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The Contribution of Social Support to Children and Adolescents’ Self-Perception: The Mediating Role of Bullying Victimization

Faye Mishna  
Factor-Inwentash Faculty of Social Work  
Mona Khoury-Kassabri  
School of Social Work and Social Welfare  
Kaitlin Schwan  
Factor-Inwentash Faculty of Social Work  
Judith Wiener  
School and Clinical Child Psychology  
Wendy Craig  
Department of Psychology, Queen’s University  
Tanya Beran  
Department of Community Health Sciences  
Debra Pepler  
York University  
Joanne Daciuk  
Factor-Inwentash Faculty of Social Work

Dr. Faye Mishna  
Factor-Inwentash Faculty of Social Work  
Margaret & Wallace McCain Family Chair in Child & Family  
University of Toronto  
f.mishna@utoronto.ca  
246 Bloor Street West  
Toronto, Ontario  
M5A 1V4  
(416) 946-5494

Dr. Mona Khoury-Kassabri  
School of Social Work and Social Welfare  
The Hebrew University of Jerusalem  
Mount Scopus, Jerusalem 91905  
Israel  
Tel. 972-2-5881807  
Fax 972-2-5883927  
mona.khoury@mail.huji.ac.il

Kaitlin Schwan  
PhD Candidate
Factor-Inwentash Faculty of Social Work
University of Toronto
246 Bloor Street West
Toronto ON M5S 1V4
(416) 909-1258
kaitlin.schwan@mail.utoronto.ca

Dr. Judith Wiener
Professor, School and Clinical Child Psychology
Applied Psychology & Human Development
OISE/University of Toronto
252 Bloor Street West
Toronto, ON M5S 1V6

Dr. Wendy Craig
Department of Psychology, Queen’s University
Kingston ON K7L 3N6
wendy.craig@queensu.ca

Dr. Tanya Beran
Department of Community Health Sciences
Cumming School of Medicine
University of Calgary
3330 Hospital Dr. N.W.
Calgary, AB T2N 4N1
tnaberan@ucalgary.ca
(403) 220-5667

Dr. Debra Pepler
York University
Department of Psychology - 217 York Lanes, 4700 Keele St.
Toronto ON M3J 1P3
pepler@yorku.ca

Joanne Daciuk
Research Manager
Factor-Inwentash Faculty of Social Work
University of Toronto
246 Bloor Street West
Toronto ON M5S 1V4
(416) 978-5720
joanne.daciuk@utoronto.ca

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Introduction

The relationship between bullying and self-perception among children and youth has become an important area of study, propelled in part by societal concern and media attention about the effects associated with bullying victimization (Espelage & Swearer, 2011). The proliferation of information and communication technology (ICT) and its increasingly central role in the lives of children and youth has changed the landscape of bullying (Cassidy, Jackson, & Brown, 2009). Victims of bullying tend to experience lower global self-esteem (Olweus, 1993) and have more negative social self-concepts (Andreou, 2000; Boulton, Smith, & Cowie, 2010). Social support can operate as a protective factor against bullying victimization (Demaray & Malecki, 2003; Haynie, Nansel, Eitel, Crump, Saylor, Yu & Simons-Morton, 2001), the effects of bullying involvement (Conners-Burrow, Johnson, Whiteside-Mansell, Mckelvey, & Gargus, 2009), and bullying perpetration (Shetgiri, Lin, Avila, & Flores, 2012). Very little research, however, has explored the associations of social support, bullying victimization, and self-perception among children and youth, and how these associations may differ for traditional and cyberbullying victimization.

The purpose of this article is to report on a study that explores the linkages among self-perception, perceptions of social support, and bullying victimization (traditional and cyber), particularly how bullying victimization mediates the association of social support and self-perception (Figure 1). We employ Harter’s model of self-esteem (1999; 2012), which offers a theoretical basis for exploring these associations,¹ and explains how and why self-perception is multidimensional (i.e., multiple discrete domains – including scholastic competence, social acceptance, athletic competence, physical appearance, and behavioural conduct),

¹ Consistent with Harter (2012, p. 24), we utilize the terms “global self-esteem” and “global self-worth” interchangeably.
developmentally driven, and fundamentally linked to social support (Harter, 1999; Harter & Marold, 1993; Harter, Marold, & Whitesell, 1996). While Harter’s model highlights the inextricability of social support to domains of self-perception and global self-esteem, how bullying or cyberbullying victimization mediates this association is less clear. Understanding how perceptions of social support are associated with self-perception, and whether and how bullying and cyberbullying victimization mediates this association, may assist in informing interventions.

