Bias in parental reports? The moderating effect of parents' childhood peer victimization on their reports of their child's current experiences with bullying and depression symptoms

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Dedication

I would like to dedicate this thesis project to my daughter, Isabelle Grace, who quite literally nudged me along at the end. This should serve as a reminder to never give up on your goals and that with hard work you can achieve anything you set your mind to. I love you baby girl.

Abstract

Bullying is a prevalent and pervasive issue that can have both immediate and long-term detrimental effects on victims. Researchers have shown that victims of bullying may continue to experience negative outcomes into adulthood, where they may possibly have victimized children of their own. We examined whether parents' history of peer victimization moderated the relation between their children's self-reported peer victimization and children's depression symptoms in a sample of 417 parent-child dyads from the McMaster Teen Study. Possible confounding variables, such as sex of the child, parent's relationship to the child, parental education, and household income, were controlled for statistically. Consistent with our initial prediction, results indicated that parents' past victimization moderated the relation between child peer victimization and depression symptoms, but only when parent reports of child depression symptoms were used, not child self-reports. Implications for parental history of bullying as a potential source of bias in reports are discussed.

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Bias in parental reports? The moderating effect of parents' childhood peer victimization on their reports of their child's current experiences with bullying and depression symptoms

Although research indicates that being bullied by peers in childhood and adolescence has significant negative effects on current and future mental health (McDougall & Vaillancourt, 2015), no study to our knowledge has specifically examined whether parents' history of peer victimization may influence their reports of their victimized children's mental health. Researchers have found that the effects of childhood peer victimization can have long-lasting negative effects on the victims, which may persist into adulthood (McDougall & Vaillancourt, 2015). It can be expected that this, in turn, may influence how they perceive their own children's experiences with victimization. In the current study, we examined the possible moderating role of parents' history of peer victimization in the relation between their child's current reports of peer victimization and symptoms of depression (both child self-reported and parent-reported).

Bullying

Peer victimization[1] (i.e., being the victim of bullying) is a serious issue that is estimated to affect between 10% to 25% of youth (Fekkes, Pijpers, & Verloove-Vanhorick, 2005; Nansel et al., 2001; Pateraki & Houndoumadi, 2001). Bullying is considered a subtype of aggression with specific characteristics (Griffin & Gross, 2004). Olweus (1991) has provided the most widely used definition of bullying, which involves repeated, intentional negative actions toward another person. The perpetrator of bullying also has a real or perceived power over his/her target, who is often unable to defend him/herself.

Bullying can take many forms including physical (e.g., hitting and kicking), verbal (e.g., name-calling), and relational (e.g., getting others not to like someone, saying bad things behind someone's back, or using derisive body language) aggression. Earlier research has focused mainly on overt forms of aggression, specifically physical and verbal aggression, while more recent attention has been paid to the use of social manipulation as a means to harm others (i.e., relational aggression; Vaillancourt, 2005). Studies on the prevalence of bullying suggest that verbal and relational bullying are the most commonly used forms (Craig, Pepler, & Atlas, 2000; Vaillancourt et al., 2010a, b).

[1] Peer victimization is used to denote being the victim of bullying, bullying perpetration to denote being the perpetrator of bullying, and bullying to describe involvement in bullying as either a perpetrator or victim.

The research on gender differences in frequency of bullying is somewhat mixed, but in general, findings indicate that boys are more likely to both bully and be bullied than girls (Fekkes et al., 2005; Ma, 2002), which has been confirmed in a meta-analysis (Cook et al., 2010). In terms of types of bullying, girls are more likely to engage in and receive relational forms of aggression, whereas boys partake more in physical forms of bullying (Bjorkqvist, Lagerspetz, & Kaukiainen, 1992; Fekkes et al., 2005; Pateraki & Houndoumadi, 2001). Regarding developmental differences, research suggests that bullying tends to peak in middle childhood (grades 5-8) and decrease thereafter (Fekkes et al., 2005; Pateraki & Houndoumadi, 2001; see also Cook et al., 2010).

Negative effects of peer victimization

Peer victimization is associated with a number of negative outcomes in childhood and adolescence. The negative effects include psychosomatic symptoms, school avoidance, loneliness, anxiety, depression, and suicidal ideation (Bond, Carlin, Thomas, Rubin, & Patton, 2001; Brunstein-Klomek, Marrocco, Kleinman, Schonfeld, & Gould, 2007; Fekkes, Pijpers, & Verloove-Vanhorick, 2004; Hutzell & Payne, 2012; Kochenderfer & Ladd, 1996).

Although there is general agreement in the literature that peer victimization leads to a number of adverse effects (McDougall & Vaillancourt, 2015), the question of directionality is far from straight forward. Indeed, many of the outcomes examined, such as depression and anxiety, may also make children more vulnerable to bullying from their peers. For example, Fekkes, Pijpers, Fredriks, Vogels, and Verloove-Vanhorick (2006) found that children who were victimized by their peers were more likely to develop symptoms of depression and anxiety than their non-bullied peers when measured six months later. Additionally, they found that children who were already depressed or anxious had higher chances of being victimized by their peers than non-depressed and non-anxious children. Vaillancourt, Brittain, McDougall, and Duku (2013) also found support for a symptoms-driven pathway from internalizing problems to peer victimization over time (grade 5 to 6 and grade 7 to 8). In a meta-analysis of longitudinal studies, Reijntjes, Kamphuis, Prinzie, and Telch (2010) concluded that although internalizing problems are more often a consequence of peer victimization, they can increase a child's likelihood of being victimized by their peers. Similar findings on bi-directionality were reported when examining the relation between peer victimization and externalizing issues (Reijntjes, Kamphuis, Prinzie, Boelen, van der Schoot, & Telch, 2011).

Although the experience of peer victimization has unique effects on each individual, research indicates general trends in how boys and girls respond differently to bullying. Rueger, Malecki, and Demaray (2011) found that victimized girls generally experience more depression symptoms than victimized boys, and that these symptoms tended to persist even once the bullying stopped. Ledwell and King's (2015) study also supports these findings. Specifically, they found that the association between being bullied and internalizing problems was stronger for teenage girls than for boys and hypothesized that this may be due to the fact that girls place more emphasis on social relations than boys.

Long-term effects of peer victimization into adulthood

Many longitudinal studies have examined the long-term effects of peer victimization in childhood on adolescent well-being (Sourander, Helstela, Helenius, & Piha, 2000) although fewer have examined the effects all the way into adulthood (see McDougall & Vaillancourt, 2015 for review). In one of the first studies to examine the negative effects of peer victimization into early adulthood, Olweus (1993) found that although men who had been victimized in ninth grade had slightly higher levels of depression and lower self-esteem at age 23 than those who were not victimized, overall the two groups did not greatly differ in terms of internalizing issues. Olweus suggested that the negative outcomes are caused by the situation itself, and once the child leaves school and has more freedom to choose their social environments, he or she is able to recover from their previous victimization experiences. Nevertheless, due to a small sample size of only 15 victimized men, these results need to be interpreted with caution and may not be generalizable to the entire population.

