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Peer Victimization and School Disaffection: Exploring the Moderation Effect of Social Support and the Mediation Effect of Depression.

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Abstract

Background. Peer victimization is associated with increased internalizing problems and reduced school adjustment. Research into the main effect and the buffering effect of social support on these internalizing problems has produced inconsistent findings, and none has tested the buffering effect of social support on school adjustment. Moreover, recent studies have underlined the importance of taking various sources of social support into account.

Aims. The current study aims to test the relationships between peer victimization and school disaffection, the moderation effect of parental, peer and teacher social support and the mediation effect of depression.

Sample. Four hundred seventh and eighth graders participated in this study.

Method. Students filled out a questionnaire assessing peer victimization, depression, academic self-efficacy, school disaffection, and perceived social support from parents, peers and teachers.

Results. Peer victimization was negatively associated with self-efficacy and positively associated with school disaffection. Regression analyses showed a main negative effect of social support (especially teacher support) on depression and school disaffection and a positive effect on self-efficacy. No significant interactions emerged between victimization and social support or between sources of social support. Path analyses indicated that the effects of victimization on self-efficacy and school disaffection were fully mediated by depression, but that the effects of social support are partially independent of depression. Multigroup analyses indicated that these relationships were parallel among boys and girls.

Conclusions. The results of this study are consistent with the main effect model of social support. They also highlight the importance of teacher support for school adjustment.

Keywords: peer victimization, social support, self-efficacy, engagement, depression.

Peer victimization is a pervasive problem in most developed nations (Akiba, LeTendre, Baker & Goesling, 2002; Craig et al., 2009). Each year, about 34% of students between 11 and 15 years old are victims of a negative action (verbal, physical or social) from their peers at least once, according to the Health Behavior in School-aged Children international study (Craig & Hanel, 2004). Furthermore, about 16 % encounter repeated peer victimization (Due et al., 2005).

These victimizations are associated with a range of internalizing problems among children and adolescents: for example, depression, anxiety, negative affectivity, suicidal ideation, psychological distress, loneliness, somatization (Gini & Pozzoli, 2009; Hodges & Perry, 1999; Juvonen & Graham, 2001; Olweus, 1993; Rigby, 2003; Roland, 2002). Moreover, a growing number of prospective and longitudinal studies have indicated that peer victimization predicts change in internalizing problems over time, even when previous adjustment problems are taken into account (Arsenault et al., 2006; Bond, Carlin, Thomas, Rubin & Patton, 2001; Fekkes, Pijpers, Fredriks, Vogels & Verloove-Vanhorick, 2006; Reijntjes, Kamphuis, Prinzie, & Telch, 2010; Snyder et al., 2003). As the large majority of bullying and peer victimization occurs at school (Delfabbro et al., 2006), their potential impact on school adjustment is also a matter of concern. Several studies have found a negative association between peer victimization and some indicators of school adjustment such as absenteeism, achievement or engagement (Hanish & Guerra, 2002; Juvonen, Nishina & Graham, 2000).

Research into the buffering effect of social support on internalizing problems has produced inconsistent findings (Baldry, 2004; Rigby, 2000), and none has tested the buffering effect of social support on school adjustment. Moreover, recent studies have underlined the importance of taking various sources of social support into account (Chu, Saucier & Hafner,

2010). Another remaining question concerns the contribution of social support to school adjustment when internalizing problems are taken into account. Finally, the existence of gender differences in these relationships is still under question (Hoglund, 2007; Lopez & Dubois, 2005). The aim of the current study is to explore these questions in order to better understand the relationships between peer victimization, social support, internalizing problems, and school adjustment.

Peer Victimization and School Adjustment

Several studies have investigated the relationship between peer victimization and school adjustment, using a variety of indicators of this latter broad construct: achievement, academic self-efficacy, attendance, and school engagement. Their results are detailed below.