**Social Support and Self-Perception**

Research has demonstrated the importance of social support during childhood and adolescence for achieving important developmental outcomes and wellbeing (Davidson & Demaray, 2007). Social support, understood here as the “perceived support and regard which significant others manifest towards the self” (Harter, 2012, p. 1), predicts many positive outcomes, including body satisfaction (Barker & Galambos, 2003), lowered depression (Colarossi & Eccles, 2003), better school adjustment and academic achievement (Danielsen, Samdal, Hetland, & Wold, 2009), and higher self-esteem (Sakiz, Pape & Hoy, 2012). In contrast, lower perceived social support is consistently associated with emotional difficulties (Herman-Stahl & Petersen, 1996).

In recent years, there has been considerable interest in exploring the relationship between social support and self-perception among children and youth. Self-perception refers to children’s “domain-specific judgments of their competence, as well as a global perception of their worth or esteem as a person” (Harter, 1985a, p. 5).2 As identified by Marshall, Parker, Ciarrochi, and

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2 Our utilization of the term “self-perception,” encompasses the domains commonly referred to as “self-competence,” “self-worth,” “self-concept,” and “self-esteem”. The interchangeable use of these terms and the various measurement tools utilized may disadvantage the contributions of many studies (Demaray, Malecki, Rueger, Brown, & Summers, 2009; Harter, 1999).
Heaven (2014), determining whether self-perception is a consequence or an antecedent of social support in childhood and adolescence is a valuable yet understudied area of research. In particular, the lack of longitudinal studies in this area, with many studies focused on relationship quality rather than social support, has impeded insight into the temporal ordering of these constructs (Marshall et al., 2014).

Despite the lack of research that explores the causal relationship between social support and self-perception among children and youth, a significant proportion of existing studies indicate that social support may have a causal impact on self-perception. Research in this area has suggested that both perceived social support (Goodwin, Costa, & Adonu, 2004) and the quality of social relationships (Dekovic & Meeus, 1997; Laible, Carlo, & Roesch, 2004; Ryan, Stiller, & Lynch, 1994) are associated with higher self-perception among children and youth. Harter and colleagues (1999; Harter & Marold, 1993) similarly found that peer approval is linked to greater feelings of competence in important domains of self-perception, including physical appearance, peer likability, and athletic competence. The longitudinal (e.g., Denissen, Schmitt, Penke, & Van Aken, 2008) and experimental (e.g., Leary, Haupt, Strausser, & Chokel, 1998; Leary, Tambor, Terdal, & Downs, 1995) studies that do exist suggest that social relationships influence self-esteem insofar as research indicates “people are not motivated to maintain their self-esteem per se; rather, they are motivated to increase their value and acceptance in relation to others” (Marshall et al., 2014, p. 1277). Asendorpf and Van Aken’s (2003) study on the relationship between self-esteem and relationship quality among 230 adolescents, measuring each youth at the age of 12 and again at 15, similarly found that relationship quality predicted self-esteem but not vice versa. Based on this literature we hypothesize that adolescent self-perception is
predicted by social support and the study aims to expand this literature by exploring whether this association is mediated by children victimized by traditional or cyberbullying.

**Bullying, Social Support, and Self-Perception**

Bullying is defined here as a form of aggression that occurs in the context of a relationship, involves a power imbalance, is repetitive, and can include physical, verbal, psychological, or relational acts (Craig & Pepler, 2007; Olweus, 1991). Following Smith, del Barrio, and Tokunuga (2013), we define cyberbullying as comprised of three elements: intent to harm, a specific target, and a power imbalance. What makes cyber bullying distinct is the use of electronic communication technology as the means through which to threaten, harass embarrass, sexually harass or socially exclude (Hinduja & Patchin, 2009; Patchin & Hinduja, 2006; Schrock & Boyd, 2008; Williams & Guerra, 2007). Traditional and cyber bullying are common problems facing the schools and are prevalent among students. For instance, in a study 15,686 student in the US 41.1% of the participants reported having been traditionally victimized by others (Nansel et al., 2001). With respect to cyberbullying, in their study of 4,441 adolescents from 33 schools in the US, Mitchell et al. (2015) found that 17% of the participants had been victimized by cyberbullying.