Since Olweus' (1993) findings, much of the research indicates that peer victimization in early life does, in fact, contribute to both physical and mental health issues in later life. Vassallo, Edwards, Renda, and Olsson (2014) examined peer victimization at age 13-14 and depression at age 19-20 and found that children who were victimized in early adolescence were almost twice as likely to have symptoms of depression in early adulthood as their non-bullied peers. In a study of Danish men, peer victimization in school was found to increase the chances of depression, both self-reported depression symptoms and a formal diagnosis, in adulthood (Lund et al., 2008). These results also increased when participants reported a longer duration and higher intensity of bullying. Bowes, Joinson, Wolke, and Lewis (2016) examined the relation between peer victimization at age 13 and depression at age 18. The researchers found that rates of depression

increased by 2.96 in adolescents reporting frequent victimization compared to those reporting no victimization. They also stated that 29.2% of the risk of depression at age 18 could be attributed to peer victimization at age 13.

Other studies have also found an increase in later anxiety disorders, including social anxiety disorder, in adulthood for those who were victims of childhood peer victimization (Roth, Coles, & Heimberg, 2002; Sourander et al., 2007). In a recent meta-analysis, Ttofi, Farrington, Losel, and Loeber (2011) found that childhood peer victimization increased the chances of depression in adulthood, even when controlling for other risk factors. Wolke, Copeland, Angold, and Costello (2013) reported similar findings, stating that adults who were involved in bullying - as either a victim or a bully-victim - were at a higher risk for developing adult psychiatric disorders such as depression or anxiety than those who were not involved in childhood bullying. These findings remained significant even after controlling for childhood hardships, such as socioeconomic status (SES), family dysfunction, and maltreatment. Finally, Takizawa, Maughan, and Arseneault (2014) examined the long-term effects of bullying and found that being bullied in childhood increased the likelihood of depression, anxiety, and poorer general health in adulthood, even up to 40 years later.

Retrospective studies also suggest a connection between childhood peer victimization and poorer adult functioning. For example, Allison, Roeger, and Reinfeld-Kirkman (2009) found that South Australian adults who recalled previous victimization by peers in childhood reported poorer levels of both physical and mental health, including symptoms of anxiety and depression. Lund et al. (2008) also found that men who recalled having been bullied in childhood were more likely to be diagnosed with depression in later adulthood, between the ages of 31 and 51. In addition, adults who recalled being bullied were more likely to report suicidal ideation than those who did not report previous peer victimization (Roeger, Allison, Korossy-Horwood, Eckert, & Goldney, 2010). Each of these three studies found significant results even after controlling for confounding variables such as employment, marital status, SES, parental mental illness, and prior depression. Shäfer and colleagues (2004) also found that adult retrospective reports of victimization were correlated with current reports of low self-esteem and difficulties maintaining friendships. Finally, Rivers (2001) asked adult participants to recall their experiences with peer victimization, including factors such as duration, type, and location of the bullying, at two separate time points, and found that participants were able to remember many details of their

experiences and that these reports did not vary greatly between time points. These studies provide evidence for the link between early victimization and poorer functioning into adulthood.

Role of parents in children's victimization

As evidenced in the literature, peer victimization often results in long-term negative effects continuing into adulthood, yet very few studies have examined the specific consequences this may have when victimized children become parents. This is a significant area of research because parents play an important role in the development of their children and in particular, their children's bullying experiences and mental health.

First, parents can increase a child's chance of becoming victimized by their peers, through genetics, environment, and parenting style (Allison, Roeger, Smith, & Isherwood, 2014; Lereya, Samara, & Wolke, 2013). Allison and colleagues (2014) found that 55% of parents who reported previous peer victimization reported that their child was also victimized, compared to only 25% of non-victimized parents, indicating that parental peer victimization may predict a child's likelihood of being bullied as well. Parents' own mental health issues could also increase a child's risk of peer victimization. For example, Tsypes and Gibb (2015) found that daughters of depressed mothers reported higher rates of suicidal ideation, and that this relation was mediated by the child's peer victimization experiences. The authors speculate that this is because children of depressed mothers experience more peer victimization than their peers without depressed mothers. Additionally, parenting style has been shown to correlate with peer victimization, with parental overprotectiveness increasing a child's chances of being a victim of bullying from their peers (Georgiou, 2008a). Other parental or family factors associated with child peer victimization include parental conflict or instability, harsh parenting style, and lower SES (Bowes et al., 2013; Brendgen et al., 2016; Georgiou, 2008b; Lereya, Samara, & Wolke, 2013).

Second, parents can also provide support for their victimized children, helping them prevent and cope with bullying. Ledwell and King (2015) found that parental communication diminished the negative effects of peer victimization on internalizing issues for adolescents, providing the child with a supportive figure to process their feelings. In some cases, parents may also provide support to their victimized child by communicating with school officials and advocating for help at school (Sawyer, Mishna, Pepler, & Wiener, 2011).

Finally, parents, especially mothers, are often asked to report on their children's bullying experiences, both in clinical and in research settings and they are often used as primary reporters of their children's mental health (De Los Reyes & Kazdin, 2005). However, researchers have identified potential sources of bias in parent reports. First, parent reports tend to be more valid and reliable for younger children than older children (Achenbach, McConaughy, & Howell, 1987). This may be because as children age, the accuracy of parent reports may be exceeded by either self-reports or peer-reports, as teenagers share less information with their parents and more with their peer groups (Harris, 1995). Second, research has shown that parent reports may be more accurate for child externalizing issues than internalizing issues due to internalizing symptoms being less visible (Achenbach et al., 1987; De Los Reyes & Kazdin, 2005). Third, there are a number of parent factors that may influence their reports, most notably parental depression (De Los Reyes & Kazdin, 2005).

Biases in parental reports

Although parental psychopathology can have an actual effect on their child's mood and behaviour, it is also found to be a potential source of bias on their reports of their children (De Los Reyes & Kazdin, 2005). For example, Najman and colleagues (2001) found that anxious and/or depressed mothers reported more behaviour problems in their children than non-depressed mothers and the children themselves. Parental self-reported depression was also found to correlate with their reports of depression in their children; yet no relation was found when the children reported on their own depression (Moretti, Fine, Haley, & Marriage, 1985). The influence of parental psychopathology is not only limited to reports of child depression. In a recent study by Bennett and colleagues (2012), mothers who self-reported higher depression also reported more behaviour challenges in their children with autism spectrum disorder.

