms of victimization. They also argue that studying multiple forms of victimization can benefit individuals who work with children on a daily basis (e.g., teachers, psychologists, law enforcement) in order to prepare them to better identify and help children who are considered at-risk. Subsequent studies examined polyvictimization of children and adolescents and found that children who were victims of polyvictimization tended to come from families that were not intact, did not have both parents, or were in households that had stepfamilies (Finkelhor, Ormrod, & Turner, 2009; Turner, Finkelhor, & Ormrod, 2010). Turner et al. (2010) also found that victims of polyvictimization were more likely to experience sexual abuse and Finkelhor et al. (2011) found that polyvictimization was closely related to trauma symptoms. The above-cited studies outline the importance of polyvictimization in terms of negative outcomes for children and adolescents, since they can have perilous effects.

Although children and adolescents can experience victimization from several sources, they can also experience non-victimization adversities as well. Experiencing non-victimization adversities in childhood can increase children’s or adolescents’ engagement in delinquent behavior (Connolly & Kavish, 2019). Connolly and Kavish (2019) found that participants who experienced more adversity in childhood (e.g., experiencing someone breaking into their

apartment or house while they were there, seeing someone get shot or shot at with a gun, etc.) tended to engage in more delinquent behavior across seven waves of data collection, as opposed to participants who had experienced less adversity in childhood. Connolly and Kavish (2019) also found that participants who experienced more childhood adversity also had a greater likelihood of being in a school or neighborhood that has gangs. Another study by Turner, Finkelhor, Hamby, and Henly (2017) examined non-victimization adversities (e.g., homelessness, having a parent in prison, being hospitalized due to a bad illness, etc.), but focused more specifically on participants who had a parent that was absent because they were serving in the military/war. Turner et al. found that children who had experienced this specific type of non-victimization adversity were more likely to also experience another adversity or other types of victimization (e.g., peer victimization, sibling victimization, sexual assault, etc.). Therefore, the above-cited studies stress the importance of non-victimization adversity, since it can have deleterious effects for children and adolescents. Here, both polyvictimization and non-victimization adversity will, thus, be included as control variables.

Summary and Current Study

The role of parental support on internalizing behaviors is robust. Most studies have found that low levels of parental support tend to be associated with an increase in internalizing behavioral issues, particularly depression, in adolescence (Fernandez et al. 2020; Desjardins & Leadbeater, 2011; Tanigawa et al., 2011; Burke et al., 2017; Papafratzeskakou et al., 2011). However, the overall results of studies that examined the role of parental support on externalizing behavioral issues in adolescence is mixed. Some studies found that higher levels of social support from parents is associated with a greater increase in the likelihood of externalizing behavioral issues, particularly for male adolescents (Cotter et al., 2016; Cutrin et al., 2017) and

some have found higher levels of parental social support to be associated with lower levels of externalizing behavioral issues (Kurtz & Zavala, 2017; Bax & Hlasny, 2019; Cuevas et al., 2021), particularly when parental support is combined with parental control or knowledge (Micalizzi et al., 2019).

The role of peer social support on internalizing behavioral issues is also robust. Most of the above-cited studies that examined the possible association found that low levels of peer social support were associated with an increased risk of internalizing behavioral issues (Cutrin et al., 2017), particularly depression (Desjardins & Leadbeater, 2011; Tanigawa et al., 2011; Burke et al., 2017; Papafratzeskakou et al., 2011; Cooley et al., 2015; Attar-Schwartz et al., 2019; Tucker et al., 2020), with only one finding no association between peer social support and internalizing behavioral issues (Fernandez et al., 2020). However, the role of peer social support in terms of externalizing behavioral issues was less clear. All of the above-cited studies found no association between peer social support and externalizing behavior or delinquency, specifically (Cooley, et al., 2015; Attar-Schwartz et al., 2019; Tucker et al., 2020). Although, when externalizing and internalizing behavioral issues were combined into a total symptom score (Rasalingham et al., 2017), higher levels of peer social support were associated with increases in the total symptom problems. In addition, when social support was measured by combining friend, family, and significant other social support, higher levels of total support decreased the likelihood of delinquency or dating aggression. Finally, the source of the peer social support may differentially influence delinquency. Brezina and Azimi (2018) found that emotional support from delinquent peers directly increased the likelihood of delinquency and identity social support from delinquent peers indirectly increased the likelihood of delinquency through loyalty to delinquent peers. It should be noted that both Attar-Schwartz et al. (2019) and Tucker et al.

(2020) examined both parent and peer social support and found a greater influence of parent social support than peer, which is surprising given that a milestone of adolescence is establishing autonomy from parents (Karabanova & Poskrebysheva, 2013). Nonetheless, it appears that parents remain influential and important sources of support during adolescence, even though adolescents tend to shift more towards their peers during this time.

In terms of moderating and/or mediating roles of social support, several studies found that parental social support buffered the effects of peer victimization on internalizing behaviors, particularly depression (Fernandez et al., 2020; Tanigawa et al., 2011), with Desjardins and Leadbeater (2011) only finding that association for social support from the father, but not the mother. In addition, Tucker et al. (2020) found family support mediated the effect of sibling victimization on mental health distress, self-esteem, and delinquency. In terms of peer social support, the results are less clear. Although Fernandez et al. found no buffering effect of peer victimization on depression, peer social support was found to buffer the effects of peer victimization on depression in other studies (Papafratzeskakou et al., 2011; Cooley et al., 2015) and total symptom problems (Rasalingham et al., 2017). In addition, friendship support mediated the relation between sibling victimization and both mental health distress and self-esteem.

Only two known studies examined the possible moderating and/or mediating effect of social support on the association between peer victimization and internalizing or externalizing outcomes longitudinally. Although Desjardins and Leadbeater's (2011) study was unique in that they examined parental support from the mother and father separately and found that the only source of social support that buffered the effect of peer victimization on negative outcomes was social support from the father, they only examined the effect of relational forms of peer

victimization on depression. In addition, Burke et al. (2017) used a cross-lagged structural equation model for their longitudinal data to examine the possible influence of peer victimization on depression and found a bidirectional effect for victimization and depression. However, they did not find that social support moderated that association. Unfortunately, neither of these longitudinal studies examined social support from other sources, such as adults other than parents. In addition, Desjardins and Leadbeater only examined relational forms of peer victimization. Although Burke et al. included physical forms of peer victimization along with relational peer victimization, they used a combined peer victimization score, rather than examining the unique influence of each type of peer victimization separately. Finally, and most importantly, neither of these two longitudinal studies examined the possible mediational role of various sources of social support between peer victimization and delinquency.

Some studies have also found gender differences regarding both peer victimization and delinquency in children and adolescents. Previous literature has found that males tend to engage in more delinquent acts or rule-breaking behavior than females (McGee et al., 2005; Kort-Butler, 2010) and males tend to experience more overt/physical victimization than females (Cooley et al., 2015). Studies have also found that females tend to report higher levels of social support than males (Fernandez et al., 2020; Cooley et al., 2015). In addition, other studies have found disparities in terms of race, finding that white adolescents are more likely to engage in delinquent behaviors than black adolescents (Kort-Butler, 2010), and that white adolescents had a higher externalizing score than Latino adolescents (Cotter et al., 2016). Age differences have also been found when studying peer victimization (Chan & Chui, 2013), finding that the older an adolescent is, the more likely they will engage in bullying behavior and the younger the adolescent is, the more likely they will suffer victimization from their peers at school. Previous

literature has also concluded that lower socioeconomic statuses of children and adolescents were associated with higher levels of delinquency (Connolly, Lewis, & Boisvert, 2017) and school performance and engagement have been found to be associated with delinquency as well. Henry, Knight, and Thornberry (2012) found that school disengagement (e.g., missing 20% or more school days, failing a core subject, suspensions, doing poorly on standardized tests) predicted both dropping out of school and more engagement in delinquent behaviors for adolescents. In addition, exposure to serious life events has also been shown to negatively affect children and adolescents throughout the literature. A study by Turner, Finkelhor, and Henly (2021) found that children who are exposed to family or friend homicide are at a greater risk for experiencing other life adversities and are also more likely to live in neighborhoods that have higher rates of community disorder. Lastly, as mentioned above, studies have also found that adolescents who are victims of polyvictimization tend to come from homes which are not intact or have stepfamilies (Finkelhor et al., 2009; Turner et al., 2010). Therefore, I will control for each of these factors in my regression analyses.

Based on the above-cited studies, the purpose of my study is to examine the association between peer and sibling victimization (both relational and physical) and delinquency as a specific form of an externalizing behavior, while also assessing whether various sources of social support (i.e., family, friend, other adult) mediate this association. Although studies have examined the association between peer victimization on both internalizing and externalizing behavioral issues, and whether social support mediates that association, no known studies to date have longitudinally examined the effects of peer and sibling victimization on later juvenile delinquency specifically, nor have they examined the mediating role of three sources of social support on the relation between peer and sibling victimization and later juvenile delinquency. In

addition, I plan to control for demographic characteristics (i.e., gender, race, ethnicity, age, socioeconomic status, adversity, and family structure), prior delinquency, and prior polyvictimization experience to better understand the unique influence of relational and physical victimization by peers and siblings on later delinquency. Therefore, based on the previous literature, I will hypothesize the following direct effects:

H1: Controlling for demographic variables, polyvictimization, and non-victimization adversity, peer and sibling victimization at Time 2 will concurrently predict delinquency at Time 2.

H2: Controlling for demographic variables, polyvictimization, and non-victimization adversity, peer and sibling victimization at Time 1 will longitudinally predict delinquency at Time 2.

H3: Controlling for demographic variables, polyvictimization, and non-victimization adversity, delinquency at Time 1 will longitudinally predict delinquency at Time 2.

Although a cross-lagged analysis will provide some clarification regarding the direction of the effect of peer and sibling victimization and delinquency, I am unsure whether delinquency at Time 1 will longitudinally predict peer and sibling victimization at Time 2. I expect that the 3 sources of social support will either partially or fully mediate the association between both peer and sibling victimization at Time 1, delinquency at Time 1 and delinquency at Time 2.

Therefore, I also hypothesize the following indirect effects:

H4: The association between peer and sibling victimization at Time 1 and peer victimization at Time 2 will be mediated by all three sources of social support (i.e., family, friend, and other adult social support).

H5: The association between peer and sibling victimization at Time 1 and delinquency at Time 2 will be mediated by all three sources of social support (i.e., family, friend, and other adult social support).

H6: If delinquency at Time 1 is found to predict peer and sibling victimization at Time 2, it is expected that the association between delinquency at Time 1 and peer victimization at Time 2 will be mediated by all three sources of social support (i.e., family, friend, and other adult social support).

H7: The association between delinquency at Time 1 and delinquency at Time 2 will be mediated by all three sources of social support (i.e., family, friend, and other adult social support).