Given the significant number of children and youth affected by bullying and cyberbullying, and the considerable negative outcomes associated with bullying and cyberbullying involvement for children and youth (Beran & Li, 2005; Mishna & Van Wert, 2015; Ybarra & Mitchell, 2007), it is important to understand whether and how bullying and cyberbullying may impact the association between social support and self-perception. With the dramatic rise of ICT usage among children and youth in recent years (Hinduja & Patchin, 2009; Palfrey & Glasser, 2008),
understanding how traditional and cyberbullying may differ with respect to this association is essential.

Existing research has demonstrated that social support operates as a protective factor against bullying and cyberbullying victimization (Demaray & Malecki, 2003; Haynie et al., 2001; Wang, Iannotti, & Nansel, 2009). Studies have found that parental support may protect youth from bullying and cyberbullying victimization (Haynie et al., 2001; Wang et al., 2009), bullying and cyberbullying perpetration (Shetgiri et al., 2012; Flores, Paradeisioti, Hadjimarcuo, Mappouras, Kalakouta, Avaghanou, & Siomos, 2013), and the negative consequences of bullying and cyberbullying involvement (Conners-Burrow et al., 2009; Mitchell, Ybarra, & Finkelhor, 2007). Similarly, peer acceptance is a protective factor against traditional bullying victimization (Demaray & Malecki, 2003), and existing research has demonstrated evidence of an association between positive friendships and less traditional and cyber victimization (e.g., Bollmer, Milich, Harris, & Maras, 2005; Schmidt & Bagwell, 2007). Supportive relationships with teachers are also associated with lower levels of traditional peer victimization (Khoury-Kassabri, Benbenishty, Astor, & Zeira, 2004).

Research suggests that bullying victimization is negatively associated with self-perception among children and youth, especially in domains of developmental importance (Andreou, 2000; Boulton, Smith, & Cowie, 2010; Fox & Farrow, 2009). Bullying and cyberbullying victimization has been linked to psychosocial problems including depression, anxiety, and suicidality (Kubiszewski, Fontaine, Hure, & Rusch, 2013). Hawker and Boulton’s (2000) meta-analysis found that bullying victimization was negatively associated with social self-concept and global self-esteem, and strongly associated with depression (Wolke, Skuse, & Reilly, 2006).
The negative association between bullying victimization and self-perception during middle childhood and adolescence is of particular concern due to the importance of peer approval during this time (Brown & Lohr, 1987; Dijkstra, Cillessen, & Borch, 2013; Rubin, Bukowski, & Bowker, 2015) and the significant influence peers have on adolescents’ meta and self-perceptions (Bellmore & Cillessen, 2006).

There is limited research that investigates the differential associations between traditional and cyberbullying involvement, or both, with respect to self-perception. Bonanno and Hymel (2013) found that cyberbullying involvement uniquely contributes to depression and suicidal ideation after controlling for traditional bullying involvement. Other studies have found that the physical and psychological consequences linked to traditional bullying are also associated with cyberbullying, particularly for children and youth involved in both (Gradinger, Strohmeier, & Spiel, 2009). Nonetheless, it is unclear whether being a victim of cyberbullying has the same impact on self-perception as being a victim of traditional bullying (Espelage, Holt, & Henkel, 2003; Mishna, Khoury-Kassabri, Gadalla, & Daciuk, 2012). Understanding whether and how cyber and traditional bullying may differentially or jointly impact children and youth’s self-perception is important to investigate.

While extensive research has demonstrated that bullying is linked to both social support and self-perception, research that examines all three constructs together is very limited. Beyond the direct relationships among social support, bullying, and self-perception, research is lacking on whether bullying mediates the relationship between social support and self-perception, and on the differential mediating impact of cyberbullying victimization compared to traditional bullying with respect to this association. Although some studies have assessed the mediating impact of social support on the outcomes of bullying and cyberbullying involvement (Conners-Burrow et
al., 2009; Fanti, Demetriou, & Hawa, 2012; Flaspohler, Elfstrom, Vanderzee, Sink, & Birchmeier, 2009), few have examined the relationships among social support, bullying, and self-perception/self-concept. To the authors’ knowledge, only one paper exists that examines the relationships among these variables (Jenkins & Demaray, 2012), which found that there was a significant negative relationship between social support and peer victimization, as well as a significant negative relationship between self-concept and peer victimization. The current paper takes the next step in determining how and whether traditional and cyberbullying victimization may mediate the association between perceived social support and self-perception. Such research may help inform bullying interventions designed to reinforce social support among children and youth.