With regard to *achievement*, mixed findings emerged. On the one hand, small negative associations were reported between peer victimization and achievement among elementary school children (Graham, Bellmore & Mize, 2006; Iyer, Kochenderfer-Ladd, Eisenberg & Thompson, 2010; Juvonen et al., 2000; Nishina, Juvonen & Witkow, 2005; Schwartz, Gorman, Nakamoto & Toblin, 2005). On the other hand, null or non-significant associations were reported between peer victimization and achievement in kindergarten, in elementary school, and in middle school (Beran & Lupart, 2009; Berthold & Hoover, 2000; Hanish & Guerra, 2002; Kochenderfer & Ladd, 1996a; Ma, Phelps, Lerner, & Lerner, 2009; Nansel et al., 2001). On both sides, studies have used various measures of achievement (e.g. grade point average, self-reported grades, teacher rating of academic progress), but samples were generally larger in studies pointing to an absence of relationship between victimization and achievement than studies reporting a significant association.

A few studies examined the links between peer victimization and *academic self-efficacy*, with mixed results. Some found that victimized early adolescents had lower academic self-efficacy than non-victims (Paul & Cillessen, 2003; Thijs & Verkuyten, 2008).

But no differences in perceived competence were reported between victims and comparison students among younger children (Boulton & Smith, 1994; Ma et al., 2009).

Regarding the association between victimization and *attendance*, results are more consistent, showing that some victimized students try to avoid school. Peer harassment was associated with higher absenteeism from school (Juvonen et al., 2000; Nishina et al., 2005; Parker & Asher, 1987). Moreover, in a longitudinal study with two hundred 5- and 6-year-old children, Kochenderfer and Ladd (1996b) observed that victimization was a precursor of self-reported school avoidance (e.g., “Do you wish you didn’t have to come to school?”). This result was replicated in primary school with teacher rating of school avoidance (e.g., “Asks to leave the classroom”; Buhs, Ladd & Herald, 2006).

Finally, peer victimization has been found to be associated with reduced *school engagement* across studies using various measures and informants. Victimization was found to be negatively correlated with school liking (Boulton, Chau, Whitehand Amataya & Murray, 2009), school attachment (Wei & Williams, 2004), self-reported classroom engagement (doing well in school work, doing homework, following rules, getting along with classmates, etc.; Nansel, Haynie & Simons-Morton, 2003), teacher rating of school engagement (e.g., “In my class, this student concentrates on doing her/his schoolwork”; Graham et al., 2006), and a latent variable composed of teacher rating of attitude and effort, school record of absences, and self-reported emotional and behavioural school engagement (Hoglund, 2007). Similar findings emerged from a longitudinal study among elementary school children combining teacher rating of student enthusiastic participation and self-reported school avoidance (Iyer et al., 2010). However, because each of these studies used a different conceptualization of engagement, it is hard to get a clear picture of the strength of this association and of the theoretical processes underlying it.

Taken together, these results show that only some facets of school adjustment are

clearly affected by peer victimization and they thus highlight the importance of looking at specific indicators. In the current study we decided to focus on two motivational constructs: academic self-efficacy (Bandura, 1997) and school disaffection (Skinner, Furrer, Marchand & Kindermann, 2008). Academic self-efficacy is close to perceived competence and refers to people's beliefs about their capabilities and about the outcomes of their efforts in the academic domain (Usher & Pajares, 2008). Academic self-efficacy has been abundantly documented as a proximal predictor of achievement (Bandura, 1997; Schunk & Pajares, 2005). However, as mentioned above, few studies have explored the relationship between peer victimization and academic self-efficacy, especially among adolescents. School engagement could be defined as the intensity and duration of commitment or involvement in academic activities, including emotional, cognitive and behavioural dimensions (Fredricks, Blumenfeld & Paris, 2004). School engagement has been documented as an important predictor of achievement and school drop-out (Appleton, Christenson & Furlong, 2008). Some scholars have argued that school engagement should be distinguished from its opposite, namely *school disaffection* (Skinner et al., 2008). This latter concept includes passivity, withdrawal, giving-up, distraction, boredom, anxiety and frustration; it reflects more than a lack of engagement (Skinner, Kindermann & Furrer, 2009). Given the results reviewed above, the concept of school disaffection seems especially well-suited to assessing the academic correlates of peer victimization, and its multi-dimensional nature makes it possible to capture most aspects of engagement investigated in previous research (including school avoidance). Moreover, some results indicated that school disaffection fully mediates the relationship between victimization and achievement (Hoglund, 2007; Iyer et al., 2010; Wei & Williams, 2004).