Method

Participants

Data were collected using the Technology Harassment Victimization study (THV) and were provided by Dr. Kimberly Mitchell Lema, the principal investigator of the THV study. Participants ranged from 10-18-years old and some were also 18-years-old or older, with a mean age of 15.2 and a standard deviation of 2.5. Of the total number of participants ($N = 791$), 50.2% were male ($n = 397$), and 49.8% were female ($n = 394$). In regards to the ethnicity of the THV study participants, 89.8% ($n = 710$) did not identify as Hispanic or Latino. Participants also had the option to refuse to answer or report that they were unsure if they identified as Hispanic or Latino. The race of the THV study participants also varied, with mostly white participants (79%; $n = 625$); however, the study included participants of other races, including: Black or African American; Asian; American Indian or Alaska Native; or Native Hawaiian or other Pacific Islander (18.2%; $n = 144$). Participants also had the option to choose that they identify as more

than one race, did not know what race they identify as, or refused to answer. There were also 22 missing responses regarding the race of the THV study participants (2.8%). The participants' family structure was also calculated, with the majority of participants living with either two biological parents or adopted parents (71.8%; $n = 568$); a single parent (18.1%; $n = 143$); one biological parent and one step-parent (6.1%; $n = 48$); or another adult (4%; $n = 32$). The socioeconomic status of the participants was also recorded, with 16.1% of participants considered to be low socioeconomic status (i.e., more than one standard deviation below the mean; $n = 127$); 61.3% of participants were medium socioeconomic status (i.e., -1 to +1 standard deviation from the mean; $n = 485$); and 22.6% were high socioeconomic status (i.e., more than one standard deviation above the mean; $n = 179$).

Measures

Peer and sibling victimization. Peer and sibling victimization was measured collectively in both Time 1 and Time 2, using items from the Juvenile Victimization Questionnaire (JVQ; Finkelhor et al., 2011). Time 1 used the following items: 4 items asked about *physical victimization* (e.g., "In the past year, did any kids, even a brother or sister, pick on you by chasing you or grabbing you or by making you do something you didn't want to do?"). There are also 3 items that ask about *relational victimization or exclusion* (e.g., "At any time in their/your life, did any kids ever tell lies or spread rumors?"). At Time 2, the same 4 items were asked regarding *physical victimization*, but only 1 *relational victimization* item was asked (e.g., "In the past year, did you get really scared or feel really bad because kids were calling you names, saying mean things to you, or saying they didn't want you around?"). In the original dataset, the response options for Time 1 were 1 = yes; 2 = no; 3 = not sure; and 4 = refused to answer. Time 2 response options were 0 = no; 1 = yes; 3 = don't know; and 4 = refused to

answer. Responses for Time 1 and 2 were recoded as 0 = no and 1 = yes, with 0 being coded for the no, don't know, and refused to answer responses. Then, responses were summed for a total peer and sibling victimization score for Time 1 and 2, where higher scores indicate more peer and sibling victimization.

Source of social support. Three sources of social support were measured only at Time 2 of the THV study, which included support from parents/family, support from friends/peers, and support from other non-parental adults. *Family support* was measured using 4 items (e.g., “My family really tries to help me”; $\alpha = .81$). *Friend support* was also measured using 4 items (e.g., “I can count on my friends when things go wrong”; $\alpha = .83$). *Support from other adults* was measured using 3 items (e.g., “I have adults other than my parents that I can talk to”; $\alpha = .80$). Responses to all three sources of support items were based on a 3-point Likert scale (1 = never; 2 = sometimes; and 3 = often). Participants also had the option to report that they did not know the answer or refused to answer the question. Responses for each source of support were recoded as 1 = 0; 2 = 1; and 3 = 2. Responses for each source of support were then summed for a total family, total friend, and total other adult social support score, with higher scores indicating high levels of each source of social support. Also, an overall total social support score was calculated by summing the total family, total friend, and total other adult support scores. There were only three total missing responses for social support.

Delinquency. Delinquency was measured at Time 1 and Time 2 of the THV study. At Time 1, delinquency was measured using 19 items and at Time 2 using 15 items. The 4 additional items at Time 1 were omitted so that the two delinquency scores reflected only the items used at both data collection time periods. The participants were asked a series of questions regarding whether they had participated in various delinquent behaviors in the past year (e.g., “In the last

year did you write things or spray paint on walls or sidewalks or cars, where you were not supposed to do that?”). In the original dataset, all responses were coded as 0 = no; 1 = yes; 3 = don't know; and 4 = refused to answer. Responses were then recoded as 0 = no and 1 = yes, with 0 coded for the no, don't know, and refused to answer responses and summed for a total delinquency score for Time 1 and 2, with higher scores indicating more engagement in delinquent behaviors. Finally, to reduce the influence of outliers, the total delinquency scores for both Time 1 and 2 were recoded so that scores of 5 or more were coded as 5. All other scores remained as is (i.e., 0 = 0; 1 = 1; 2 = 2; 3 = 3; 4 = 4; 5 or more = 5).

Polyvictimization. Polyvictimization will be included as a control variable and was measured using the JVQ (Finkelhor et al., 2011), which contains 5 sub-scales. At both Time 1 and Time 2, the following scales were used: *Conventional crime* includes 9 items asking respondents if the following situations had happened to them in the past year (e.g., “In the past year, did anyone break or ruin any of your things on purpose?”). *Child maltreatment* includes 4 items (e.g., “Not including spanking on your bottom, in the past year did a grown-up in your life hit, beat, kick, or physically hurt you in any way?”). *Sexual assault* includes 6 items (e.g., “In the past year, did a grown-up you know touch your private parts when they shouldn't have or make you touch their private parts? Or did a grown-up you know force you to have sex?”). *Witnessing and indirect victimization* includes 8 items (e.g., “In the past year, in real life, did you SEE anyone get attacked or hit on purpose WITH a stick, rock, gun, knife, or other thing that would hurt? Somewhere like: at home, at school, at a store, in a car, on the street, or anywhere else?”). *School violence and threat* includes 2 items (e.g., “In the **past year**, did you go to a school where someone damaged the school or started a fire in the school on purpose? Or did anyone break or ruin other school property like buses, windows, or sports equipment?”). For Time 1, responses

in the original dataset were coded as 1 = yes, 2 = no, 3 = not sure, and 4 = refused to answer. For Time 2, responses in the original dataset were coded as 0 = no, 1 = yes, 3 = don't know, and 4 = refused to answer. Responses were recoded as 0 = no and 1 = yes, with 0 coded for the no, don't know, or refused to answer responses, before summing across all items for a total polyvictimization score for Time 1 and 2. Higher scores indicate more polyvictimization.

Life adversity. Life adversity will also be included as a control variable and was measured in Time 2 using 15 items, asking participants if the following situations had happened to them in the past year (e.g., "In the past year has someone you were really close to had a VERY BAD accident where they had to spend a long time in the hospital? This would be someone important to you, like a parent, brother or sister, or best friend."). In the original dataset, responses were coded as 0 = no, 1 = yes, 3 = don't know, and 4 = refused to answer. Responses were then recoded as 0 = no and 1 = yes, with 0 coded for the no, don't know, and refused to answer responses. A total life adversity score was calculated for Time 2, where higher scores indicate more life adversity.

Demographics. Demographic variables include: age, gender, ethnicity, race, family structure, and socioeconomic status. Age was coded as a continuous variable and participants who were 18-years-old or older were grouped and coded as 18. Gender was coded as 1 = male and 2 = female. Participants were also asked whether they considered themselves to be Hispanic or Latino and gave either a yes (coded as 1) or no (coded as 2) answer; refused to answer (coded as 3); or were unsure (coded as 4). Responses were then recoded as 1 = Hispanic or Latino and 0 = Non-Hispanic or Latino. Participants were also asked which race they considered themselves to be, which included: White (coded as 1); black or African American (coded as 2); Asian (coded as 3); American Indian or Alaska Native (coded as 4); Native Hawaiian or other Pacific Islander

(coded as 5); a mixed race (coded as 6); a more specific Hispanic race (coded as 7); or were unsure (coded as 8); or refused to answer (coded as 9). Responses were then recoded as 1 = White and 2 = nonwhite (encapsulating all of the aforementioned races other than White). Family structure is coded as 1 = lives with other adult, 2 = single parent, 3 = parent and step-parent, and 4 = two parents (biological or adopted). Lastly, socioeconomic status is coded as 1 = low SES, 2 = medium SES, and 3 = high SES.

Procedure

Approval from the University of New Hampshire's Institutional Review Board for Human Subjects was obtained for this study in May 2021 (see Appendix A for IRB approval letter). Secondary de-identified data was used from the Technology Harassment Victimization Study (THV), which is a subset of participants from the second wave of the National Survey on Children's Exposure to Violence (NatSCEV II). The eligible sample consisted of 2,197 youth from the NatSCEV II study, with 36% completing the THV study (for more information regarding the procedure for the NatSCEV II survey, see Finkelhor, Vanderminden, Turner, Hamby, & Shattuck, 2014). For the THV study, baseline data were collected in 2011-2012 with follow-up data collected in December 2013- March 2014. The THV study was conducted via telephone using computer assisted telephone interviewing (CATI), and asked participants questions about their peer victimization experiences, while also asking about their use of technology, sources of social support, mental health, delinquency, alcohol use, and more. The average telephone interview took approximately 58 minutes to complete and participants were given a \$25 check once they completed the interview. For participants who were 17-years-old or younger, consent from a caregiver was obtained for both waves of data collection, as was assent from the participants themselves. In regards to participants who were 18-years-old or older at

Time 2 of data collection, these participants gave their own consent. During the interview, if a respondent disclosed that they were experiencing a situation that included a serious threat or ongoing victimization, that respondent was then contacted by a clinical member of the research team who stayed in contact with the participant until the threat was addressed properly by local officials. Both the NatSCEV II and THV surveys were approved by the Institutional Review Board of the University of New Hampshire. For more information on the procedures for the THV study, see Turner, Mitchell, Jones, and Shattuck, 2015. For the purposes of this study, I am only interested in using the peer and sibling victimization, social support, delinquency, adversity, polyvictimization, and demographic variables.

Plan of Analyses

All analyses were performed using IBM SPSS Statistics 27. First, descriptive statistics (i.e., means and standard deviations) and bivariate correlations were calculated (see Table 1 in Appendix B). Next, because the outcome variables of interest (i.e., delinquency at Time 2 and peer and sibling victimization at Time 2) were count variables, two Poisson regression analyses were conducted. It should be noted that for the two full Poisson models (i.e., delinquency at Time 2 and peer and sibling victimization at Time 2, which included all three sources of social support), violated the Poisson equidispersion assumption that the variances equal the means. For delinquency at Time 2, the goodness of fit value/df = 1.27, showing an over dispersed model. The Kolmogorov-Smirnov test was significant, and therefore, two negative binomial with log link regressions (i.e., the default and the customized estimation) were also performed to adjust the over dispersion. The default and customized models for delinquency both resulted in a value/df = 0.73, which did not improve the fit for the model. In addition, the Akaike's information criterion (AIC of 1927) and the Bayesian information criterion (BIC of 2010) for the

full Poisson regression model was smaller than those for the negative binomial default (AIC of 1996 and BIC of 2080) and custom models (AIC of 1996 and BIC of 2080). Therefore, the original Poisson regression analyses were conducted and reported here for delinquency at Time 2. In regards to peer and sibling victimization at Time 2, the goodness of fit/df = 0.83, showing an under dispersed model. The Kolmogorov-Smirnov test was also significant, and again, two negative binomial with log link regressions were performed to adjust for the under dispersion. The default and customized models for peer and sibling victimization both resulted in a value/df = 0.58, which did not improve the fit for the model. The Akaike's information criterion (AIC of 1309) and the Bayesian information criterion (BIC of 1393) were smaller than those for the negative binomial default (AIC of 1399 and BIC of 1482) and custom models (AIC of 1399 and BIC of 1482). Therefore, the original Poisson regression analyses were conducted and reported here for peer and sibling victimization at Time 2. For all Poisson analyses, ethnicity; race; family structure; sex; socioeconomic status; adversity at Time 2; and polyvictimization at Time 1 and Time 2 were controlled. The first Poisson regression assessed whether peer and sibling victimization at Time 1 and Time 2 and delinquency at Time 1 predicted delinquency at Time 2. The next Poisson regression model tested added social support from each of the three sources to examine possible mediations for the relation between both peer and sibling victimization and delinquency at Time 1 and delinquency at Time 2. The second Poisson regression assessed whether delinquency at Time 1 and peer and sibling victimization at Time 1 predicted peer and sibling victimization at Time 2. The next Poisson regression model tested added social support from each of the three sources to examine possible mediations for the relation between both delinquency and peer and sibling victimization at Time 1 and peer and sibling victimization at Time 2.