That said, no study to date has examined how childhood bullying experiences impact parents' current perceptions of their child's experiences with peer victimization and their reports of depression symptoms in their child. In fact, only a handful of studies have looked at parents' history of bullying and victimization. In a study by Cooper and Nickerson (2013), parents' history of bullying involvement was examined in relation to their current views and strategies surrounding bullying. In this study 32.8% reported experiencing childhood peer victimization, most commonly in the form of verbal bullying followed by relational bullying. Parents' history of involvement with physical bullying was found to be predictive of their level of concern

regarding their children's experience with bullying, but parent history of bullying did not influence how they instructed their children to cope with bullying. Parents reported most concern with verbal and relational bullying and the least concern with cyberbullying and physical bullying.

In a qualitative study by Sawyer and colleagues (2011), parents were asked to report on their understanding of bullying, their children's involvement as either a perpetrator or a target, and how they helped their child cope with peer victimization. The parents were also asked to report on their own experiences with bullying as a child, and 30% reported being bullied in childhood. However, this study did not examine how parent history of bullying may have impacted their views or coping strategies toward their children's victimization.

Finally, in a study by Allison and colleagues (2014), parents' past experiences with victimization were examined and found to be predictive of their children's likelihood of also being victimized by their peers. Yet, the study did not examine how parental history of victimization may impact their reports of their children's mental health or strategies for helping their child cope with the victimization.

Although not specifically related to parent past victimization, a study by Oldenburg and colleagues (2015) examined teachers' previous bullying experiences and the effects it has on their ability to cope with their students' experiences. They predicted that victimized teachers would have less peer victimization in their classrooms; however this was not the case, leading the researchers to speculate that perhaps victimized teachers lack the skills to deal effectively with classroom bullying. This suggests that past victimization may influence an adult's ability to cope with children's bullying experiences, which may also be true for parents helping their own children cope with peer victimization.

The Present Study

Despite evidence that many survivors of childhood bullying continue to experience long-lasting negative effects into adulthood, it is unclear how these effects may impact them in their roles as parents, especially if their own children are also experiencing peer victimization.

A major goal of research is always to minimize possible sources of bias in results. Since parents are frequently used to report on their children's experiences and symptomatology, it is important to examine the accuracy of these reports and potential biases they may contain. Our aim in conducting the current study was to address the potential influence of parents' prior

victimization experiences on their reports of their child's victimization experiences and depression symptoms. Previous research has indicated the long-term effects of peer victimization into adulthood, such as depression (see McDougall & Vaillancourt, 2015 for review). Parental depression has also been found to influence their reports of their child's experience (De Los Reyes & Kazdin, 2005). Therefore, it is beneficial to examine the possible link between parents' past peer victimization and their reports of their children's symptoms of depression in the context of their children's current bullying experiences.

Other factors that have been shown to influence child and adolescent depression are socioeconomic factors, specifically parental education and income (Goodman, Slap, & Huang, 2003; Reiss, 2013), as well as child sex (Ledwell & King, 2015; Rueger et al., 2011). Additionally, a study by Grimbos, Granic, and Pepler (2013) reported higher rates of both maternal depression and child internalizing symptoms in lower income families where mothers' had lower levels of education. For this reason, we included child sex, parental income and educational attainment as control variables in our analyses.

Research questions and hypotheses

The relation between parents' reports of their own childhood peer victimization and their reports of their children's peer victimization experiences and mental health challenges, specifically depression symptoms, were studied and the following research questions were examined.

Question 1: Are parents' past experiences with bullying correlated with their children's current self-reported peer victimization?

Hypothesis 1 (H1): Based on previous findings, we predicted that parents who reported higher levels of peer victimization in childhood were more likely to have children who were victimized as compared to non-bullied parents (Allison et al., 2014).

Question 2a: Do parents' past experiences with bullying moderate the relation between their child's peer victimization and their reports of their child's depression symptoms?

Hypothesis 2a (H2a): As this is the first study to our knowledge examining the moderating effect of parents' past victimization, the following hypothesis was exploratory in nature. However, based on the fact that childhood peer victimization increases the likelihood of depression into adulthood (Takizawa et al., 2014; Wolke et al., 2013) and depressed parents often report higher depression symptoms in their children (Najman et al., 2001), we expected to find a stronger

significant positive relation between child peer victimization and parent-reported child depression symptoms for parents who reported higher levels of childhood peer victimization than for parents who reported lower levels of childhood victimization experiences.

Question 2b: Do parents' past experiences with bullying moderate the relation between their child's peer victimization and the child's self-reported depression symptoms?

Hypothesis 2b (H2b): In line with findings by Moretti and colleagues (1985), in which parent ratings of their depression correlated with their reports of their children's depression, but not when the children reported their own depression symptoms, we expected that parents' reports of being bullied in childhood would not moderate the relation between their children's peer victimization and the child's symptoms of depression, *when children's self-reports were used* to measure symptoms of depression, but moderation would be found when parent reports of depression symptoms were examined.

Methodology

Research Design

Data were obtained as part of a large ongoing, longitudinal study (the *McMaster Teen Study),* which is currently in its ninth year of data collection. The study began in Spring 2008 and assesses the relation between bullying, mental health, and academic achievement in children and adolescents.

Participants

Participants were part of a longitudinal study, which began when the children were in grade 5 (T1). For the purpose of this study, data were drawn only from Time 6 (Grade 10) of the study, as that is the first and only year parents were asked to report on their victimization experiences in childhood.

Participants were originally recruited from 51 randomly selected primary public schools in Southern Ontario. For more detailed information on the original participant recruitment process, see Vaillancourt et al. (2013). The longitudinal sample consisted of 875 participants, however participants were only included in our study if both the parent and child completed the survey in Year 6. This resulted in a study sample of 417 parent-child dyads.

Youth in our sample consisted of 55.6% adolescent girls (n=232) and a mean age of 16.0 (SD= .35). Youth were predominantly White (79.1 %). The sample of parents was mostly biological mothers (n=356; 85.4%), with 41 biological fathers, and 20 reporting "other"

relationship (e.g., adoptive mother, grandmother). Median annual household income was "more than $80,000," which was comparable to the general population in the city at the time of data collection (www.statcan.gc.ca). The majority of parents (n=326; 78.1%) had obtained post-secondary education (college diploma, university undergraduate degree, or university graduate degree).