Therefore, this study aims at examining the strength of the association between peer victimization and two well-researched predictors of achievement: academic self-efficacy and

school disaffection.

Main Effect and Stress-buffering Effect of Social Support

While peer victimization is associated with internalizing problems and school disaffection, social support is associated with well-being and school engagement (Scholte et al., 2007; Rigby, 2000). Two differing theoretical models are debated in the scientific literature about the effect of social support (Cohen, Gottlieb & Underwood, 2000; Mittlemark, Aaro, Henriksen, Siqveland & Torsheim, 2004; Ystgaard, Tambs, & Dalgard, 1999). The *main effect model* posits that a higher level of social support has a positive effect on psychological functioning for all individuals whatever the level of stress they are exposed to. The *stress-buffering effect model* postulates that social support acts as a protective factor against the adverse effect of negative life events on psychological well-being. In other words, the positive effect of social support should be stronger for people under high stress. In the context of school violence, Demaray, Malecki and DeLong (2006) hypothesized that the stress-buffering effect model would be especially relevant for victims.

Most studies found a main effect of social support on both peer victimization and internalizing problems, supporting the main effect model (Baldry, 2004; Herrero, Estévez & Musitu, 2006). But contradictory results were found for the stress-buffering effect model of social support in the relationship between victimization and internalizing problems. Some studies found no support for this buffering hypothesis (Martin & Huebner, 2007; Rigby, 2000). Other studies found a significant interaction between victimization and social support on internalizing problems, but their results were inconsistent across sources of social support: interactions were found with friends' support (Hodge, Boivin, Vitaro, & Bukowski, 1999; Woods, Done & Kalsi, 2009), with parental support (Flouri & Buchanan, 2002), with parental support but not with friends' support (Bonanno & Hymel, 2010), and with friends' support but not with parental support (Holt & Espelage, 2007). Further, some studies suggested that

these interactions could differ by gender. Cheng, Cheung and Cheung (2008) found a buffering effect of friends' support, but not parental support, only among boys, while Stadler, Feifel, Rohrmann, Vermeiren and Poustka (2010) found a buffering effect of parental support only among girls. No clear pattern emerged from these results.

So far, studies of the role of social support in bullying and victimization have mainly focused on parent and peer support (Delfabbro et al., 2006; Pellegrini, Bartini & Brooks, 1999; Perren & Hornung, 2005), showing that well-being is more strongly associated with parental support than with friends' support (Bonanno & Hymel, 2010; Cheng et al., 2008; Herrero et al., 2006; Holt & Espelage, 2007). Very few studies of peer victimization have explored the effect of teacher support (Benhorin & McMahon, 2008). Among the few exceptions, two studies using a one-item measure of teacher support found that it was associated with lower victimization rates (Furlong, Chung, Bates & Morrison, 1995; Rigby, 2000), while a study using a more detailed measure of teacher support found no significant association (Demaray & Malecki, 2003).

No study has explored the moderation effect of social support in the relation between peer victimization and school adjustment. Nevertheless, a growing body of research and theoretical propositions highlights the importance of supportive social relationships for academic self-efficacy and school engagement (Juvonen, 2007; Martin & Dowson, 2009; Wentzel, 1998). Self-efficacy and engagement have been found to be positively associated with parental support (Bouffard, Vezeau, Chouinard & Marcotte, 2006; Murray, 2009), peer acceptance (Buhs & Ladd, 2001; Buhs et al., 2006; Wentzel & Asher, 1995), and teacher support (Midgley, Feldlaufer & Eccles, 1989; Hamre & Pianta, 2001; Hughes, Luo, Kwok, & Loyd, 2008). Other research has indicated that each of these three sources of social support (parents, peers, and teachers) had an independent effect on engagement (Furrer & Skinner, 2003), the effect of teacher support being stronger than the effect of peer support (Goodnow,

1993; Ryan, Stiller & Lynch, 1994; Wentzel, 1998).