In order to longitudinally examine whether various sources of social support and total social support mediated the relationship between peer and sibling victimization and delinquency Time 1 and peer and sibling victimization and delinquency Time 2, three crossed-lagged design structural equation models (SEMs) were also performed using IBM SPSS AMOS. For all SEM models, sex at Time 1 and polyvictimization at Time 1 were included as covariates at Time 1. It should be noted that including additional covariates (e.g., polyvictimization at Time 2, adversity at Time 2, or additional Time 2 demographic variables) resulted in worse fitting models. Therefore, no additional covariates were included for any of the SEM models.

The first crossed-lagged SEM model tested whether peer and sibling victimization at Time 1 and delinquency at Time 1 predicted peer and sibling victimization at Time 2 and delinquency at Time 2, and whether peer and sibling victimization at Time 2 concurrently predicted delinquency at Time 2. This first cross-lagged SEM model was run without the inclusion of the three sources of social support or total social support (see Figure 1 in Appendix D for blank model).

In the second crossed-lagged SEM model, the three sources of social support (i.e., family, friends, and other adults) were added to examine whether each partially or fully mediated the association between peer and sibling victimization and delinquency at Time 1 and peer and sibling victimization and delinquency at Time 2 (see Figure 2 in Appendix D for blank model).

To better understand the role of social support, a final cross-lagged SEM model examined whether including total social support (i.e., family, friend, and other adult combined) rather than separate sources of social support, resulted in a better model fit, and whether total social support partially or fully mediated the association between peer and sibling victimization and

delinquency at Time 1 and peer and sibling victimization and delinquency at Time 2 (see Figure 3 in Appendix D for blank model).

Results

Poisson Regression Predicting Delinquency at Time 2

Bivariate correlations with means and standard deviations were calculated first (see Table 1 in Appendix B). The first Poisson regression model was conducted to first examine whether peer and sibling victimization and delinquency at Time 1 predicted delinquency at Time 2 without including the three sources of social support, while controlling for demographic information such as polyvictimization and non-victimization adversity (see Table 2 in Appendix C). Overall, this was a statistically significant model for predicting delinquency at Time 2 ($\chi^2(15) = 648.57; p < .001; N = 763$ with 28 missing cases), suggesting the model is a significant improvement in fit from the null model. Of the demographic information, only sex and age significantly predicted delinquency at Time 2. Males ($\text{Exp}[B] = 1.20; SE = .07; p < .01; 95\% \text{ CI } [1.047, 1.375]$) and older adolescents ($\text{Exp}[B] = 1.26; SE = .02; p < .001; 95\% \text{ CI } [1.214, 1.313]$) were more likely to engage in delinquent behavior in later adolescence. In addition, the incidence rate ratio suggested that males were 20% more at risk for engaging in delinquent behavior than females. Also, for every 1-unit increase in age of adolescents, there is a 26% increase in the likelihood of higher delinquency counts. Of the additional control variables, polyvictimization at Time 2 ($\text{Exp}[B] = 1.06; SE = .01; p < .001; 95\% \text{ CI } [1.035, 1.092]$) and non-victimization adversity at Time 2 ($\text{Exp}[B] = 1.15; SE = .02; p < .001; 95\% \text{ CI } [1.096, 1.196]$) were both significant predictors of delinquency at Time 2. For every 1-unit increase in polyvictimization at Time 2, the incidence rate for delinquency at Time 2 increased by 6%. In

addition, for every 1-unit increase in non-victimization adversity, the incidence rate in delinquency at Time 2 increased by 15%.

In terms of the predictors of interest for this first Poisson regression model, peer and sibling victimization at Time 1 ($\text{Exp}[B] = 1.08$; $SE = .03$; $p < .001$; 95% CI [1.033, 1.139]) and delinquency at Time 1 ($\text{Exp}[B] = 1.20$; $SE = .02$; $p < .001$; 95% CI [1.140, 1.253]) significantly predicted delinquency at Time 2. However, peer and sibling victimization at Time 2 did not concurrently predict delinquency at Time 2 ($p > .05$). Therefore, for every 1-unit increase in peer and sibling victimization at Time 1, the incidence rate in delinquency at Time 2 increased by 8%. Further, for every 1-unit increase in delinquent behavior at Time 1, the incidence rate in delinquency at Time 2 increased by 20%.

The next Poisson regression was conducted to examine whether the three sources of social support mediated the influence of peer and sibling victimization at Time 1 and Time 2 and delinquency at Time 1 on delinquency Time 2 (see Table 2 in Appendix C). Overall, this model was also a statistically significant model for predicting delinquency at Time 2 ($\chi^2(18) = 664.28$; $p < .001$; $N = 763$ with 28 missing cases). Of the demographic information, only sex and age significantly predicted delinquency at Time 2. Males ($\text{Exp}[B] = 1.22$; $SE = .02$; $p < .01$; 95% CI [1.062, 1.400]) and older adolescents ($\text{Exp}[B] = 1.27$; $SE = .02$; $p < .001$; 95% CI [1.216, 1.317]) were more likely to engage in delinquent behavior in later adolescence. Males were also 22% more at risk for engaging in delinquent behavior than females. In addition, for every 1-unit increase in age of adolescents, the incidence rate in delinquency at Time 2 increased by 27%. Of the control variables, polyvictimization at Time 2 ($\text{Exp}[B] = 1.07$; $SE = .01$; $p < .001$; 95% CI [1.039, 1.097]) and non-victimization adversity at Time 2 ($\text{Exp}[B] = 1.13$; $SE = .02$; $p < .001$; 95% CI [1.090, 1.189]) were both significant predictors of delinquency at Time 2. For every 1-

unit increase in polyvictimization at Time 2, the incidence rate in delinquency at Time 2 increased by 7%. In addition, for every 1-unit increase in non-victimization adversity, the incidence rate in delinquency at Time 2 increased by 13%.

When adding the three sources of social support, which were measured at Time 2, both social support from family ($\text{Exp}[B] = 0.95$; $SE = .02$; $p < .05$; 95% CI [.914, .994]) and other adult social support ($\text{Exp}[B] = 0.95$; $SE = .02$; $p < .05$; 95% CI [.908, .989]) predicted delinquency at Time 2. However, friend social support did not significantly predict delinquency at Time 2 ($p > .05$). In other words, for every 1-unit increase in family social support or social support from other adults, the incidence rate in delinquency at Time 2 decreased by 5%.

Once the three sources of social support were added to the model, peer and sibling victimization at Time 1 ($\text{Exp}[B] = 1.07$; $SE = .03$; $p < .01$; 95% CI [1.018, 1.125]) remained a significant predictor of delinquency at Time 2, albeit slightly less significant. In addition, delinquency at Time 1 ($\text{Exp}[B] = 1.20$; $SE = .02$; $p < .001$; 95% CI [1.142, 1.256]) also remained a significant predictor of delinquency at Time 2. As with the first model, peer and sibling victimization at Time 2 did not concurrently predict delinquency at Time 2. For every 1-unit increase in peer and sibling victimization at Time 1, the incidence rate in delinquency at Time 2 increased by 7%. Further, for every 1-unit increase in delinquent behavior at Time 1, the incidence rate in delinquency at Time 2 increased by 20%.

Poisson Regression Predicting Peer and Sibling Victimization at Time 2

The second Poisson regression model was conducted to examine whether peer and sibling victimization and delinquency at Time 1 predicted peer and sibling victimization at Time 2, without including the three sources of social support, and controlling for demographic information such as polyvictimization and non-victimization adversity (see Table 3 in Appendix

C). Overall, this was a statistically significant model for predicting peer and sibling victimization at Time 2 ($\chi^2(15) = 263.159; p < .001; N = 765$ with 26 missing cases). Of the demographic information, only sex and age significantly predicted peer and sibling victimization at Time 2. Males ($\text{Exp}[B] = 1.29; SE = .10; p = .011; 95\% \text{ CI } [1.061, 1.589]$) were more likely to experience peer and sibling victimization at Time 2 than females, whereas *younger* adolescents ($\text{Exp}[B] = .89; SE = .02; p < .001; 95\% \text{ CI } [.848, .934]$) were more likely to experience peer and sibling victimization. The incidence rate ratio suggested that males were 29% more at risk for experiencing peer and sibling victimization later in adolescence than females. In addition, for every 1-unit increase in age of adolescents, there is an 11% decrease in the likelihood of experiencing peer and sibling victimization at Time 2. Of the additional control variables, polyvictimization at Time 2 ($\text{Exp}[B] = 1.18; SE = .01; p < .001; 95\% \text{ CI } [1.149, 1.224]$) was the only significant predictor of peer and sibling victimization at Time 2. For every 1-unit increase in polyvictimization at Time 2, the incidence rate for experiencing peer and sibling victimization at Time 2 increased by 18%.

In terms of the predictors of interest for this first Poisson regression model, only peer and sibling victimization at Time 1 ($\text{Exp}[B] = 1.13; SE = .03; p = .001; 95\% \text{ CI } [1.054, 1.211]$) significantly predicted peer and sibling victimization at Time 2. In other words, for every 1-unit increase in peer and sibling victimization at Time 1, the incidence rate in experiencing peer and sibling victimization at Time 2 increased by 13%. Interestingly, delinquency at Time 1 ($\text{Exp}[B] = 1.04; SE = .03; p = .237; 95\% \text{ CI } [.970, 1.132]$) did not predict peer and sibling victimization at Time 2.