In order to assess whether our current sample of 417 differed from the longitudinal sample of 875, we conducted a series of independent samples t-tests. We found no significant differences between the longitudinal sample and the current sample in terms of child gender. In terms of demographic information, t-tests revealed that participants in our current sample were more likely to report higher levels of education ($t(805) = -8.06$, $p < .001$) and higher annual income ($t(124.11) = -2.13$, $p = .035$) than those not included in our sample. This is consistent with previous research stating that lower SES, specifically lower income and education, increases participant attrition (Wolke et al., 2009). Children in our sample did not differ from those excluded from the study on our variables of interest: self-reports of peer victimization ($t(451) = -.01$, $p = .061$) or depression ($t(447) = 1.88$, $p = .992$). However, parents included in our sample reported lower depression symptoms in their children ($t(55.96) = 2.31$, $p = .024$) than those who were not included in the study. They also reported lower scores of past peer victimization ($t(465) = 2.58$, $p = .01$) than those parents who were excluded from the sample.

Measures

Peer victimization (child-reported). Child self-reports were used to assess peer victimization. Students were provided with a standard definition of bullying[2] (different from aggression, fighting, and teasing) and were then asked to rate their experiences in the past year on a 5-point scale (*0 = not at all* to *4 = many times a week*). The scale, adapted from the Olweus Bully/Victim questionnaire (1996), included five items, addressing general bullying experiences ("How often have you been bullied at school?") and specific forms of bullying (physical, verbal, relational, and cyber; Vaillancourt et al., 2010a, b). The scores on each item were averaged to create a composite child victimization score, with higher scores indicating higher levels of peer victimization. Cronbach's alpha for this measure was good ($\alpha = .81$).

[2] Definition of bullying provided to students: "These questions are about bullying in school. There are lots of different ways to bully someone but a bully wants to hurt he other person (it's not an accident), and does so repeatedly and unfairly (the bully has some advantage over the victim). Sometimes a group of students will bully a student. It is not bullying when two students of about the same strength quarrel or fight."

Past peer victimization (parent-reported). Parents were asked to report on their previous victimization experiences at any point in their childhood ("These questions refer to your entire childhood experiences. Have you ever had any of the following things happen to you in a mean or hurtful way?"). Parents responded on a *yes* or *no* scale. The original scale (Holt et al., 2013) consisted of eight items assessing different types of bullying (physical, verbal, social), but, similar to previous studies (see Cooper & Nickerson, 2013), we chose to omit the item assessing cyberbullying due to it being a relatively new phenomenon. The scores on the remaining seven items were averaged to create a composite of parent past victimization, with higher scores indicating higher levels of victimization. However, since this measure is on a dichotomous scale (yes/no), it should be taken as a proxy for measuring severity of bullying. Sample items include "Have you ever been teased or called names in a mean or hurtful way?" and "Have you ever been hit, pushed, or physically hurt in a mean or hurtful way?" Internal consistency of this measure was good ($\alpha = .78$).

Child depression symptoms. Children's symptoms of depression were measured using parent reports and child reports. Parents completed the depression symptoms subscale of the Brief Child and Family Phone Interview, Version 3 (BCFPI-3; Cunningham, Pettinghill, & Boyle, 2000), which asked them six questions assessed on a three-point scale (*0 = never, 1 = sometimes, 2 = often*; e.g. "Do you notice that your child has trouble enjoying him/herself?" "Do you notice that your child seems unhappy, sad, or depressed?"). An overall parent-reported depression score was obtained by averaging the scores on each of the six items. A higher score indicated higher levels of child depression symptoms. Internal consistency of this measure was high ($\alpha = .90$).

Children also provided self-reports of their depression symptoms by completing a subscale of the BASC-2 Adolescent version (Reynolds & Kamphaus, 2004). This measure included 12 items, in which children either responded on a true/false (*2 = true, 0 = false*) or a four-point scale (*0 = never* to *3 = almost always*). Items included such statements as "nothing ever goes my way," "I just don't care anymore," and "I feel sad." The scores on the 12 items were summed to create a composite of child-reported depression symptoms, with higher scores indicating higher levels of depression symptoms. Internal consistency was high ($\alpha = .90$).

Covariates. Parents were asked to state their relationship to the child. Options consisted of "biological mother," "biological father," or "other." Those who reported "other" were asked to

specify their relationship. Due to the fact that the majority of parents in this study were biological mothers, the variable was dichotomized and coded as "mother" and "other." Parents were also asked to report on their demographic information. Parents reported the highest level of education they had obtained. Options included "did not complete high school," "completed high school," "college diploma or trades certificate," "university undergraduate degree," and "university graduate degree." They also indicated their annual household income. Groups were "less than $20,000," "between $20,000 and $30,000," and continued in ten thousand dollar increments up to "more than $80,000." Parent education and income were examined as continuous variables.

Procedure

In Year 6 of the study, as with previous years, parents provided consent for their own participation in a phone interview and permission for their child to participate. The majority of parents (n = 397; 95.2%) completed a 30-minute phone interview with a trained research assistant, but 17 parents completed an online survey and 3 others requested to complete a paper questionnaire, which was mailed to them with a pre-stamped return envelope. Independent samples t-tests revealed that parent reports of their children's depression symptoms and reports of their own past victimization (our variables of interest) did not differ between those who completed a phone interview and those who completed an online interview. Parents' demographic information (income and education) also did not differ based on survey type.

Children completed an online (70.0%) or a paper questionnaire (30.0%), and were asked to do so in private without friends or parents around. Independent samples t-tests revealed no significant differences on our variables of interest (children's reports of their victimization or depression symptoms) based on the type of survey they completed. However, children who completed an online survey were more likely to come from households with higher annual income ($t(176.42) = -5.15$, $p < .001$) and higher levels of parental education ($t(407) = -3.16$, $p = .002$) than those who completed paper surveys. In Year 6 of the study, parents were compensated with a $25 gift certificate and students with a $30 gift certificate.

Data Analyses

Two separate hierarchical multiple regressions were conducted using SPSS to test whether parents' past experiences with victimization moderated the relation between child peer victimization and child depression symptoms. Both analyses included child-reported peer

victimization as the predictor variable and parent past victimization as the moderator, but the first analysis used parent-reported child depression symptoms (Figure 1a) and the second analysis used child self-reported depression symptoms (Figure 1b) as the criterion variable in order to assess H2a and H2b, respectively.