Implicitly or explicitly, most studies have used an additive model of social support sources, and very few have tested the possibility of an interaction between sources. Among the few exceptions, DuBois, Felner, Brand, Adan, and Evans (1992) found that the effect of teacher support on psychological distress was more pronounced when parental support was low. On the other hand, Wentzel (1998) found no significant interactions between teacher, parental and peer support on student engagement. Results based on median splits from Furrer and Skinner (2003) supported the idea of a cumulative but unequal contribution of these three sources of social support, but did not directly test interaction effects.

In the present study, we want to test if parental, peer, and teacher support moderate the effect of peer victimization on academic self-efficacy and school disaffection, and if there is an interaction between these three sources of social support.

Mediation effect of Internalizing Problems

As mentioned above, peer victimization is associated with both internalizing problems and with school disaffection. Consequently, internalizing problems might mediate the effect of victimization on school disaffection. In fact, some studies found that psychological distress mediated the relationship between peer harassment and absenteeism (Juvonen et al., 2000; Nishina et al., 2005), school engagement (Hoglund, 2007), or achievement (Graham et al., 2006; Schwartz et al., 2005).

Moreover, social support is documented as having an effect on both internalizing problems and school engagement (see above), but studies investigating the relationships between social support and engagement do not usually control for internalizing problems. It could be, however, that – as for peer victimization – the effect of social support on school engagement is mediated by internalizing problems: social support sustains well-being and protects against internalizing problems, which in turn promotes self-efficacy and prevents

school disaffection. Indeed, Wentzel (1998) found that psychological distress mediated the relationship between social support and school interest.

As for school adjustment, conceptualization and operationalization of internalizing problems differed between studies, but these differences are rarely discussed in peer victimization research, most writers treating them as unproblematic. Indeed, contrary to what was observed for school adjustment, results regarding the association between peer victimization and internalizing problems are very consistent throughout a large variety of measures and indicators. Building on the meta-analysis of Hawker and Boulton (2000), which indicated that *depression* is the strongest correlate of peer victimization among various indicators of internalizing problems, we decided to focus on depression in the current study. We wanted to examine if depression mediates the relationship between peer victimization and self-efficacy on the one hand, and between peer victimization and school disaffection on the other hand, as well as the relationship between social support and these two indicators of school adjustment.

Gender Differences

Mean-level differences between boys and girls are common findings in research about peer victimization, depression, and school engagement. Girls usually displayed more depressive symptoms (e.g., Nolen-Hoeksema, 1994) and higher school engagement (e.g., Roeser, Eccles & Sameroff, 1998). They also encountered less direct and physical victimization from peers (e.g., Olweus, 1993). Results regarding social or relational victimization (e.g. rumours, exclusion from a peer group) are less consistent, some studies reporting a higher level among girls (e.g. Crick & Bigbee, 1996), but more extant reviews reporting a similar level among boys and girls in the majority of studies (Card, Isaacs, & Hodges, 2007; Crick et al., 2001). Moreover, many studies making a distinction between different types of peer victimization did not provide information about construct validity

(Furlong, Sharkey, Felix, Tanigawa & Greif Green, 2009); when available, this information often supports the use of a unique victimization scale mixing those types (Guerra, Williams & Sadek, 2011; Hartung, Little, Allen & Page, 2011). Latent class analyses also failed to identify subgroups of students based on victimization type, but identified subgroups based on the degree of victimization: a subgroup of students almost never victimized, a subgroup of students who are sometimes victims – mainly of some widespread types of aggression (i.e. verbal and relational) –, and a subgroup of students who are frequently victims of all types of aggression (Nylund, Bellmore, Nishina & Graham, 2007; Wang, Iannotti, Luk & Nasel, 2010). More boys than girls were classified in the frequently victimized subgroup.¹