The next Poisson regression was conducted to examine whether the three sources of social support mediated the influence of peer and sibling victimization at Time 1 and

delinquency at Time 1 on peer and sibling victimization at Time 2 (see Table 3 in Appendix C). Overall, this model was also a statistically significant model for predicting peer and sibling victimization at Time 2 ($\chi^2(18) = 267.06; p < .001; N = 762$ with 29 missing cases). Of the demographic information, only sex and age significantly predicted peer and sibling victimization at Time 2. Males ($\text{Exp}[B] = 1.30; SE = .10; p = .013; 95\% \text{ CI } [1.057, 1.600]$) and younger adolescents ($\text{Exp}[B] = .889; SE = .02; p < .001; 95\% \text{ CI } [.846, .933]$) were more likely to experience peer and sibling victimization at Time 2. Males were 30% more at risk for experiencing peer and sibling victimization than females. In addition, for every 1-unit increase in age of adolescents, the incidence rate in peer and sibling victimization at Time 2 decreased by 12%. Of the control variables, only polyvictimization at Time 2 ($\text{Exp}[B] = 1.18; SE = .01; p < .001; 95\% \text{ CI } [1.147, 1.222]$) significantly predicted peer and sibling victimization at Time 2. In essence, for every 1-unit increase in polyvictimization at Time 2, the incidence rate in experiencing peer and sibling victimization at Time 2 increased by 18%.

When adding the three sources of social support, which were measured at Time 2, none of the support variables predicted peer and sibling victimization at Time 2 or were approaching significance (family social support, $p = .415$; friend social support, $p = .657$; other adult social support, $p = .446$).

Once the three sources of social support were added to the model, peer and sibling victimization at Time 1 ($\text{Exp}[B] = 1.13; SE = .03; p < .01; 95\% \text{ CI } [1.060, 1.224]$) remained a significant predictor of peer and sibling victimization at Time 2, but was even more significant in this model. Therefore, for every 1-unit increase in peer and sibling victimization at Time 1, the incidence rate in experiencing peer and sibling victimization at Time 2 increased by 13%. Also,

consistent with the first model, delinquency at Time 1 ($\text{Exp}[B] = 1.04$; $SE = .03$; $p = .267$; 95% CI [.967, 1.129]) still did not predict peer and sibling victimization at Time 2.

Structural Equation Model #1: Direct Associations between Peer and Sibling Victimization, Delinquency at Time 1 and Peer and Sibling Victimization, Delinquency at Time 2

The first cross-lagged structural equation model examined whether peer and sibling victimization at Time 1 and delinquency at Time 1 predicted peer and sibling victimization at Time 2 and delinquency at Time 2, and also, whether peer and sibling victimization at Time 2 concurrently predicted delinquency at Time 2. Sex and polyvictimization at Time 1 were both included as covariates in this model. The model presented in Figure 1 in Appendix E includes only significant paths, which are characterized by standardized beta weights. Overall, this model was a good fit (RMSEA = .089; IFI = .97; CFI = .97; NFI = .97) with $\chi^2(4) = 28.88, p < .001$). In terms of direct effects, almost all paths were significant. Peer and sibling victimization at Time 1 was positively associated with peer and sibling victimization at Time 2 ($\beta = .28, p < .001$), and peer and sibling victimization at Time 1 was also positively associated with delinquency at Time 2 ($\beta = .09, p < .01$). Peer and sibling victimization at Time 2 was also positively associated with delinquency at Time 2 ($\beta = .12, p < .001$). Lastly, delinquency at Time 1 was positively associated with delinquency at Time 2 ($\beta = .53, p < .001$); however, it should be noted that delinquency at Time 1 was not associated with peer and sibling victimization at Time 2 ($\beta = .06, p > .05$), which was the only path in this model that was not statistically significant. Regarding the covariances at Time 1, only three paths were significant: delinquency at Time 1 and peer and sibling victimization at Time 1 ($\beta = .36, p < .001$); polyvictimization at Time 1 and delinquency at Time 1 ($\beta = .53, p < .001$); and polyvictimization at Time 1 and peer and sibling victimization at Time 1 ($\beta = .60, p < .001$). Based on this model, it appears adolescents who experience more

peer and sibling victimization at Time 1 longitudinally experience peer and sibling victimization at Time 2 and engage in more delinquency at Time 2. In addition, those who engage in more delinquency at Time 1 longitudinally engage in more delinquency at Time 2. Also, those who experience more peer and sibling victimization at Time 2 concurrently engage in more delinquency at Time 2. Interestingly, delinquency at Time 1 did not longitudinally predict peer and sibling victimization at Time 2. Therefore, it appears that the association between peer and sibling victimization and delinquency is unidirectional.

Structural Equation Model #2: Mediating Role of 3 Sources of Social Support between Peer and Sibling Victimization, Delinquency at Time 1 and Peer and Sibling Victimization, Delinquency at Time 2

The second crossed-lagged structural equation model evaluated whether the three sources of social support (i.e., family, friends, and other adults) either partially or fully mediated the association between peer and sibling victimization and delinquency at Time 1 and peer and sibling victimization and delinquency at Time 2. Sex and polyvictimization at Time 1 were again included as covariates. The model presented in Figure 2 in Appendix E includes only significant paths, which are characterized by standardized beta weights. Although several of the paths were statistically consistent, the model did not yield a good overall fit ($\chi^2(13) = 210.39, p < .001$; RMSEA = .139; IFI = .85; CFI = .84; NFI = .84); therefore, *results should be interpreted with caution*. In terms of direct effects, 10 out of the 17 paths in this model were significant.

Direct effect of peer and sibling victimization at time 1 and time 2 outcomes. In terms of the direct effects of the first predictor of interest, peer and sibling victimization at Time 1 was positively associated with peer and sibling victimization at Time 2 ($\beta = .26, p < .001$) and delinquency at Time 2 ($\beta = .07, p < .05$), suggesting that adolescents who experienced more peer

and sibling victimization at Time 1 also experienced more peer and sibling victimization at Time 2 and engaged in more delinquency at Time 2. It should also be noted that peer and sibling victimization at Time 2 concurrently predicted delinquency at Time 2 ($\beta = .11, p < .001$).

Mediating role of 3 sources of social support for peer and sibling victimization at time 1 and at time 2 outcomes. In terms of the possible mediating role of social support, peer and sibling victimization at Time 1 was negatively associated with all 3 sources of social support: family social support ($\beta = -.17, p < .001$); friend social support ($\beta = -.10, p < .01$); and social support from other adults ($\beta = -.11, p < .01$). This would suggest that the more peer and sibling victimization experienced at Time 1, the less social support the adolescent reported they had from all 3 sources at Time 2. In terms of the paths from social support sources to peer and sibling victimization at Time 2, interestingly, only friend social support was associated with peer and sibling victimization at Time 2 ($\beta = -.08, p < .05$). Therefore, the more friend social support the adolescents reported, the less peer and sibling victimization they experienced at Time 2. However, because the direct path from peer and sibling victimization at Time 1 and peer and sibling victimization at Time 2 was reduced but remained significant, applying Baron and Kenny (1986) criteria, friend social support appears to only partially mediate the direct effect of peer and sibling victimization at Time 1 and peer and sibling victimization at Time 2 (see Table 4 in Appendix E for mediation table). No other sources of social support significantly predicted peer and sibling victimization at Time 2; however, family social support was approaching significance ($p = .06$).

For the outcome of delinquency at Time 2, family social support was the only source of support that was associated with delinquency at Time 2 ($\beta = -.09, p < .01$). Although the direct path from peer and sibling victimization at Time 1 to delinquency at Time 2 remained significant

once the family social support was added, the levels of significance decreased, suggesting that family social support partially mediated the association between peer and sibling victimization at Time 1 and delinquency at Time 2. Neither friend nor other adult social support significantly predicted delinquency at Time 2 (see Table 4 in Appendix E for mediation table).

Direct effect of delinquency at time 1 and time 2 outcomes. For the second predictor of interest, delinquency at Time 1 did not significantly predict peer and sibling victimization at Time 2, although it approached significance ($\beta = -.06, p = .08$). However, delinquency at Time 1 was positively associated with delinquency at Time 2 ($\beta = .52, p < .001$), with those who engaged in more delinquency at Time 1 also engaging in more delinquency at Time 2.

Mediating role of 3 sources of social support for delinquency at time 1 and time 2 outcomes. In terms of the possible mediating role of social support, delinquency at Time 1 was only associated with family social support ($\beta = -.14, p < .001$), suggesting that adolescents who engaged in more delinquency at Time 1 reported less familial social support at Time 2.

Delinquency at Time 1 did not significantly predict friend social support (however, this path approached significance; $\beta = .07, p = .08$), or social support from other adults. As reported above, family social support was the only source of social support that significantly predicted delinquency at Time 2 ($\beta = -.09, p < .01$). However, once again, the direct path from delinquency at Time 1 and delinquency at Time 2 was reduced but remained significant, suggesting that familial social support partially mediated the association between delinquency at Time 1 and Time 2 (see Table 4 in Appendix E for mediation table).

Structural Equation Model #3: Mediating Role of Overall Social Support between Peer and Sibling Victimization, Delinquency at Time 1 and Peer and Sibling Victimization, Delinquency at Time 2

The final cross-lagged structural equation model examined whether including total social support (i.e., family, friend, and other adult combined), rather than separate sources of social support, resulted in a better model fit and whether total social support partially or fully mediated the association between peer and sibling victimization and delinquency at Time 1 and peer and sibling victimization and delinquency at Time 2 (see Figure 3 in Appendix E). Consistent with the first two models, this model is characterized by standardized beta weights and has sex and polyvictimization at Time 1 included as covariates. Overall, this model was a good fit for the data (RMSEA = .073; IFI = .98; CFI = .98; NFI = .97) with a $\chi^2(5) = 26.04, p < .001$.

Direct effect of peer and sibling victimization at time 1 and time 2 outcomes. Peer and sibling victimization at Time 1 was associated with peer and sibling victimization at Time 2, in a positive direction ($\beta = .26, p < .001$), indicating that adolescents who had more peer and sibling victimization at Time 1 also had more peer and sibling victimization at Time 2. Also, peer and sibling victimization at Time 1 was longitudinally associated with delinquency at Time 2 ($\beta = .08, p < .05$), which suggests that the more peer and sibling victimization experienced at Time 1, the more delinquent behaviors they engaged in at Time 2.

Mediating role of total social support for peer and sibling victimization at time 1 and time 2 outcomes. Peer and sibling victimization at Time 1 was negatively associated with total social support ($\beta = -.10, p < .05$), suggesting that adolescents who experienced less peer and sibling victimization at Time 1 reported higher levels of overall social support at Time 2. In addition, total social support significantly predicted peer and sibling victimization at Time 2 ($\beta = -.10, p < .01$) and delinquency at Time 2 ($\beta = -.09, p < .01$), indicating that adolescents who reported more overall social support were less likely to experience peer and sibling victimization at Time 2 and engaged in less delinquency at Time 2. Only the direct association between peer

and sibling victimization at Time 1 to delinquency at Time 2 was reduced, albeit remained significant, suggesting that total social support partially mediated the effect of peer and sibling victimization at Time 1 on delinquency at Time 2. The direct path between peer and sibling victimization at Time 1 and 2 remained significant and was not reduced when adding total social support (see Table 4 in Appendix E for mediation table).

Direct effect of delinquency at time 1 and time 2 outcomes. Once again, delinquency at Time 1 did not significantly predict peer and sibling victimization at Time 2. However, delinquency at Time 1 was longitudinally associated with delinquency at Time 2 ($\beta = .53, p < .001$), once again suggesting that the delinquent behaviors engaged in at Time 1, the more delinquent behaviors engaged in at Time 2.