Hypotheses

1. Cyber and traditional victimization will be negatively correlated with adolescents’ self-perception.
2. Perceived social support will be negatively correlated with cyber and traditional victimization.
3. Cyber victimization will mediate the association between social support and adolescents’ self-perception (Figure 1, indirect effect 1).
4. Traditional victimization will mediate the association between social support and adolescents’ self-perception global self-worth (Figure 1, indirect effect 2).

Method

This manuscript reports on data collected during year one of a mixed-methods three-year study on cyberbullying among students in grades four, seven, and ten in a large Canadian city. The study uses a longitudinal, multi-informant design with a grounded theory approach. Ethics
approval was received from the University’s Research Ethics Board and the External Research Review Committee of the School Board.

Participants

Participants were grade four, seven and ten students, as well as their parents and teachers. A stratified random sampling design was used to select participant schools in one of the largest school boards in North America, situated in Toronto, Canada. Schools were stratified into three categories of need (low, medium, and high) based on an index developed by the school board that ranked schools on external challenges to student achievement. This index was developed by the school board using census data associated with the postal code of students attending each school. Neighbourhood-level census data used to develop the index included income and education levels, ratio of households receiving social assistance, and ratio of single parent families (Toronto District School Board, 2014). The stratification of the sample based on this index ensured representation of ethnocultural and socioeconomic diversity – factors that potentially impact access to ICTs and experiences of cyberbullying (Roberts & Foehr, 2008).

This manuscript focuses on the 402 students in grades four (39.8%) and seven (60.2%) because the tenth graders completed different questionnaires. The sample demographics are ethnically representative and resemble the population in gender distribution (59.7% girls in sample vs. 48% girls in population) and in terms of those whose primary language was not English (42.5% in sample vs. 44% in population) (Toronto District School Board, 2013).

Of the 62 schools invited to participate, 19 agreed, resulting in a school participation rate of 31%. The main reason principals gave for declining participation was an overload of research. Of the 3873 students asked to participate, 691 agreed. Twenty-two student participants withdrew, resulting in 669 student participants and a response rate of 17.3% during year one of the study.
We attribute this relatively low response rate to the active consent process. While some studies employing active consent have obtained response rates as high at 79% (Esbensen, Melde, Taylor & Peterson, 2008), others have found active consent to be an obstacle to participation in school-based studies and have reported response rates as low as 10% (MacGregor & McNamara, 1995).

**Measures**

This paper focuses on several quantitative measures completed by student participants in grades 4 and 7, specifically measures capturing demographics; experiences with traditional bullying and cyberbullying; self-perception; and social support.

**Socio-Demographic Characteristics**

The student demographic questionnaire captured individual and family characteristics such as age, gender, ethnicity, country of birth, academic achievement (scaled from “Mostly As” to “Mostly Ds”), disability, family composition, parental education, and parental vocation.

**Traditional and Cyberbullying Involvement**

To measure children’s experiences with bullying and cyberbullying, a questionnaire was developed building on the authors’ previous research and on the literature (Mishna, Cook, Gadalla, Daciuk, & Solomon, 2010; Mishna, Saini, & Solomon, 2009; Pepler, Connolly, & Craig, 1993; Olweus, 2012). Respondents read definitions of bullying and cyberbullying and were asked how frequently they had been bullied/cyberbullied in the last thirty days, on a Likert scale which included potential responses of “never,” “once or twice,” “3 or 4 times,” and “everyday.” Participants completed similar items related to perpetrating traditional bullying and cyberbullying.