In each regression analysis, child sex, parent education level, income, and relationship to child were entered as control variables (Step 1). We then entered main effects of child self-reported victimization and parent past victimization (Step 2). The interaction effect of child self-reported victimization and parent past victimization was entered in the final step (Step 3). As per recommendations by Aiken and West (1991), we first centered the predictor variables (child self-reported peer victimization, parent past peer victimization, income, and education) prior to creating the interaction terms and entering them into the regression analyses. Dichotomous predictor variables, which included child sex (1 = female, -1 = male) and parent relationship (1 = mother, -1 = other), were coded using unweighted effects coding. Interactions from both regression analyses were interpreted by dichotomizing the moderator variable into high (+1SD) and low (-1SD) levels, a technique recommended by Aiken and West (1991). This allowed us to examine how the relation between child peer victimization and depression symptoms varied at differing levels of parent past victimization.

Results

Descriptive analyses

Means and standard deviations are reported in Table 1. Bivariate correlations are reported in Table 2. We hypothesized that parent past peer victimization would be positively correlated to their children's peer victimization status (H1). Results indicated that there was a significant, albeit weak, positive correlation between these variables, $r = .14$.

Statistically significant positive correlations were also found between child-reported peer victimization and both parent-reported ($r = .29$) and self-reported depression symptoms ($r = .50$). Parents' retrospective reports of peer victimization were also positively and significantly related to both parent-reported ($r = .22$) and child self-reported depression symptoms ($r = .15$). Finally, parent-reported child depression symptoms and child self-reported depression symptoms were significantly positively correlated as well ($r = .46$).

Do parents' past experiences with peer victimization moderate the relation between child peer victimization and parent reports of child depression symptoms (H2a)?

In the first step of the regression equation, the control variables were entered and found to significantly predict parent-reported child depression symptoms, $R^2 = .09$, $F(4, 380) = 9.37$, $p < .001$. In the second step, child self-reported peer victimization and parent past peer victimization were entered as predictor variables and significantly increased the variance in parent-reported child depression symptoms, $\Delta R^2 = .05$, $F(2, 378) = 10.41$, $p < .001$. The interaction term entered into the final step was also found to be statistically significant, $\Delta R^2 = .01$, $F(1, 377) = 5.73$, $p < .05$.

Follow up analyses revealed that at high levels of parent past peer victimization, the effect of child peer victimization on parent-reported child depression symptoms was statistically significant, $b = .19$, $p < .001$. However, at low levels of parent past peer victimization, the effect of child peer victimization on parent-reported child depression symptoms was not significant, $b = .02$, $p = .699$. See Figure 2.

Do parents' past experiences with peer victimization moderate the relation between child peer victimization and child self-reported symptoms of depression (H2b)?

Another hierarchical regression analysis was conducted using child self-reports of depression symptoms as the outcome variable. In step 1, the control variables were again entered and found to significantly affect the variance in child self-reported depression symptoms, $R^2 = .13$, $F(4, 377) = 13.90$, $p < .001$. In the second step, child self-reported victimization and parent past victimization were added and significantly increased the variance, $\Delta R^2 = .19$, $F(2, 375) = 51.53$, $p < .001$. In the final step, the addition of the interaction term between child peer victimization and parent past victimization was not statistically significant, indicating that parent past peer victimization did not significantly moderate the relation between child peer victimization and child-reported depression symptoms, $\Delta R^2 = .00$, $F(1, 374) = .06$, $p = .808$. Figure 3 shows the relation between child peer victimization and self-reported depression at both high and low levels of parent past peer victimization.

Discussion

Researchers are continually trying to obtain the most accurate data by identifying and minimizing potential sources of bias in reports. The aim of the present study was to examine whether parents' personal experiences with childhood peer victimization moderated the relation between their reports of their children's bullying experiences and their children's depression symptoms. We examined this relation using both parent reports of child depression symptoms

and child self-reports of depression symptoms to see whether this influenced the moderation, while controlling for possible confounding factors, including child sex, parents' relationship to child, income, and parental education.

In line with findings by Allison et al. (2014), in which victimized parents were more likely to report victimization in their children, our findings show a significant positive correlation between parents' history of peer victimization and their children's peer victimization, as reported by the child. However, it should be noted that this correlation was fairly weak and therefore the relation may only apply to small proportion of the victimized parents. As previous studies have stated, this relation may be due to environmental or genetic influences (Allison et al., 2014). One possible environmental factor affected by a parent's history of peer victimization is their parenting style, specifically how they may cope with stressors and help their children cope. The long-term negative effects of childhood peer victimization into adulthood, specifically anxiety and depression, may affect the coping strategies they use to help their children deal with their own peer victimization.

Researchers have shown that how parents cope with stressors influences how their children also cope. Grimbos, Granic, and Pepler (2013) found that maternal depression was positively correlated with child internalizing and externalizing issues, co-rumination (dwelling on negative emotions and over-speculating on issues) and impaired problem-solving by the parent. Depressed mothers exhibited more negative behaviour in problem-solving discussions with their children than non-depressed mothers and therefore may not be modelling effective coping strategies. Additionally, Monti, Rudolph, and Abaied (2013) found that maternal depression influenced the coping suggestions they provided for their children experiencing peer victimization. Depressed mothers focused less on positive thoughts (e.g. focusing on the source of their stress or changing how they think about it) and more on cognitive avoidance. However, these studies did not examine the mothers' history of peer victimization to determine whether this influenced the relation.

In terms of the genetic influence on the correlation between parent and child peer victimization, a twin study by Ball et al. (2008), found that genetics accounted for 73% of the variance in peer victimization in 10-year-old children. The remaining variance was accounted for by environmental factors not shared by the twins. The researchers speculate that this high rate of genetic influence on peer victimization is related to personality characteristics that children

inherit that make them more likely to be bullied by their peers, such as introversion and problems with emotional regulation. The Cambridge Study in Delinquent Development, a longitudinal study of men and their bullying experiences in childhood and the effects into adulthood also found evidence for intergenerational continuity of peer victimization (Farrington, 1993). They found that boys in childhood with common characteristics of victims (unpopularity, nervousness, lack of friends) were more likely in adulthood to have children who were victimized by their peers. The positive correlation between parents' childhood peer victimization and their child's peer victimization found in our study supports previous research and could be due to genetic or environmental influences, however this was not further examined in the current study.

The moderating role of past victimization

Addressing our second research question, we found that parents' past victimization experiences moderated the relation between child peer victimization and parent-reported child depression. Specifically, parents who reported high levels of childhood peer victimization reported higher levels of depression in their victimized children than parents with lower levels of childhood victimization. Although this is the first study to examine this relation specifically, these findings are congruent with previous research. For example, being victimized in childhood is associated with increased symptoms of depression in adulthood (McDougall & Vaillancourt, 2015), and parents who are depressed are often found to report more symptoms of depression in their children than non-depressed parents (De Los Reyes & Kazdin, 2005). Therefore, it could be that an unexamined variable (i.e. parent depression) is mediating this relation between parent victimization experiences and their reports of child depression in our study.