Mediating role of total social support for delinquency at time 1 and time 2 outcomes. Although the path from total social support to delinquency at Time 2 was significant ($\beta = -.09, p < .01$), the path from delinquency at Time 1 to total social support was not statistically significant. Therefore, total social support did not mediate the effect of delinquency at Time 1 on delinquency at Time 2 (see Table 4 in Appendix E for mediation table).

Discussion

Longitudinally Predicting Peer and Sibling Victimization

Overall, it appears that adolescents who experience peer and sibling victimization earlier in adolescence tend to continue to experience victimization later in adolescence. However, the results also suggest that the association between victimization and delinquency is unidirectional. Adolescents who experienced peer and sibling victimization earlier in adolescence were more likely to engage in delinquency later on, but those who engaged in delinquency early on were not more likely to experience subsequent peer and sibling victimization. Therefore, this study was

able to shed light on the direction of the association between delinquency and peer and sibling victimization.

Role of social support. In terms of the role that social support plays in longitudinally predicting peer and sibling victimization, the results both challenge and support existing literature. Of the three sources of social support examined here, only social support from friends predicted peer and sibling victimization, and also, partially mediated the association between early peer and sibling victimization and later victimization. The fact that only friend social support predicted victimization was surprising considering that many studies suggest the importance of social support in children's and adolescents' lives (Zwecker et al., 2018; Chu et al., 2010; Cooley et al., 2015) and that the support can come from various sources (i.e., family, friends, teachers, coaches, relatives). In fact, Chu et al. (2010) found that teachers and parents were the most influential sources of support for children and adolescents; however, they also found that social support from parents was associated with increased conflict in the parent-child relationship during this period of life. Most peer victimizations occur while other similar-aged peers are around (Craig et al., 2000, as cited in Cooley et al., 2015) and in their study, Fite, Williford, Cooley, and DePaolis (2013) found that playgrounds, cafeterias, and school buses were the most common locations for victimizations to occur. Therefore, it is possible that friends have more opportunity (than parents and/or other adults) to provide support to victimized adolescents. Future research should examine whether the level of social support by source differs based on support sources' knowledge of the victimization.

In addition to examining the possible mediational role of individual sources of social support, I also examined whether total social support, regardless of the source, predicted victimization. Although total social support did not mediate the association between earlier and

later victimization, I found that the more total social support (from family, friends, and other adults combined) that adolescents had, the less likely they were to experience peer and sibling victimization. This is consistent with previous studies that suggest the importance of social support for children and adolescents (Zwecker et al., 2018; Chu et al., 2010; Cooley et al., 2015). Some studies have also found that the more peer *or* sibling victimization that adolescents experienced, the less social support they felt that they had (Tucker et al., 2020; Rasalingham et al., 2017). This is also consistent with the findings in this study. Here, peer and sibling victimization earlier in adolescence was negatively associated with perceived social support from each of the three sources, and total social support later in adolescence. Those who reported more peer and sibling victimization early in adolescence also reported lower levels of social support from family, friends, and other adults, as well as lower levels of overall social support later in adolescence. Regardless, the direct effect of earlier victimization on later victimization was not mediated by family, other adult, or total social support and was only partially mediated by friend support. Therefore, it does not appear that it is the lack of social support that is responsible for the continued victimization of some adolescents. Rather, victimization appears to be a stable characteristic in adolescence, regardless of support.

In all, it appears that friend social support and total social support (from family, friends, and other adults combined) partially buffered the effects of later peer and sibling victimization, providing evidence that receiving social support from your greater social network can help lessen the effects of victimization. In essence, having strong social bonds with others, whether they are family, friends, or other non-familial adults, can have positive effects for children and adolescents who are victimized by their peers.

Longitudinally Predicting Delinquency

In terms of predicting later delinquency, the analyses suggest that earlier delinquency and earlier peer and sibling victimization predicted later delinquency. As stated above, this longitudinal study sheds light on the direction of the association between victimization and delinquency. It appears that the association is unidirectional, with earlier victimization predicting later delinquency, but earlier delinquency not predicting later victimization. In addition, it appears that adolescents who engage in delinquency earlier in adolescence will most likely continue to engage in delinquency in the future, which is consistent with Moffitt's (1993) developmental taxonomy of antisocial behavior (i.e., life-course persistent vs. adolescent-limited antisocial behavior).

Role of social support. Several interesting findings emerged regarding the role of social support in predicting later delinquency. In the regression analyses, once the three social support variables were added, two out of the three sources of support predicted later delinquency. Social support from family and other adults (but not friend social support) predicted later delinquency, suggesting that the more family and/or other adult social support an adolescent received, the fewer delinquent acts they engaged in. This is consistent with the literature, since several studies found that social support from parents tended to be associated with lower levels of externalizing behavioral issues (Kurtz & Zavala, 2017; Bax & Hlasny, 2019; Cuevas et al., 2021), especially if parental support was combined with parental control or knowledge (Micalizzi et al., 2019). Support from other adults (e.g., teachers) is somewhat supported in the literature, with one study finding that high levels of teacher social support resulted in fewer *conduct* problems (Fernandez et al., 2020). However, another study found that teacher social support did not predict *externalizing* behaviors (Cotter et al., 2016). Future research is still needed to establish the influence of social support from other adults. Family social support also predicted later

delinquency in the second structural equation model and even partially mediated two different relationships. Family social support partially mediated the relationship between earlier peer and sibling victimization and later delinquency, and partially mediated the relationship between earlier and later delinquency. This suggests that receiving social support from family can help lessen the effects of peer and sibling victimization and earlier delinquency on future delinquent behaviors.

The last structural equation model, which examined total social support, was a better overall fit for the data, suggesting that the overall level of social support was more important than support from specific sources. Further, total social support partially mediated the relationship between earlier peer and sibling victimization and later delinquency. Therefore, receiving social support from one's greater social network lessened the effects of peer and sibling victimization on future delinquency. This is consistent with existing literature, since some studies found support for the mediating role of multiple sources of social support on the association between peer or sibling victimization and externalizing behaviors/delinquency (Cuevas et al., 2021; Tucker et al., 2020). A study by Lardier et al. (2018) also found that overall social support contributed to less substance use through community participation and school importance, thus exemplifying the positive effects that social support from one's greater social network can have on children and adolescents.

The results regarding delinquency also provide support for social bond or social control theory (Smångs, 2010). The results show that receiving social support, either from a specific source or several sources, can positively impact children and adolescents' later peer and sibling victimization experiences and later delinquency. However, because family social support was the source of support that predicted victimization and delinquency most consistently, it does

seem that social support from family/parents may be the most influential, which is consistent with Attar-Schwartz et al. (2019) and Tucker et al.'s studies (2020), who found parental social support to have more of an impact than peer social support. Unfortunately, the role of social support from other adults is not as well-documented. In sum, this study provides support for social bond/control theories, also providing evidence for Tatum's (2001) notion that social control theory emphasizes the control that family and other supportive relationships can have on individuals. Results also provide support for Hirschi's social bond theory, as noted by Smångs (2010), who posited that attachment to others (such as parents or peers) can influence engagement in delinquent behavior.

Limitations

Although this study had many strengths, there are a few limitations. First, peer and sibling victimization was measured collectively, which could influence the results. In their study, Yabko, Hokoda, and Ulloa (2008) measured victimization by peers and siblings separately and cite several studies which found that victimization by siblings can contribute to victimization from peers as well as violence within the family, demonstrating that victimization from peers and siblings may be related but distinctive. Future research should parse out these two types of victimization. Second, many of the control variables were only measured in the second data collection time points. In addition, and more germane to this study, social support was also only measured at the second data collection time point. It may have been helpful to examine the possible mediation role of social support at different time periods. Third, missing responses (either because the respondents indicated that they did not know or because they refused to answer) were recoded as "no" responses. It is possible that respondents may not have provided responses because of the sensitive nature of the questions (e.g., questions regarding victimization

or illegal behavior). Also, as mentioned above, the second structural equation model did not yield a good overall fit for the data, and future research may want to test better fitting models so that the interpretation of the results could be more reliable.

Conclusion

Overall, this study displayed several important findings. It is believed to be one of the first longitudinal studies to examine the possible mediational role of various sources of social support between earlier peer and sibling victimization and later delinquency as a specific type of externalizing behavior. In addition, because this was a longitudinal study, the directionality of the association between peer and sibling victimization and delinquency is now better understood. This is believed to be one of the first studies to suggest that the association between peer and sibling victimization and later delinquency is unidirectional. Earlier victimization predicted later delinquency; however, earlier delinquency did not predict later peer and sibling victimization. Also, although no results suggested that social support fully mediated the associations between the peer and sibling victimization and delinquency, several associations were partially mediated, providing evidence that social support can at least partially buffer the effects of earlier victimization. These results both challenged and supported existing literature, and also provided general support for social bond and social control theories. Interestingly, by including overall/total social support, regardless of the source, it resulted in a model that was a better fit for the data. Therefore, it appears that having social support within your greater social network can provide some protection regarding peer and sibling victimization and delinquency.

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APPENDICES

Appendix A: IRB Approval Letter

University of New Hampshire

Research Integrity Services, Service Building
51 College Road, Durham, NH 03824-3585
Fax: 603-862-3564

03-May-2021

Chantlos, Katie

Justice Studies, Huddleston Hall

73 Main Street Durham, NH 03824

IRB #: 8520

Study: The Mediating Effects of Three Sources of Social Support on the Association between Peer Victimization Timing and Juvenile Delinquency

Approval Date: 03-May-2021

The Institutional Review Board for the Protection of Human Subjects in Research (IRB) has reviewed and approved the protocol for your study as Exempt as described in Title 45, Code of Federal Regulations (CFR), Part 46, Subsection 104(d). Approval is granted to conduct your study as described in your protocol.

Researchers who conduct studies involving human subjects have responsibilities as outlined in the attached document, Responsibilities of Directors of Research Studies Involving Human Subjects. (This document is also available at <http://unh.edu/research/irb-application-resources>.) Please read this document carefully before commencing your work involving human subjects.

Note: IRB approval is separate from UNH Purchasing approval of any proposed methods of paying study participants. Before making any payments to study participants, researchers should consult with their BSC or UNH Purchasing to ensure they are complying with institutional requirements. If such institutional requirements are not consistent with the confidentiality or anonymity assurances in the IRB-approved protocol and consent documents, the researcher may need to request a modification from the IRB.

Upon completion of your study, please complete the enclosed Exempt Study Final Report form and return it to this office along with a report of your findings.

If you have questions or concerns about your study or this approval, please feel free to contact Melissa McGee at 603-862-2005 or melissa.mcgee@unh.edu. Please refer to the IRB # above in all correspondence related to this study. The IRB wishes you success with your research.

For the IRB,

A handwritten signature in blue ink that reads "Julie F. Simpson". The signature is written in a cursive style with a large, looped initial 'J'.