**Self-Perception**
Subscales from the *Self-Perception Profile for Children* (SPPC) (Harter, 1985) were used to assess self-esteem and self-concept in the social domain. The Self-Perception Profile for Children contains six subscales tapping five specific domains (scholastic competence, social acceptance, athletic competence, physical appearance, behavioural conduct), and global self-worth. This scale has adequate internal consistency and a stable factor structure (Harter, 2012). Each subscale contains six items constituting a total of 36 items. *Scholastic Competence* ($\alpha = .806$), refers to a child’s perception of his/her competence or ability within the realm of scholastic performance, including items such as, “Some kids are pretty slow in finishing their school work BUT other kids can do their school work quickly”. *Social acceptance* ($\alpha = .765$), assesses the degree to which the child perceives to have friends, feels popular, and feels that most kids like them. It includes items such as, “Some kids find it hard to make friends BUT other kids find it’s pretty easy to make friends”. *Athletic Competence* ($\alpha = .840$), taps content relevant to sports and outdoor games, for example items such as, “Some kids wish they could be a lot better at sports BUT other kids feel they are good enough at sports”. *Physical Appearance* ($\alpha = .851$), taps the degree to which the child is happy with the way he/she looks, including items such as, “Some kids wish their body was different BUT other kids like their body the way it is”. *Behavioural Conduct* ($\alpha = .791$), taps the degree to which a child likes the way he or she behaves, does the right things, acts how one is supposed to, and avoids getting in trouble. It includes items such as, “Some kids often do not like the way they behave BUT other kids like the way they behave”. *Global Self-Worth* ($\alpha = .844$), taps the extent to which the child likes oneself as a person, is happy with the way one is leading his or her life, and is generally happy with the way one is. It includes items such as, “Some kids are often unhappy with themselves BUT other kids are pretty pleased with themselves”.


For each question the child is first asked to decide which child is most like him or her, and then asked whether this is only sort of true or really true for him or her. For each subscale a summative measure was created based on the mean of the six items. Higher scores indicate more competence or adequate self-perception.

Social Support

The Social Support Scale for Children (Harter, 1985b) assesses children’s support system. This 24-item scale assesses the perceived support and regard by others for the child and includes four sources of social support: parents; teachers; classmates; and close friends. The internal consistencies of the four subscales range from 0.72 to 0.88 (Harter, 2012). A principal components factor analysis showed that all four support scales loaded on a single factor. A composite social support measures was created by computing their mean score (α = .79).

Data Analysis

Using IBM SPSS Statistics 21, we examined the descriptive data related to students’ self-perception and involvement in traditional and cyberbullying. Second, bivariate analyses were conducted to test the relationships among students’ self-perception and the mediating and independent variables using Pearson product-moment correlations. The correlations among all other variables were also tested (Table 1). Third, to test the significance of the indirect effect of social support on children’s self-perception measures through cyber and traditional victimization, we performed a PROCESS analysis using IBM SPSS (PROCESS-Model #4; Preacher & Hayes, 2004). This procedure enables us to empirically estimate and test three pathways of influence through which social support affects self-perception (Figure 1: one direct effect from social support to self-perception and the other indirect effects through cyber victimization (indirect effect 1), or through traditional victimization (indirect effect 2)). Missing data in PROCESS is
handled with listwise procedure. The 95% confidence interval obtained with 5000 bootstrap resamples was used (Preacher & Hayes, 2008). Once a bootstrap sample of the original data is generated, the regression coefficients for the statistical model are estimated. This procedure yields an upper and lower bound - confidence interval - on the likely value of the indirect effect (Hayes, 2013). If the confidence interval straddles zero, then the mediation of social support effect on self-perception through bullying victimization is not significant (Preacher & Hayes, 2008). If the confidence interval does not straddle zero, this leads to the inference that the indirect effect is not zero and that there is a significant mediation. Each self-perception measure was analyzed in relation to the covariates of age, gender, academic achievement and involvement in traditional bullying as perpetrator.

Results

Students ranged in age from 8 to 13 years, with a mean of 11.02 years ($SD = 1.52$). Most of the students reported receiving school grades that were As or Bs (35.8% and 59.4% respectively). Only 4.9% of the students reported receiving Ds. The majority of their parents have completed a university degree (mother 68.3%; fathers 74.6%). Only 14.9% of the mothers and 10.9% of the fathers have a high school education, as reported by their children.

Descriptive Statistics

Almost one third of the students (31.7%) reported having been traditionally bullied at least once during the last month, while 12.3% reported having been bullied at least three times. During the last month, 13.42% of students reported having been cyberbullied at least once. Almost one in ten students reported bullying others (9.5%), whereas 3.4% reported cyberbullying others at least once during the last month. Because of the low frequency, cyberbullying perpetration was
not included in the following analysis. Students’ reports of their social support were relatively high. On a scale ranging from 1 to 4, the mean was 3.36 (SD = 0.48).