As predicted, parents' past victimization did not moderate the relation between child victimization and depression when children's reports of depression symptoms were used. These results are in line with findings by Moretti et al. (1985), in which parent depression correlated with their perceptions of their children's depression, but not the children's self-reports of depression. This study indicates that parental psychopathology may bias their reports of their child's psychopathology; however the study by Moretti and colleagues did not examine parents' past victimization as a variable that may be influencing this relation. Although there is an extensive body of research on the effects of parental depression on discordance between parent and child reports of children's mental health (De Los Reyes & Kazdin, 2005), no prior studies to our knowledge examined parents' childhood bullying experiences as an influencing factor.

Although we are unable to draw clear conclusions from our findings regarding why parents' history of being bullied influenced their reports of their victimized children's depression symptoms but not the child's reports of their own symptoms of depression, we can speculate on a number of possible explanations. As discussed in a study by Grills and Ollendick (2002) on parental psychopathology and parent-child reporting discrepancies, it is difficult to say with certainty whether parents with psychopathology are projecting their own symptoms onto their child or whether they are in fact more sensitive to their children's symptoms. This may be true for parents' with a history of peer victimization in childhood as well.

First, it is possible that parents are biased based on their recollections of their own experiences. For example, if the parent recalls peer victimization as a traumatizing event that caused them to feel depressed, they may be assuming that their child would have the same response to being bullied. Although not related to peer victimization, Hiebert-Murphy (1998) found that maternal history of sexual abuse in childhood and adolescence affected their emotional distress upon learning of their own child's sexual abuse. The author speculates that mothers "experience trauma when they learn about their child's abuse because of the potential to re-experience their own abuse" (p. 431). Additionally, the author argues the possibility that "the greater distress shown by mothers with histories of sexual abuse is a reflection of the long-term effects of child sexual abuse" (p. 431). This could explain why the victimized parents in our sample reported higher depression symptoms in their victimized children. They may be recalling the symptoms of depression they experienced from childhood peer victimization and assuming their victimized children are experiencing the same emotions. In a study by Moretti et al. (1985), in which parents' depression was related to their perceptions of depression in their children, the authors speculate that "perhaps depressed parents project their feelings of dysphoria onto their children and thus are biased in their evaluations" (p. 302).

Second, it is possible that victimized children are in fact showing more symptoms of depression and that parents with a history of peer victimization are better able to identify these symptoms. The lack of a significant relation between child victimization, parent victimization, and child self-reported depression symptoms found our study could potentially be due to the adolescents under-reporting their symptoms of depression. De Los Reyes and Kazdin (2005) report that discrepancies among parent and child informants can sometimes be accounted for by the child's desire to present him-/herself in a more positive light (i.e., social desirability bias).

Although this is a possibility, there is not much empirical evidence supporting social desirability bias influencing child reports of depression. Instead, previous researchers have found that in adolescence, using self-reports for internalizing issues tend to be more accurate than parent reports (Lewis et al., 2014) since teens have the cognitive capabilities to report on these issues and they often do not share their thoughts and feelings with their parents as much (Harris, 1995). The significant positive correlations found in our study between child peer victimization and parent-reported (.29) and child self-reported (.50) depression and between parent reports and child self-reports of depression symptoms (.46) indicate that parents are fairly accurate reporters of their victimized children's depression. This lends support to the conclusion that perhaps victimized parents are more sensitive to their bullied children's symptoms of depression and may in fact be more accurate reporters than non-victimized parents.

In terms of the implications of parents' history of childhood peer victimization in research, the current findings indicate that parents' prior victimization influences their reports of their children's victimization experiences, specifically their depression symptoms. However, we are unable to draw clear conclusions as to the cause of this finding. It is possible that victimized parents are exhibiting a bias and are falsely reporting depression symptoms in their victimized children based on their own childhood memories. It is also possible that victimized parents are hypersensitive to the depression symptoms of their victimized children and are actually reporting these symptoms more accurately than non-victimized parents. Further research should be conducted in order to draw more explicit conclusions. Based on these preliminary findings, researchers should be cautious when using parent reports of child depression among bullied youth. Alternately parents' histories of peer victimization could be examined and controlled for in future studies on child and adolescent peer victimization and internalizing disorders that use parent reports in order to minimize potential reporter bias. Ours is the first study to our knowledge to specifically examine parents' past peer victimization as a potential source of bias in reports of their bullied children's depression symptoms.

Limitations and Recommendations for Future Research

The current study has a few notable limitations. First, the scale used to assess parents' retrospective accounts of peer victimization does not address frequency or duration of the bullying, which have been shown to influence the negative effects of such experiences. For example, those who experience chronic victimization throughout childhood have been shown to

have worse outcomes than those bullied at a single point in time or not at all (Bowes et al., 2013; Wolke et al., 2013).

Second, the current study also did not assess parents' symptoms of depression. Several studies have found a link between parental depression and discrepancies in parent-child reports of child mental health issues (De Los Reyes & Kazdin, 2005). Therefore, it is possible that the relation we found between parental victimization and reports of depression symptoms in their children could actually be explained by parental depression, which we did not examine. However, it is likely that parental depression would simply act as a mediator and that previous peer victimization would still influence the relation.

Third, our study assessed child victimization using only child reports. Although prior studies have found that adolescents generally tend to provide accurate reports of their victimization experiences (Shakoor et al., 2011), for the purpose of our study, using only child reports may have implications. For example, parent/child concordance about peer victimization experiences is generally low, especially for less intense cases of victimization (Holt, Kaufman-Kandor, & Finkelhor, 2009). Demaray, Malecki, Secord, and Lyell (2013) found that parents reported lower levels of victimization in their children than the children themselves. Therefore, parents may not always be aware when their child or adolescent is being bullied, which could impact their perception of depression symptoms in their children. Future studies should examine the relation between child peer victimization, parental history of peer victimization, and child depression using both parent and child reports of victimization and depression.

Fourth, our independent samples t-tests revealed that parents in our study reported lower scores on child depression symptoms and on personal histories of peer victimization than those who were excluded (i.e. those who completed an interview at Time 6 but whose children did not). This is an important limitation to note because prior studies have shown that high-risk participants, such as those with psychopathology, are less likely to participate in studies and have higher attrition rates when they do (Fröjd, Kaltiala-Heino, & Marttunen, 2010; Wolke et al., 2009). Therefore, reports of child depression symptoms in our study may be underrepresented since those youth experiencing higher rates of depression symptoms may not have participated and their parents were consequently excluded from the analyses. Similarly, it appears that youth whose parents experienced higher rates of past peer victimization were also less likely to participate in the study, which may have also influenced our regression analyses.