Julie F. Simpson Director

Appendix B: Correlation Table

Table 1

Means, standard deviations, and Pearson correlations for continuous variables

	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Ethnicity	0.08	0.27																
2. Race	1.18	0.39	0.04															
3. Age	15.20	2.47	-0.05	-0.03														
4. SES	2.07	0.61	0.01	-0.17	0.05													
5. Fam struct	3.46	0.92	0.04	-0.24	0.03	0.37												
6. Gender	1.50	0.50	-0.03	0.05	0.06	0.00	-0.05											
7. PolyT1	3.97	3.83	0.02	0.08	0.28	-0.12	-0.17	-0.08										
8. PolyT2	2.17	2.72	0.05	0.09	0.05	-0.12	-0.18	-0.10	0.44									
9. AdversityT2	1.41	1.57	0.03	0.06	-0.02	-0.19	-0.11	0.03	0.27	0.45								
10. PSVT1	2.39	1.76	0.07	-0.09	0.16	0.04	0.05	-0.06	0.60	0.30	0.19							
11. PSVT2	0.54	0.80	0.06	-0.02	-0.15	0.00	0.02	-0.14	0.19	0.53	0.26	0.25						
12. FamilySS	7.06	1.48	-0.03	-0.02	-0.12	0.06	0.07	-0.08	-0.27	-0.23	-0.18	-0.21	-0.12					
13. FriendSS	6.91	1.64	0.00	-0.02	0.04	0.08	0.06	0.09	-0.08	-0.11	-0.08	-0.07	-0.11	0.22				
14. OAdultSS	4.71	1.62	0.02	-0.00	0.00	-0.04	0.00	0.03	-0.06	-0.00	-0.01	-0.09	-0.05	0.23	0.32			
15. TotalSS	18.69	3.38	0.00	-0.02	-0.03	0.04	0.06	0.02	-0.19	-0.16	-0.12	-0.18	-0.13	0.65	0.73	0.73		
16. DelTotT1	0.77	1.32	-0.00	0.01	0.39	-0.03	-0.10	-0.03	0.52	0.31	0.18	0.35	0.03	-0.19	0.03	0.00	-0.07	
17. DelTotT2	1.18	1.54	-0.02	0.02	0.40	-0.03	-0.07	-0.08	0.41	0.43	0.32	0.31	0.16	-0.23	-0.03	-0.07	-0.15	0.57

All bolded correlations are significant. All other bolded correlations ($p < .01$).

PolyT1-Ethnicity; PolyT1-Race; PolyT1-Gender; PSVT1-Race; PSVT1-Gender; FamilySS-Gender; FriendSS-SES; FriendSS-Fam struct; FriendSS-PolyT1; FriendSS-Adversity;

FriendSS-PSVT1 ($p < .05$)

Appendix C: Poisson Regression Tables

Table 2

Poisson Regression Results Predicting Delinquency Time 2

Variable	Model 1					Model 2				
	B	SE	p	Exp(B)	95% CI	B	SE	p	Exp(B)	95% CI
Ethnicity	.10	.14	.438	1.110	[.853, 1.445]	.11	.14	.423	1.114	[.856, 1.450]
Race	-.06	.09	.474	.938	[.788, 1.117]	-.05	.09	.559	.949	[.797, 1.131]
Fam Str1	.12	.19	.518	1.128	[.783, 1.626]	.09	.19	.623	1.096	[.761, 1.580]
Fam Str2	.06	.10	.520	1.063	[.883, 1.280]	.03	.10	.731	1.033	[.857, 1.246]
Fam Str3	-.21	.15	.154	.813	[.612, 1.080]	-.18	.15	.213	.835	[.629, 1.109]
Sex	.18	.07	.009	1.200	[1.047, 1.375]	.20	.07	.005	1.219	[1.062, 1.400]
SES1	-.09	.12	.452	.911	[.714, 1.162]	-.08	.12	.538	.926	[.726, 1.182]
SES2	.03	.09	.691	1.035	[.875, 1.224]	.03	.09	.708	1.033	[.873, 1.222]
Age	.23	.02	.000	1.262	[1.214, 1.313]	.24	.02	.000	1.266	[1.216, 1.317]
PolyvT1	-.02	.01	.181	.985	[.964, 1.007]	-.02	.01	.110	.982	[.961, 1.004]
PolyvT2	.06	.01	.000	1.063	[1.035, 1.092]	.07	.01	.000	1.068	[1.039, 1.097]
AdvT2	.14	.02	.000	1.145	[1.096, 1.196]	.13	.02	.000	1.139	[1.090, 1.189]
FamSS						-.05	.02	.025	.953	[.914, .994]
FrSS						-.01	.02	.778	.994	[.952, 1.038]
OASS						-.05	.02	.013	.947	[.908, .989]
PS VicT1	.08	.03	.001	1.084	[1.033, 1.139]	.07	.03	.007	1.070	[1.018, 1.125]
PS VicT2	.08	.05	.082	1.082	[.990, 1.183]	.08	.05	.096	1.079	[.987, 1.180]
DelT1	.18	.02	.000	1.195	[1.140, 1.253]	.18	.02	.000	1.197	[1.142, 1.256]

Note: Bolded p values are significant. B = beta; SE = standard error; Exp(B) = incident rate; CI = confidence interval; All demographic variables, except sex, were measured at Time 2; Fam Str = Family structure with 1 = lives with other adult, 2 = lives with single parent, 3 = lives with parent and stepparent, 4 = lives with 2 biological/adopted parents (reference group); SES 1 = low, 2 = medium, 3 = high (reference group); PolyvT1 = Polyvictimization Time 1; PolyvT2 = Polyvictimization Time 2; AdvT2 = Adversity Time 2; PS Vic T1 = Peer/sibling victimization Time 1; PS VicT2 = Peer/sibling victimization Time 2; FamSS = Family Social Support T2; FrSS = Friend Social Support Time 2t; OASS = Other Adult Social Support Time 2

Table 3
Poisson Regression Results Predicting Peer and Sibling Victimization Time 2

Variable	Model 1					Model 2				
	B	SE	p	Exp(B)	95% CI	B	SE	p	Exp(B)	95% CI
Ethnicity	.00	.16	.989	1.002	[.724, 1.387]	.00	.16	.977	1.005	[.726, 1.391]
Race	.06	.13	.633	1.068	[.816, 1.396]	.06	.13	.641	1.066	[.815, 1.396]
Fam Str1	-.14	.26	.583	.866	[.518, 1.448]	-.12	.26	.645	.886	[.530, 1.482]
Fam Str2	-.27	.14	.064	.760	[.568, 1.016]	-.25	.14	.089	.775	[.578, 1.040]
Fam Str3	-.20	.19	.310	.817	[.553, 1.208]	-.18	.19	.355	.832	[.563, 1.229]
Sex	.26	.10	.011	1.299	[1.061, 1.589]	.26	.10	.013	1.300	[1.057, 1.600]
SES1	-.24	.18	.184	.780	[.541, 1.125]	-.25	.18	.180	.778	[.540, 1.123]
SES2	-.03	.12	.758	.962	[.754, 1.228]	-.05	.12	.651	.945	[.738, 1.209]
Age	-.11	.02	.000	.890	[.848, .934]	-.11	.02	.000	.889	[.846, .933]
PolyvT1	.00	.01	.940	1.001	[.966, 1.038]	-.00	.01	.800	.995	[.959, 1.032]
PolyvT2	.17	.01	.000	1.186	[1.149, 1.224]	.16	.01	.000	1.184	[1.147, 1.222]
AdvT2	.03	.03	.248	1.037	[.975, 1.104]	.03	.03	.243	1.038	[.975, 1.104]
FamSS						-.02	.03	.415	.973	[.911, 1.039]
FrSS						-.01	.03	.657	.986	[.928, 1.048]
OASS						-.02	.03	.446	.975	[.915, 1.040]
PS VicT1	.12	.03	.001	1.130	[1.054, 1.211]	.13	.03	.000	1.139	[1.060, 1.224]
DelT1	.04	.03	.237	1.048	[.970, 1.132]	.04	.03	.267	1.045	[.967, 1.129]

Note: Bolded p values are significant. B = beta; SE = standard error; Exp(B) = incident rate; CI = confidence interval; All demographic variables, except sex, were measured at Time 2; Fam Str = Family structure with 1 = lives with other adult, 2 = lives with single parent, 3 = lives with parent and stepparent, 4 = lives with 2 biological/adopted parents (reference group); SES 1 = low, 2 = medium, 3 = high (reference group); PolyvT1 = Polyvictimization Time 1; PolyvT2 = Polyvictimization Time 2; AdvT2 = Adversity Time 2; PS Vic T1 = Peer/sibling victimization Time 1; PS VicT2 = Peer/sibling victimization Time 2; FamSS = Family Social Support T2; FrSS = Friend Social Support Time 2; OASS = Other Adult Social Support Time 2

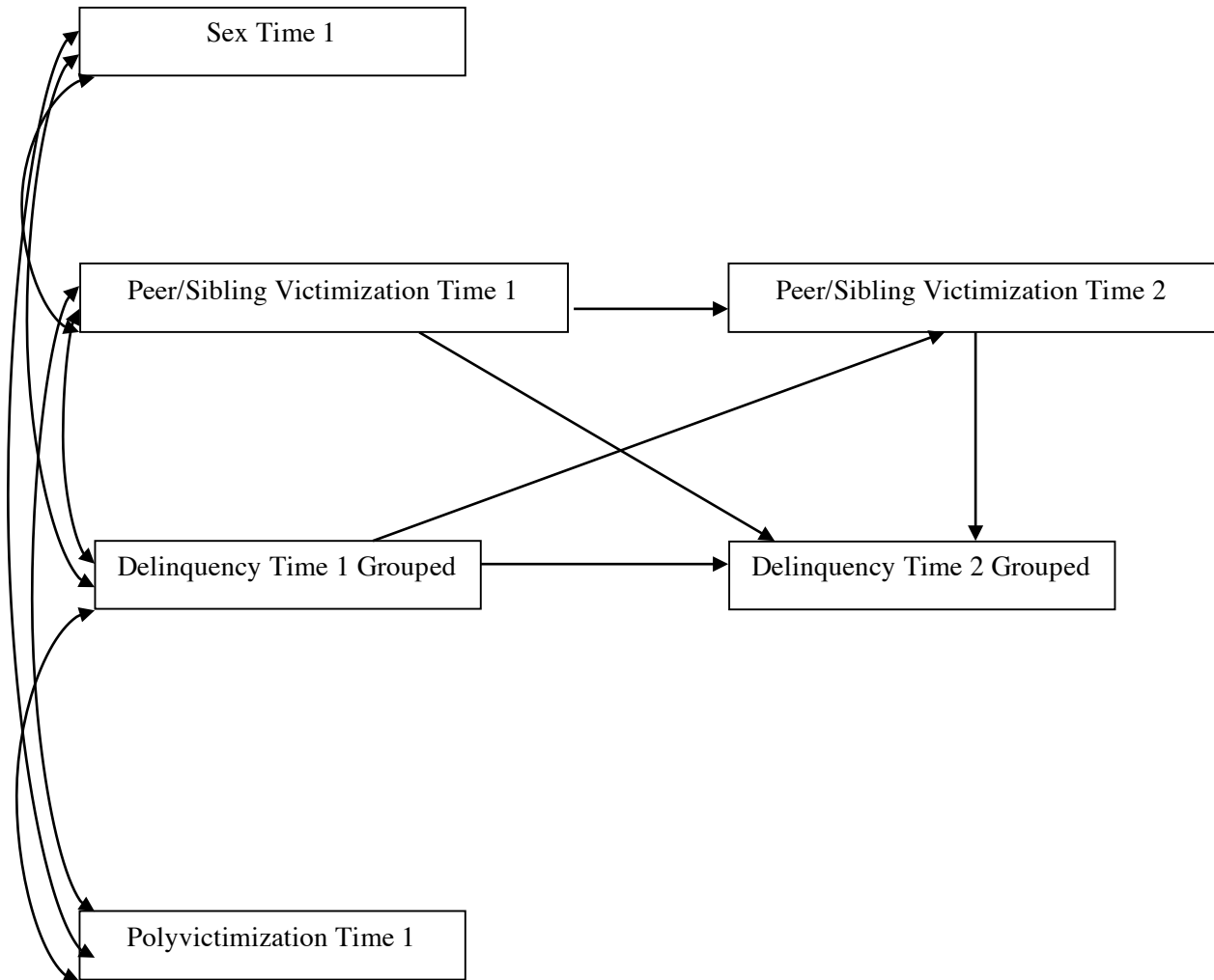
Appendix D: Blank Structural Equation Models**Figure 1: Cross-lagged structural equation model testing peer and sibling victimization and delinquency at Time 1 with peer and sibling victimization and delinquency at Time 2**