The question of gender differences in the relations between victimization, depression, and disaffection is much more controversial. Some studies reported that girls were more affected by peer victimization than boys (Graham et al., 2006; Hoglund, 2007; Paul & Cillessen, 2003). Hanish and Guerra (2002) noted that girls and boys did not display exactly the same patterns of emotional, social, behavioural and academic functioning following peer victimization. As mentioned above, some studies also found gender differences regarding the effect of social support in victimization, but again results were inconsistent (Cheng et al., 2008; Rigby, 2000). Other studies reported no differences between girls and boys in these relations (Baldry, 2004; Herrero et al., 2006; Lopez & Dubois, 2005; Nishina et al., 2005). No coherent picture emerged from these contradictory findings.

To summarize, (a) there is a lack of evidence regarding the construct validity of differentiating several types of peer victimization, and (b) findings on gender differences in the relations between the variables of interest in this study are inconclusive. Consequently, in addition to assessing mean differences, the present study simply aims to check if the relations between peer victimization, social support, depression, and school disaffection are parallel

¹ It should be noted that this discussion refers to peer victimization and not aggression. Gender differences in subtypes of aggression seem more strongly established, even if their occurrence and size fluctuate largely as a

between boys and girls.

Aims and Hypotheses

The main goal of this study is to extend our understanding of the role of peer victimization and social support in internalizing problems and school engagement. More precisely, this study aims at comparing the relevance of the main effect model and buffering effect model of social support on depression, but also on self-efficacy and school disaffection. The contribution of three different sources of social support – namely parents, peers, and teachers – will be investigated, as well as their potential interaction effects. The effect of social support on self-efficacy and school disaffection when depression is taken into account will also be examined. The last goal of this study is to explore the existence of unequal associations between these variables among girls and boys.

From the research reviewed above, we expect to find a negative association between victimization and academic self-efficacy (Paul & Cillessen, 2003) and a positive association between peer victimization and school disaffection (Iyer et al., 2010). A main effect of several sources of social support is expected, especially an effect of parental support on depression (Cheng et al., 2008), an effect of teacher and peer support on self-efficacy (Harter, 1996), and an effect of teacher support on school disaffection (Furrer & Skinner, 2003). Also expected are a buffering effect of social support on the relation between victimization on the one hand, and depression, self-efficacy, and school disaffection on the other. Interactions between sources of social support will be explored because previous studies did not provide sufficient indications to derive precise hypotheses. Depression is expected to mediate the effect of victimization on self-efficacy and school disaffection (Hoglund, 2007), and self-efficacy is expected to mediate the relation between depression and school disaffection (Bandura, 1997). The possibility that depression also mediates the effect of social support on self-efficacy and

school disaffection will also be examined (Wentzel, 1998). Boys are expected to report more victimization, less depression, and more school disaffection than girls. Similarity of strength in the associations between variables among boys and girls will be tested.

Method

Sample and Procedure

Four hundred and six students from French-speaking Belgian secondary schools completed an anonymous questionnaire administered by a researcher, during regular class time. Six students were excluded from analyses due to missing data. The following analyses thus include 400 students, 164 seventh graders and 236 eighth graders. Participants attended six urban schools. They were 11 to 16 years old (M age = 13 years); 53 % were boys; and 18 % have already repeated a year. Grade retention (students being held back a grade) is widespread in the Belgian education system and its negative effects on self-efficacy and school attendance are well-known (Crahay, 2007; Jimerson, 2004), so it is worthwhile including it as a control variable. Parents' occupation indicated that students came from various social backgrounds. For 76 % of students both parents had Belgian nationality, while others have at least one parent of another nationality.

Measures

All measures were adapted from existing scales. Most of them were translated into French and some formulations were slightly changed to fit with the age of the participants and the context of the Belgian education system. The questionnaire was pre-tested in two qualitative focus-groups of students to ensure readability and correct interpretation of the items. In the present study, items of each scale were submitted to exploratory factorial analysis. For each scale, the mean score of items was computed and used in subsequent analyses.