Finally, although the data were drawn from a longitudinal study, variables of interest in the current study were only examined at one time point. Future studies could examine the data longitudinally in order to look at different pathways from child victimization to child depression based on whether parents experienced childhood peer victimization. Given that there is a link between maternal depression and an ability to help their children's cope with stressors, such as peer victimization (Grimbos, et al., 2013; Monti, et al., 2013), it would be interesting to examine the trajectories from peer victimization to depression and whether parents without a history of peer victimization are better able to help their children cope and be resilient in the face of peer victimization. Alternately, it may be that parents who also experienced peer victimization may be able to relate to their bullied children more than non-victimized parents, which the child may find comforting.

Implications

As parents are often used as reporters on their children's experiences and mental health issues, it is important to understand the different factors that may bias parents' reports. From a research perspective, examining parents' own past experience with peer victimization may provide insight as to whether these experiences influence their current views toward their children's victimization. This can help researchers determine whether parent reports are accurate depictions of their victimized children's depression symptoms even if the parents themselves were bullied in childhood.

From a counselling perspective, the findings from the current study have the potential to assist clinicians and school officials determine where to direct their efforts. Since the study provides support for the influence of parents' prior victimization on their reports of their children's victimization experiences, bullying prevention efforts that include parents should consider their histories. Further research could help clarify if this involves providing additional support for previously victimized parents to cope with their bullied children. If they are falsely assuming their victimized child is depressed, this may act as a self-fulfilling prophecy, in which parents may project their own feelings of depression and inflate the harmful effects of peer victimization for their child. Rather, previously victimized parents may actually be better at recognizing the negative effects of peer victimization (e.g. depression), relating to their children's experiences, and providing helpful coping strategies. If this is the case, efforts should

be directed toward non-victimized parents to help them be better able to recognize the negative symptoms.

Conclusion

In conclusion, the results of the current study suggest that parents' own childhood victimization experiences continue to affect them all the way into adulthood, specifically in how they perceive their victimized children's mental health. Victimized parents reported higher rates of depression symptoms in their bullied children, even though the child's reports of depression symptoms did not vary based on their parents' prior victimization. This study was exploratory in nature and provides support for the need to further examine this relation to determine a potential cause. Future research on child and adolescent bullying should consider the possible bias in using parent reports when assessing child's peer victimization and mental health, based on whether or not the parents have a history of peer victimization themselves. Clinicians and school officials should also be wary about whether victimized parents are well-equipped to provide support to their victimized children or whether the long-term effects and painful recollections of their own experiences may be affecting their cognitions.

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Table 1

Descriptive Statistics

	M	*SD*	Min.	Max.
Child peer victimization	.41	.57	.00	4.0
Parent past peer victimization	.45	.31	.00	1.0
Parent-reported child depression	.21	.37	.00	2.0
Child self-reported depression	5.69	6.23	.00	28.0

Table 2
Bivariate Correlations

	1	2	3	4
1. Child peer victimization	1			
2. Parent past peer victimization	.14**	1		
3. Parent-reported child depression	.29**	.22**	1	
4. Child self-reported depression	.50**	.15**	.46**	1

Note. ** = $p < .01$

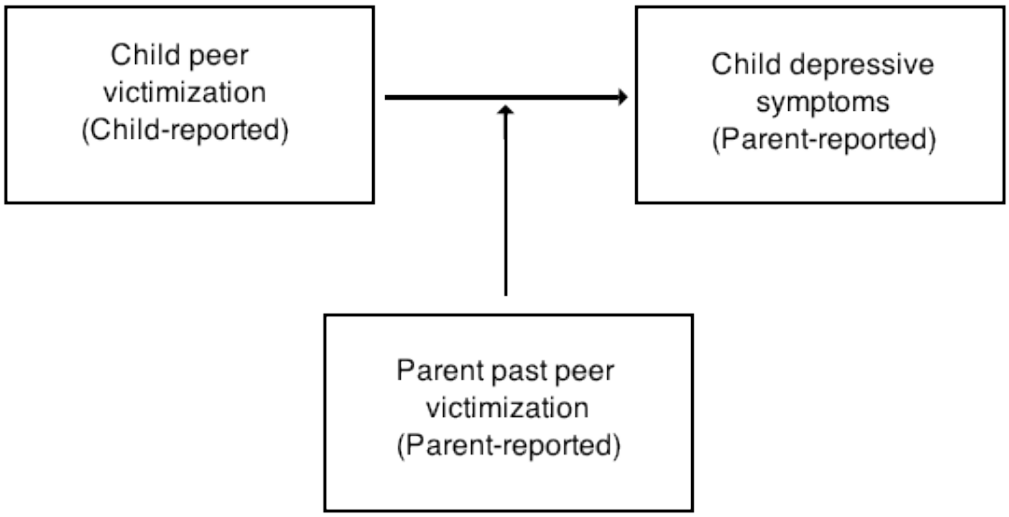

Figure 1a. Moderation using parent reports of child depression symptoms as the outcome variable.

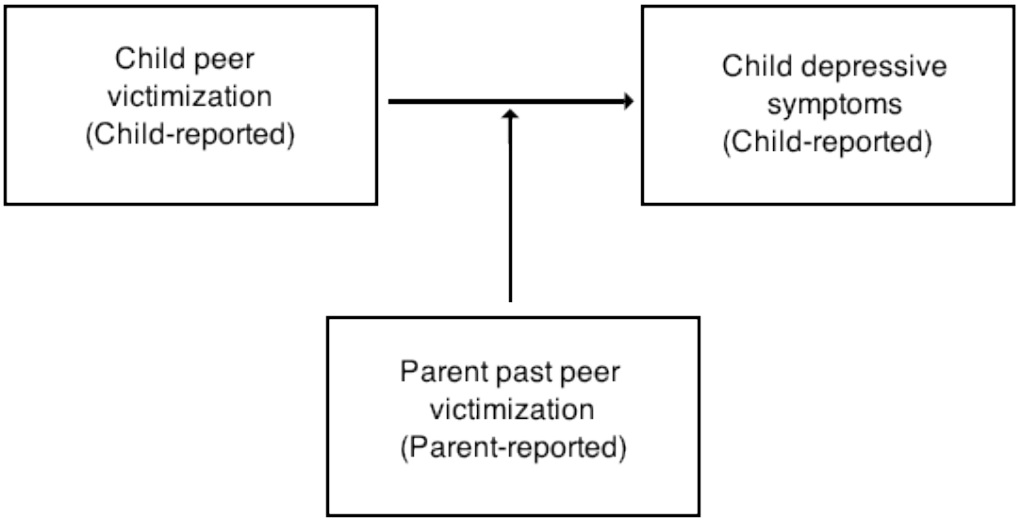

Figure 1b. Moderation using child self-reports of depression symptoms as the outcome variable.