Figure 2: Cross-lagged structural equation model testing the mediational effects of family, friend, and other adult social support

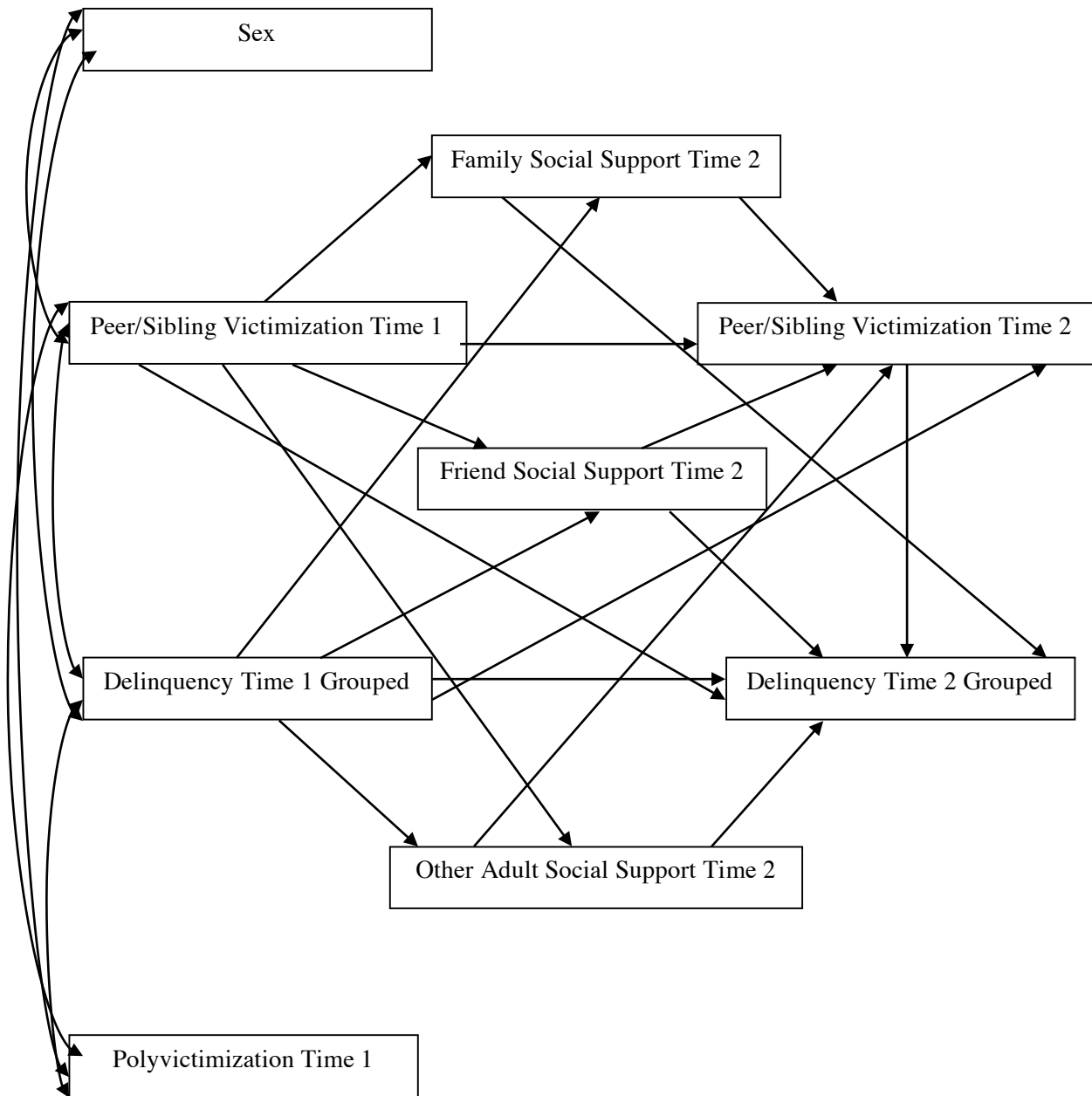
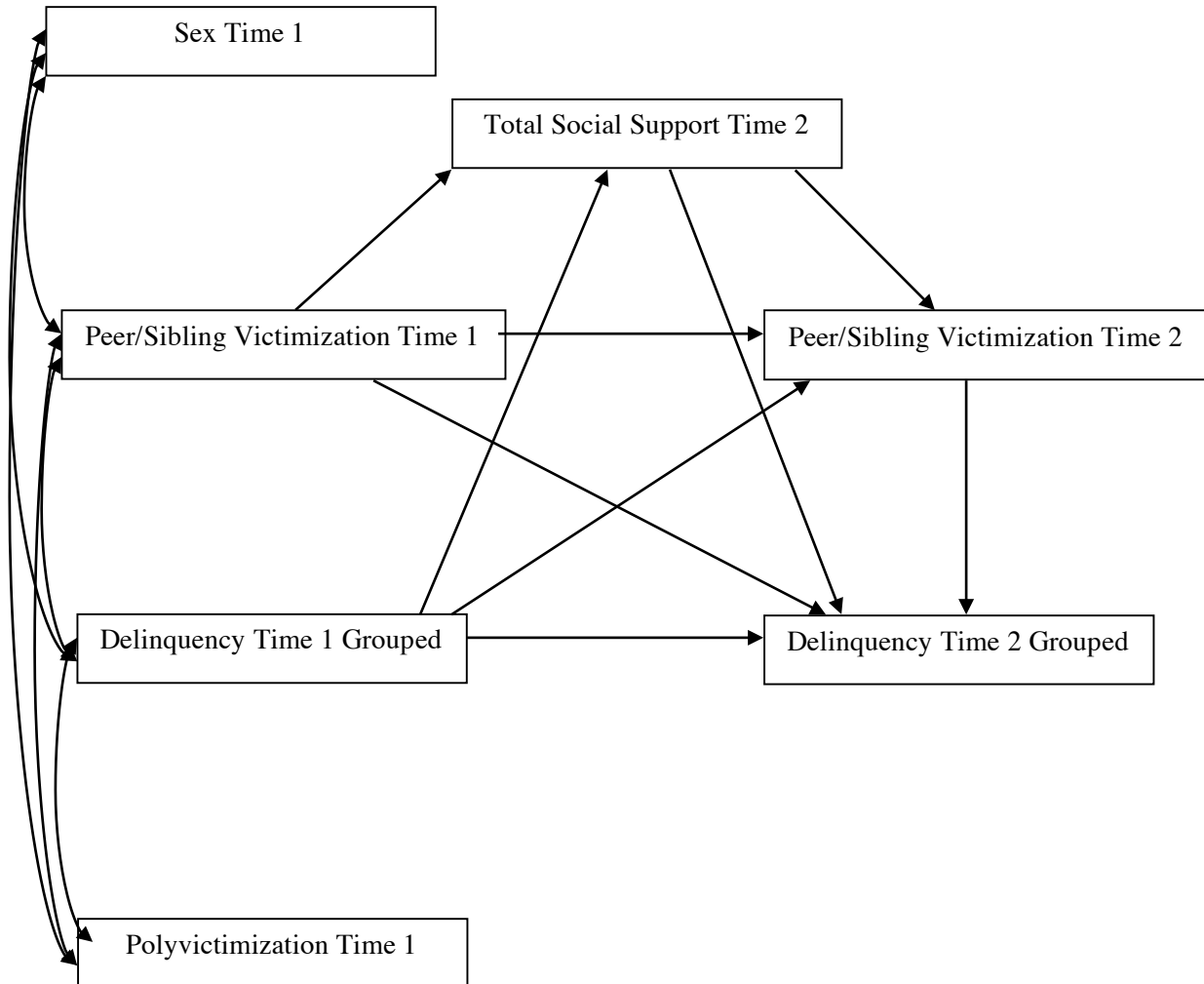


Figure 3: Cross-lagged structural equation model testing the mediational effect of total social support



Appendix E: Structural Equation Models with Standardized Beta Weights

Figure 1: Cross-lagged structural equation model testing peer and sibling victimization and delinquency at Time 1 with peer and sibling victimization and delinquency at Time 2 with standardized beta weights