Teacher support. This scale is composed of eight items loading on one factor accounting for 41% of variance ($\alpha = .79$). These items, adapted from Galand and Philippot (2005), assess availability and support provided by teachers (e.g., “Teachers try to help me when I have a problem”, “Teachers do what is necessary when I tell them that another student is annoying me”). Answers could range from 0 = *totally false* to 4 = *totally true*.

Peer support. This scale is composed of eight items loading on one factor accounting for 42.5% of variance ($\alpha = .80$). These items, adapted from Hodges and Perry (1999), assess peer acceptance and support (e.g., “I know I can rely on some students if I have a problem”, “I feel it’s difficult to have friends in this class” [reverse scoring]). Answers could range from 0 = *totally false* to 4 = *totally true*.

Parental support. This scale is composed of eight items loading on one factor accounting for 46% of variance ($\alpha = .82$). These items, adapted from Moos and Moos (1983), assess parents’ availability and family climate (e.g., “My parents are able to listen to me when I have a problem”, “In my family, we talk about our personal problems together”). Answers could range from 0 = *totally false* to 4 = *totally true*.

Peer victimization. This scale is composed of ten items loading on one factor accounting for 47% of variance ($\alpha = .87$). These items, adapted from Olweus (1993) and Mynard and Joseph (2000), assess the frequency of verbal victimization (e.g., “Some students call me names.”), physical victimization (e.g., “Some students punch or kick me”), and relational victimization (e.g., “Some students spread rumours about me”). Answers could range from 0 = *never* to 4 = *very often*. One factor structure and strong internal consistency supported the construct validity of merging all victimization items used in this study into one scale (Guerra et al., 2011; Hartung et al., 2011), reflecting the fact that student experience of victimization is rarely limited to one specific type (Nylund et al., 2007; Wang et al., 2010).

Depression. This scale is composed of ten items loading on one factor accounting for

45.5% of variance ($\alpha = .86$). These items, adapted from Billings and Moos (1984), assess the frequency of diverse symptoms of depression, including suicidal ideation (e.g., “I feel bad about myself”, “I want to be dead and away from everything”). Answers could range from 0 = *never* to 4 = *very often*.

Academic self-efficacy. This scale is composed of five items loading on one factor accounting for 55% of variance ($\alpha = .79$). These items, adapted from Galand and Philippot (2002), assess beliefs about one’s capacity to deal successfully with school work (e.g., “I think I’m good at my school work”). Answers could range from 0 = *totally false* to 4 = *totally true*.

School disaffection. This scale is composed of ten items loading on one factor accounting for 47% of variance ($\alpha = .87$). These items, adapted from Galand (2004), assess the intensity of emotional (e.g., “Most courses are very boring”), cognitive (e.g., “At school, I want to do easy tasks and work as little as possible”), and behavioural (e.g., “I’d like to give up school”) disaffection from school. Answers could range from 0 = *totally false* to 4 = *totally true*. This measure was designed to cover the three more common components of disaffection but not to assess each of them separately (Fredricks et al., 2004). High loadings on one factor and high internal consistency on a global scale are consistent with this choice.

Results

Consistent with the limited age-range of our sample and with previous studies (Card et al., 2007), age, grade, parents’ occupation and ethnicity were not related to peer victimization, depression, social support, academic self-efficacy, or school disaffection. Boys reported lower perceived social support, fewer depressive symptoms and more school disaffection than girls (see Table 1). Correlations between the other variables of the study are presented in Table 2. Students who had to repeat a year reported lower social support from parents and teachers, lower self-efficacy and more disaffection. As expected, peer victimization was positively

correlated with depression ($r = .51$) and with school disaffection ($r = .20$) and negatively correlated with academic self-efficacy ($r = -.31$). These variables were significantly associated with each other and with perceived social support.

Insert Tables 1 and 2 about here.