On a scale ranging from 1 to 4, the means of children’s reports on the six self-perception measures were similar and range from 2.81 (SD = 0.76) for athletic competence and 3.23 (SD = 0.68) for global self-worth. The mean of scholastic competence was 2.91 (SD = 0.69); social acceptance was 3.00 (SD = 0.66); physical appearance 2.96 (SD = 0.76); and behavioural conduct was 3.20 (SD = 0.61).

**Bivariate Analyses**

We examined the relationship among age, gender, academic achievement, parents’ education, and social support with self-perception measures and bullying involvement. As a result of the large sample size, small correlations are significant; therefore, only correlations of at least low-moderate size of 0.30 are identified here.

The older the children, the lower their reported self-perceptions of physical appearance ($r$ (402) = -0.30, $p < .01$) (Table 1). Children’s reported academic achievement was significantly and positively associated with scholastic competence ($r$ (402) = 0.43, $p < .01$) and behavioural conduct ($r$ (402) = 0.30, $p < .01$). Furthermore, children with stronger support systems have higher self-perceptions generally. These associations range from $r$ (402) = 0.33, $p < 01$ for athletic competence to $r$ (402) = 0.56, $p < .01$ for global self-worth. For most associations between participant involvement in bullying (traditional and cyber) and students’ perceived self-perception the links were negative, but very weak.

Our findings concerning the association between perceptions of social support and bullying victimization are consistent with the literature and our prediction. Children’s reported support
system was negatively but weakly associated with involvement in traditional and cyber victimization and traditional perpetration.

**Mediation Model**

The following results were obtained from testing the mediation hypotheses (hypotheses 3 and 4). Two indirect effects were tested in this model in addition to the direct effect of social support on the self-perception measures (Figure 1). Moreover, the model explores the relationships between social support and cyber and traditional victimization (mediating variables). Social support was significantly and negatively associated with the mediating factors: cyber victimization ($B = -0.22, SE = 0.06, p < .001$) and traditional victimization ($B = -0.31, SE = 0.08, p < .001$). The greater the support the students reported, the lower their exposure to traditional and cyber bullying victimization.

We explored whether the association between social support and self-perception (indirect effect 1) is mediated by cyberbullying victimization. Contrary to hypothesis 3 (Figure 1, indirect effect 1), all bootstrap confidence intervals straddle zero, meaning that these are nonsignificant indirect effects (Table 2).

The second indirect effect tested whether the association between social support and self-perception is mediated by traditional victimization. Hypothesis 4 (Figure 1, indirect effect 2) was partially supported. This effect was significant for three of the six self-perception measures: social acceptance, physical appearance, and global self-worth (Table 2).

The mediation analysis confirmed the mediating role of traditional victimization in the relationship between social support and social acceptance ($B = 0.05, SE = 0.02, CI = .02$ to $0.10$). Similar trends were found for self-perceptions of physical appearance ($B = 0.03, SE = 0.02, CI = .02$ to $0.10$).
.01 to .09, respectively) and global self-worth ($B = 0.03, SE = 0.02, CI = .01 to .08$) (Table 2, Table 3).

In summary, the mediation model showed two main findings: First, higher levels of social support are related to lower levels of reported traditional victimization, which in turn is linked to higher levels of students’ reported self-perceptions of social acceptance, physical appearance, and global self-worth. Second, as this was a partial mediation, the direct effect of social support on these measures remained positive and significant; the greater the social support the higher children’s self-perception of social acceptance, physical appearance, and global self-worth.

**Discussion**

The current study is unique in examining the associations among bullying victimization, social support, and self-perception, and hypothesizing that the effects of social support on self-perception would be mediated by cyber and traditional victimization. Our bivariate analyses indicate that social support is associated with all self-perception domains, consistent with previous research (Goodwin, Costa, & Adonu, 2004; Laible, Carlo, & Roesch, 2004).

Importantly, with the exception of behavioural conduct, traditional victimization was found to be associated with all self-perception domains. This finding is consistent with previous studies showing that children who experience traditional victimization are at higher risk of internalizing problems such as, anxiety/depression, low global self-worth, and low social acceptance (Rigby, 2000; Undheim, & Sund, 2010), while children who perpetrate bullying are more likely to display externalizing problem behaviors such as behavioral misconduct, delinquency and alcohol use (Ivarsson, Broberg, Arvidsson, & Gillberg, 2005; Nansel et al., 2001; Undheim, & Sund, 2010).
The results show, however, that cyber victimization was associated with only three self-perception domains (social acceptance, physical appearance, and global self-worth). This finding suggests that cyberbullying victimization might be related to social factors such as acceptance and less to behavioral factors such as behavioral conduct and athletic or scholastic competence. In future research, it is important to examine these associations and further explore this conjecture.