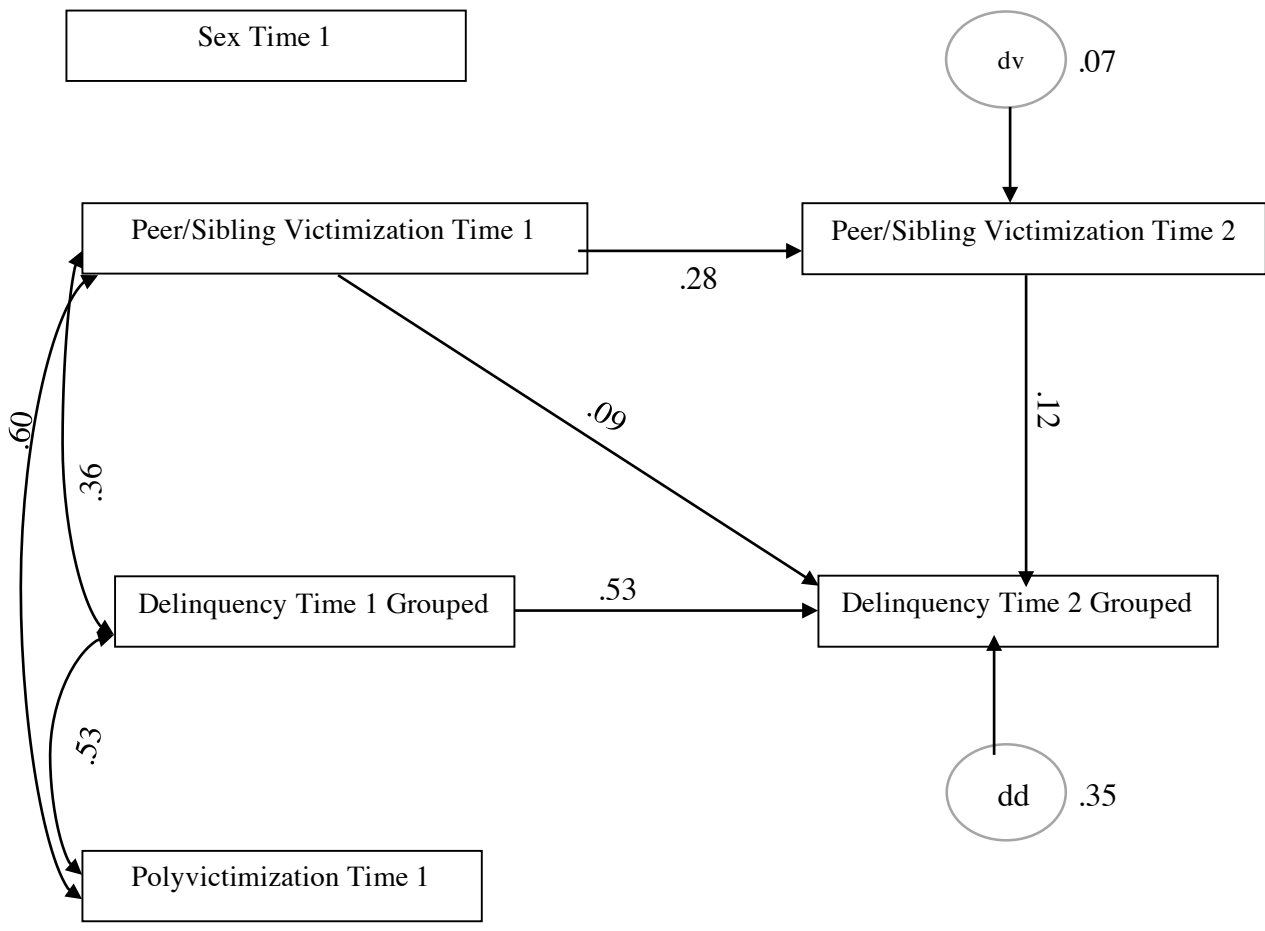


Figure 2: Cross-lagged structural equation model testing the mediational effects of family, friend, and other adult social support with standardized beta weights

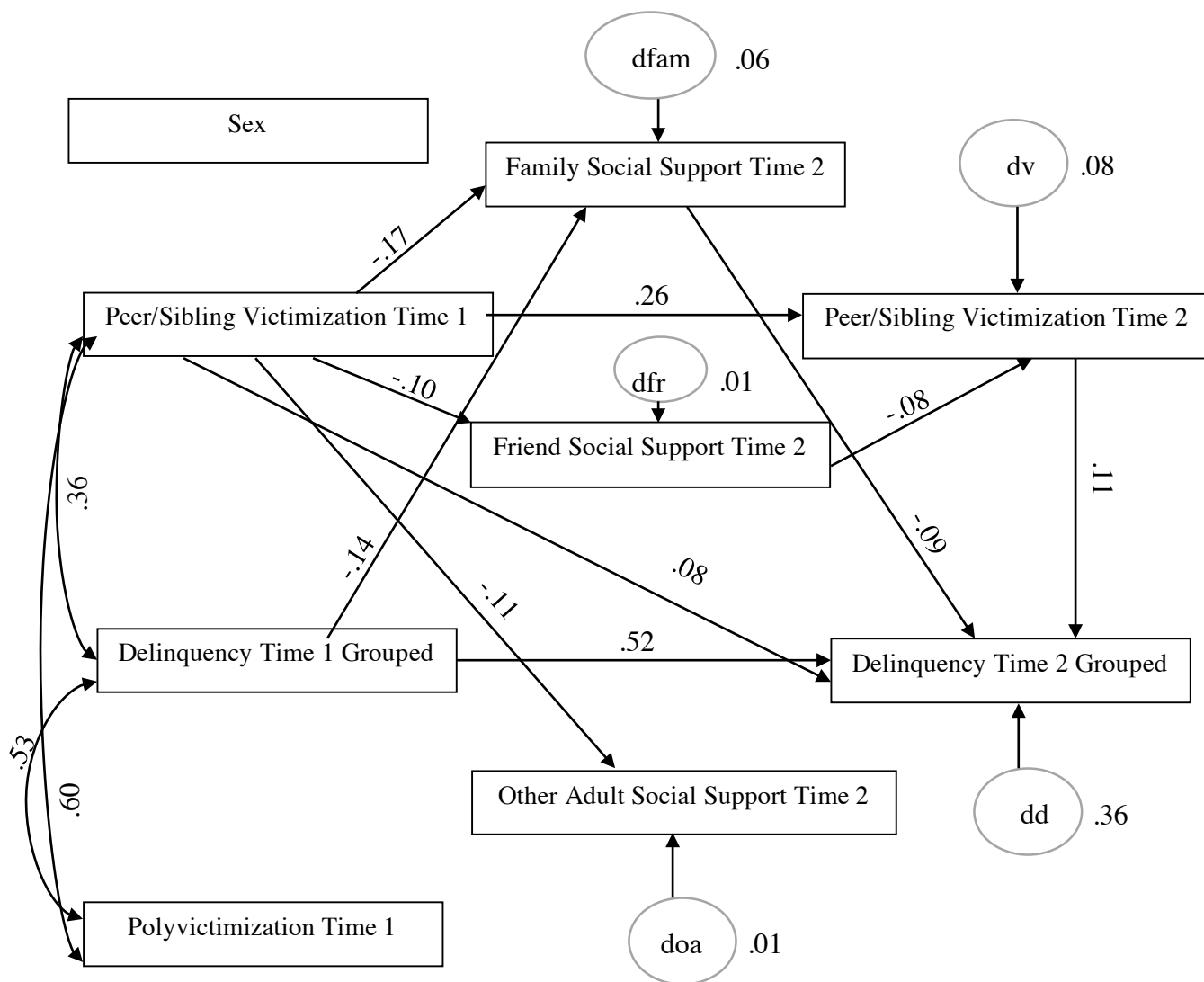


Figure 3: Cross-lagged structural equation model testing the mediational effect of total social support with standardized beta weights

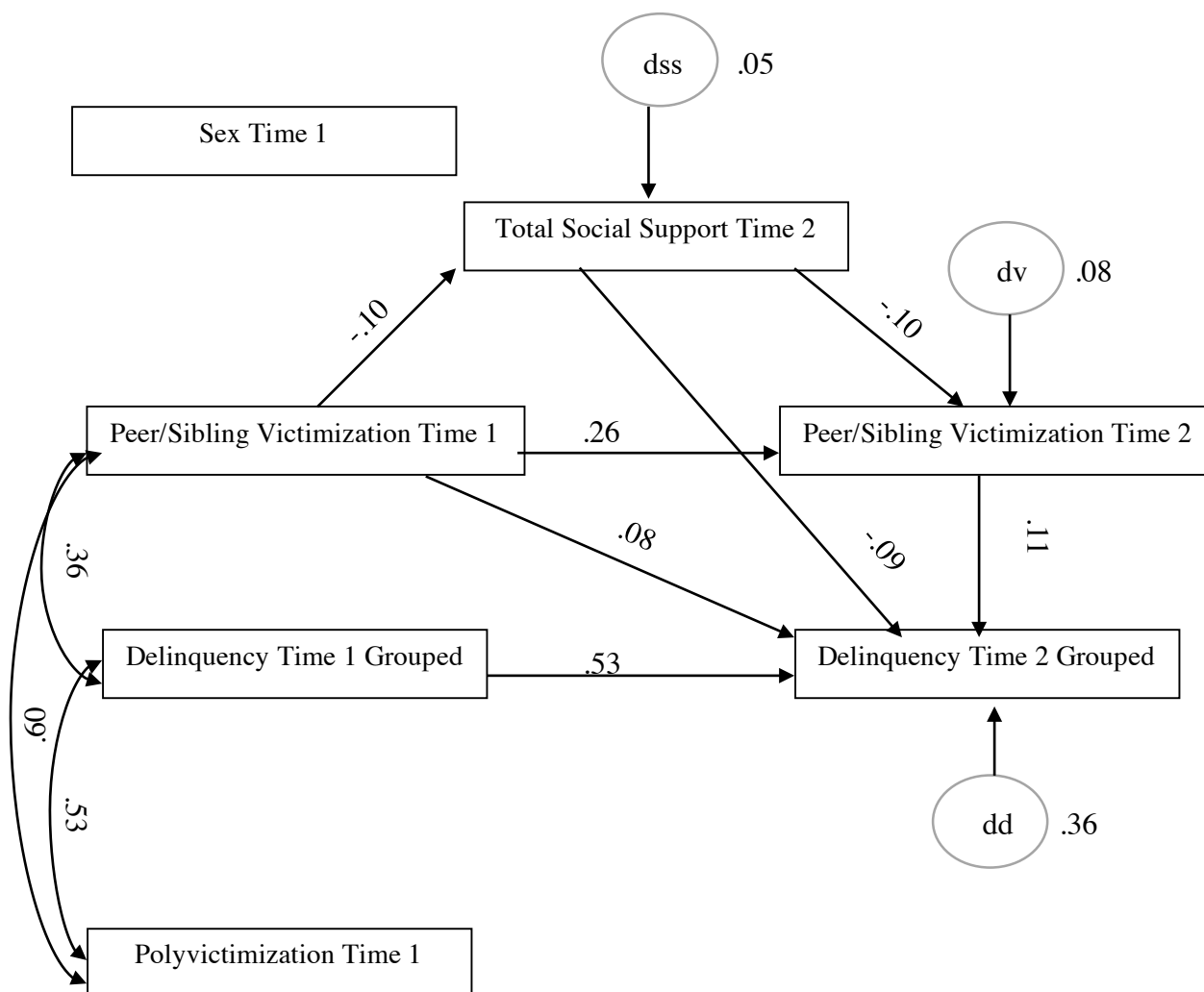


Table 4: Mediation Table for Structural Equation Models

Relationship	Direct without Mediator	Direct with Mediator	Indirect
PSV1 FamSS PSV2	$\beta = .28; p < .001$	$\beta = .26; p < .001$	Not Mediated
PSV1 FrSS PSV2	$\beta = .28; p < .001$	$\beta = .26; p < .001$	Partially Mediated
PSV1 OASS PSV2	$\beta = .28; p < .001$	$\beta = .26; p < .001$	Partially Mediated
PSV1 TotSS PSV2	$\beta = .28; p < .001$	$\beta = .26; p < .001$	Not Mediated
PSV1 FamSS Del2	$\beta = .09; p = .003$	$\beta = .08; p = .018$	Partially Mediated
PSV1 FrSS Del2	$\beta = .09; p = .003$	$\beta = .08; p = .018$	Not Mediated
PSV1 OASS Del2	$\beta = .09; p = .003$	$\beta = .08; p = .018$	Not Mediated
PSV1 TotSS Del2	$\beta = .09; p = .003$	$\beta = .08; p = .012$	Partially Mediated
Del1 FamSS Del2	$\beta = .53; p < .001$	$\beta = .52; p < .001$	Partially Mediated
Del1 FrSS Del2	$\beta = .53; p < .001$	$\beta = .52; p < .001$	Not Mediated
Del1 OASS Del2	$\beta = .53; p < .001$	$\beta = .52; p < .001$	Not Mediated
Del1 TotSS Del2	$\beta = .53; p < .001$	$\beta = .53; p < .001$	Not Mediated