Moderation analyses

Hierarchical linear regression analyses were performed to test the moderation effect of social support. In the first step, six variables were entered in the regression equation: gender, grade retention, peer victimization, parental, teacher, and peer support. In the second step, the interaction terms between peer victimization and each source of social support were introduced into the equation (step 2a)(in anticipation of this step, peer victimization and social support scores had been mean centred). Alternatively, the two-way interaction terms between each source of social support were entered (step 2b).

The results for depression, academic self-efficacy, and school disaffection as the outcome variables are presented in Table 3. Depression was positively associated with peer victimization, and negatively related to teacher and parental support. Academic self-efficacy was negatively associated with peer victimization and positively associated with the three sources of social support. School disaffection was negatively associated with teacher and parental support. No moderation effect of perceived social support or interactions between sources of support appeared.

Insert Table 3 about here.

Mediation analyses

Path analyses were used to test mediation through a comparison of models approach with LISREL 8.72. Regarding the effect of peer victimization, the most parsimonious model, hypothesizing full mediation, with a path from victimization to depression, a path from depression to self-efficacy, and a path from self-efficacy to school disaffection, was tested

first. Results indicated that this model provided a satisfactory fit to the data ($\chi^2(3) = 13.06$; $p < .01$; RMSEA = .09; standardized RMR = .05; CFI = .98; AGFI = .95), with all paths highly significant ($p < .01$). Second, a model hypothesizing partial mediation by depression was tested, by adding a path from victimization to self-efficacy and to school disaffection. These two new paths were non-significant and their inclusion in the model did not improve its fit ($\Delta\chi^2(2) = 2.61$; $p > .10$). Third, a model hypothesizing partial mediation by self-efficacy was tested, by adding to the first model a path from depression to school disaffection. This new path was significant (the other paths remained significant) and its inclusion improved the fit of the model ($\Delta\chi^2(1) = 12.08$; $p < .05$), providing a strong fit to the observed data ($\chi^2(1) = 0.08$; $p > .10$; RMSEA = .00; standardized RMR = .003; CFI = 1.00; AGFI = 1.00). This final model, where the effect of peer victimization on self-efficacy and school disaffection is fully mediated by depression and where the effect of depression on school disaffection is partially mediated by academic self-efficacy, is presented in Figure 1.

Insert Figure 1 about here.

Regarding the effects of perceived social support, parental, peer, and teacher support were added to the model presented in Figure 1, with paths from these three sources of support to depression. The fit of this extended model was not good ($\chi^2(8) = 65.48$; $p < .001$; RMSEA = .14; standardized RMR = .07; CFI = .94; AGFI = .84), and the path from peer support to depression was equal to zero. Next, the main effects of social support on self-efficacy and school disaffection identified in the multiple regression analyses (Table 3) were included in path analysis. This inclusion significantly improved the fit of the extended model ($\Delta\chi^2(5) = 63.26$; $p < .001$), but the paths from parental support were non-significant. The omission of the three non-significant paths built a model integrating mediation effects of depression and main effects of sources of social support with very good indexes of fit ($\chi^2(6) = 6.01$; $p > .10$; RMSEA = .002; standardized RMR = .02; CFI = 1.00; AGFI = .98). This model is presented

in Figure 2. Parental support had a direct effect on depression only, peer support had a direct effect on self-efficacy only, and teacher support had a direct effect on depression, self-efficacy, and school disaffection.

Insert Figure 2 about here.

Multigroup analyses

A group comparison approach with gender as the grouping variable was chosen to test the similarity of relationships between variables among boys and girls, based on the model developed above (Figure 2). First, a multigroup analysis (LISREL 8.72) was performed on this model with all paths constrained to be equal between boys and girls. As expected, indexes of fit indicated that this model adequately represented the relations between the observed variables ($\chi^2(24) = 20.91; p > .10$; RMSEA = .00; standardized RMR = .03; CFI = 1.00; GFI = .99). Second, equality constraints were relaxed for the paths between victimization, depression, self-efficacy and school disaffection. This operation did not improve the fit of the model ($\Delta\chi^2(4) = 0.87; p > .10$). Third, equality constraints were relaxed for the paths including sources of social support. Again, this operation did not improve the fit of the model ($\Delta\chi^2(5) = 6.81; p > .10$). These results support the idea that the associations between the variables of the study are parallel among boys and girls.