Due to the important associations among these variables, especially the role social support plays in predicting victimization and self-perception, an objective of this study was to increase understanding of the mechanism that underlies the relationship between social support, victimization, and self-perception. We identified that traditional victimization mediates the association between social support and self-perception for three self-perception measures: social acceptance, physical appearance, and global self-worth. This suggests that when children and youth report high levels of social support, they are likely to experience lower levels of traditional bullying victimization, and as a result have higher levels of self-perception in these domains (social acceptance, physical appearance, and global self-worth).

These findings have several implications. First, as both bivariate and mediation model analysis indicated that direct and indirect correlations of social support and bullying victimization differed with respect to which self-perception measures they were linked, the results support the need for researchers to continue to disaggregate the dimensions of self-perception in order to more accurately identify how distinct dimensions of self-perception can be fostered. This also suggests that traditional and cyber victimization may affect different dimensions of self-perception. Second, these findings once again emphasize the central role of traditional victimization compared to cyber victimization with respect to self-perception for
children and youth. Third, the results show that in addition to the direct effect of social support on children and youth’s self-perceptions, social support also affects self-perception through its significant impact on the level of victimization a child or adolescent experiences.

Contrary to our expectations, cyber victimization was not found to mediate the relationship between social support and self-perception. The low occurrence of cyberbullying among our sample, while consistent with other research (Olweus, 2012), was a barrier to closely examining the associations between cyber victimization, social support, and self-perception. As research has shown the frequency with which children and adolescents shift between victimizing, perpetrating, and witnessing cyberbullying (Schneider, O'Donnell, Stueve, & Coulter, 2012; Smith, 2012), this fluidity of roles may result in children and youth underreporting cyberbullying involvement because they do not identify it as such. Further research is needed in order to understand whether and how cyber victimization may play a mediating role between social support and self-perception.

Limitations to the study include the relatively low response rate and that parents’ education is higher than the population, which suggests the need for caution in generalizing the findings. We also did not test for how sources of social support may be differentially associated with bullying victimization and self-perception among children and youth (Demaray & Malecki, 2003; Haynie et al., 2001).

Longitudinal, rigorous research is needed to further test whether and how social support predicts self-perception among children and adolescents, as it will contribute to understanding the causal relationships among social support, victimization and self-perception. Both bullying victimization (Kumpulainen & Räsänen, 2000) and poor self-perception (Orth, Robins, & Widaman, 2012) can have lifelong effects. Pepler and colleagues (2002) found that the unequal
power dynamics and aggressive techniques learned in childhood bullying can transfer into adult relationships, and may extend to sexual harassment, dating aggression, child abuse, and intimate partner violence. Beyond the long-term impacts of victimization, bullying victimization can establish harmful relationship patterns.

The study’s results emphasize the importance of developing social support and relationship-based solutions to bullying among children and youth. Social support and relational strategies to address bullying are influential on both the development of positive self-perception (direct effect) and for the effects on traditional bullying victimization, which in turn leads in poor self-perception (indirect effect).

The study has important implications for practice and lends strong evidence to the necessity of understanding bullying as a relationship issue, thus requiring interventions targeted at improving relationships and social skills rather than primarily disciplinary measures (Pepler, 2006). This can be accomplished by developing strategies based on collaborative relationships among school personnel, the students, and their families with the aim of improving student social support systems.
References


(Eds.), *At the threshold: The developing adolescent* (pp. 352-387). Cambridge, MA: Harvard University Press.