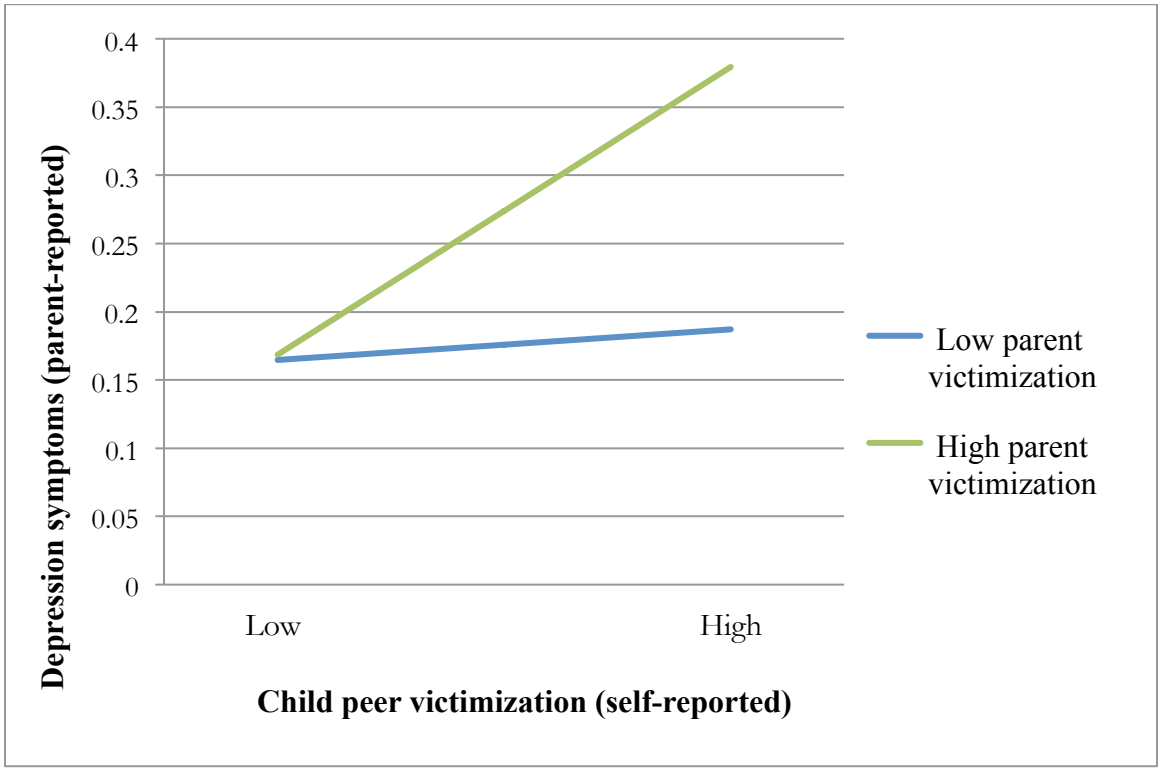

Figure 2. The relation between child peer victimization and parent-reported child depression symptoms at low and high levels of the moderator (parent history of peer victimization).

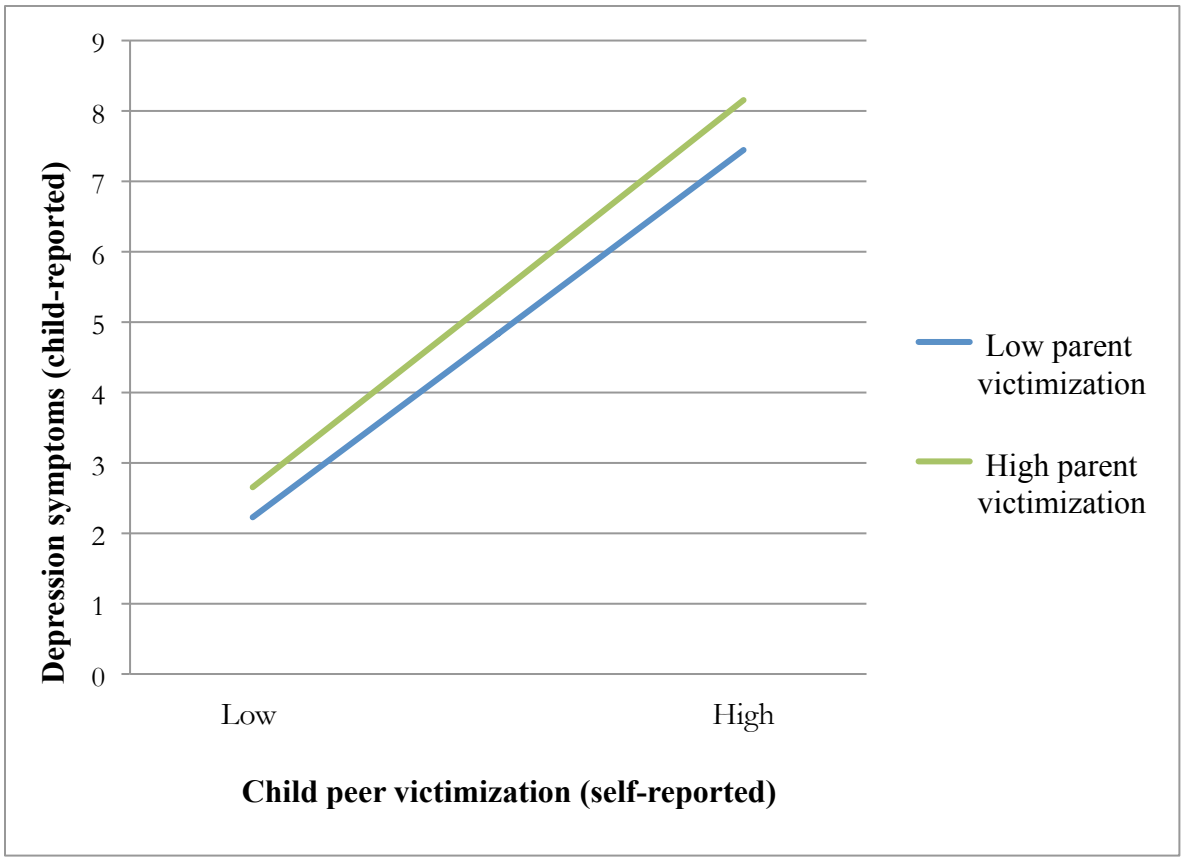

Figure 3. The relation between child peer victimization and child self-reported depression symptoms at low and high levels of the moderator (parent history of peer victimization).