Figure 1:

Indirect effect of social support on self-perception measures through traditional bullying and cyberbullying victimization
Table 1
Correlations among Study Variables (N=402)

<table>
<thead>
<tr>
<th>Variable</th>
<th>1</th>
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<td>1. Gender</td>
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<td>3. Academic achievement</td>
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<td>7. Traditional bullying</td>
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<td>8. Cyberbullying victimization</td>
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<td>10. Scholastic competence</td>
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</tbody>
</table>

Note: Significance levels: * p < .05, ** p < .01, *** p < .001.
13. Physical appearance
- .09 .29 0 0 9 6** .18 .13 .13 5** 2" 2"
9 5** 2** 7** 5**

14. Behavioural conduct
.14 -.29 .04 - .52 - - - .52 .43 .22 .49 1
7 7 7 7 3 .09 .08 .17 7 4 9 7

15. Global self-worth
- .12 .05 .01 .55 - - - .48 .55 .43 .73 .62 1
2 8** 3 1 5** .20 .17 .08 3* 9** 8** 1** 2"
2 0* 3 1 5" 1" 7** 4

* P < .05; **P < .001
Table 2
Indirect effects: Coefficient (B), Bootstrap SE and confidence interval

<table>
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<tr>
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<th>Indirect Effect 1</th>
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<th>Indirect Effect 2</th>
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</thead>
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<td>Boot-LLCI-ULCI</td>
<td>Effect (Boot SE)</td>
<td>Boot-LLCI-ULCI</td>
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<td>Scholastic Competence</td>
<td>-.005 (.017)</td>
<td>-.042 to .018</td>
<td>.002 (.015)</td>
<td>-.025 to .034</td>
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<tr>
<td>Social Acceptance</td>
<td>.008 (.014)</td>
<td>-.015 to .042</td>
<td>.047 (.021)</td>
<td>.015 to .100</td>
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<tr>
<td>Athletic Competence</td>
<td>-.014 (.016)</td>
<td>-.061 to .009</td>
<td>.022 (.020)</td>
<td>-.009 to .073</td>
</tr>
<tr>
<td>Physical Appearance</td>
<td>-.006 (.019)</td>
<td>-.056 to .025</td>
<td>.040 (.021)</td>
<td>.010 to .094</td>
</tr>
<tr>
<td>Behavioural Conduct</td>
<td>-.010 (.013)</td>
<td>-.045 to .008</td>
<td>-.003 (.012)</td>
<td>-.028 to .021</td>
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<tr>
<td>Global Self-Worth</td>
<td>.008 (.017)</td>
<td>-.015 to .058</td>
<td>.031 (.017)</td>
<td>.006 to .078</td>
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</table>
Table 3
Mediation model results: Coefficient (B) and SE for independent, mediators and covariate variables

<table>
<thead>
<tr>
<th></th>
<th>Cyberbullying victimization</th>
<th>Traditional bullying victimization</th>
<th>Support</th>
<th>Gender 0=M 1=F</th>
<th>Age</th>
<th>Academic Achievement</th>
<th>Traditional Bullying Perpetration</th>
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</thead>
<tbody>
<tr>
<td>Scholastic Support</td>
<td>.022 (.058)</td>
<td>-.007 (.044)</td>
<td>.500</td>
<td>-.232</td>
<td>.033</td>
<td>.433</td>
<td>-.226</td>
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<tr>
<td>Competence</td>
<td>.075 (.059)</td>
<td>-.173 (.042)</td>
<td>.622</td>
<td>-.038</td>
<td>.019</td>
<td>.055 (.052)</td>
<td>-.017 (.085)</td>
</tr>
<tr>
<td>Social Acceptance</td>
<td>-.035 (.056)</td>
<td>-.151 (.042)</td>
<td>.622</td>
<td>-.038</td>
<td>.019</td>
<td>.055 (.052)</td>
<td>-.017 (.085)</td>
</tr>
<tr>
<td>Behavioral Conduct</td>
<td>.046 (.050)</td>
<td>.009 (.038)</td>
<td>.620</td>
<td>.042</td>
<td>-.033</td>
<td>.219 (.047)**</td>
<td>-.229</td>
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<tr>
<td>Global Self-Worth</td>
<td>-.037 (.056)</td>
<td>-.099 (.042)*</td>
<td>.789</td>
<td>-.085</td>
<td>-.055</td>
<td>.058 (.051)</td>
<td>.012 (.084)</td>
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</tbody>
</table>
*P<.05 **p< .01 ***p<.001
Highlights

- Adolescents with social support systems are less victimized and have higher levels of self-perception.
- Traditional bullying victimization and cyberbullying victimization differ in their linkages with self-perception.
- Traditional bullying victimization is strongly associated with self-perception, whereas cyberbullying victimization is not.
- Traditional bullying victimization mediates the association between social support and self-perception.
- Interventions that bolster social support may buffer exposure to bullying victimization.