Discussion

As expected, the results indicated that being victimized by peers was significantly associated with lower academic self-efficacy and higher school disaffection. However, these associations were slight according to Cohen (1988) criteria for effect sizes. The results concerning school disaffection are consistent with previous studies, supporting the idea that school engagement and disaffection (Skinner et al., 2009) could provide a useful conceptual framework to integrate empirical results regarding the relations between peer victimization

and involvement in academic activities. The results regarding self-efficacy were consistent with those of Paul and Cillessen (2003) among students at similar grades, and not with the zero association observed among younger pupils (Boulton & Smith, 1994). This discrepancy in findings between younger and older students may reflect developmental changes in the ways student's self-views are affected by peer interactions (Harter, 1999).

The role of social support

Perceived social support from parents, teachers or peers was found to have an effect on depression, self-efficacy, and school disaffection. But contrary to our expectations, no significant interaction between social support and victimization emerged. The results do not support Demaray et al.'s (2006) hypothesis that the stress-buffering model would be especially relevant for victims. On the contrary, they add to the growing body of research supporting the main effect model of social support (Herrero et al., 2006; Mittlemark et al., 2004) and they suggest that support is a useful resource for all students, and not only or especially for those dealing with high levels of stress. They also highlight that the association between peer victimization and depression remains important even when perceived social support is taken into account.

Considering the specific effects of different sources of social support, parental support was associated with reduced depressive symptoms, peer support was associated with higher academic self-efficacy, while teacher support was associated with the three outcome variables. The effect of teacher support was at least as large as the other sources of support. No interaction between sources of support appeared. These results underline the importance of taking several sources of social support into account, showing that these sources have an additive but unequal effect on adjustment: teacher support can more easily compensate for lack of peer support than the reverse, because the effect of teacher support is stronger than the effect of peer support (Furrer & Skinner, 2003). They also suggest that sources of support

more proximal to school experience (peer support, teacher support) may be more important for school adjustment (academic self-efficacy, school disaffection) than more distal sources (parental support). They add to the growing number of studies pointing to the importance of teachers in student academic life, even during adolescence (Chu et al., 2010; Patrick & Ryan, 2001; Reddy, Rhodes & Mulhall, 2003). It should be noted that, as our main focus was on the consequences of victimization, the present study does not examine the protective role that social support (especially peer support, see table 2) might play in relation to peer victimization (Baldry, 2004; Hodges et al., 1999).

The role of depression

The results support the hypothesis that the relationship between victimization and academic self-efficacy is fully mediated by depression. In order to explain these effects, it may be fruitful to turn to the sources of self-efficacy beliefs postulated by Bandura (1997). Two sources may be relevant in the case of peer victimization: social and verbal persuasion and emotional and physiological state. If victimized students receive fewer positive messages and more negative ones from their peers and experience more negative affects, then this could have a negative impact on their self-efficacy (Harter, 1999; Usher & Pajares, 2008). However, messages and affects related to peer victimization are usually not directly relevant for the academic domain. An effect of information from the social domain on the academic domain should then be postulated, in contradiction to the domain specificity of self-efficacy stated by Bandura. Alternatively, the high level of internalizing problems typically associated with peer victimization could lead to more negative self-views, including academic self-efficacy beliefs (Cole, Martin, Peeke, Seroczynski & Fier, 1999). Regarding school disaffection, it may be that the psychological distress associated with victimization will divert student energy and attention from academic tasks, and that victimized students will focus on protecting themselves and avoiding their aggressors (Iyer et al., 2010; Wei & Williams, 2004).

Our results are compatible with previous research suggesting that peer victimization mainly affects school adjustment indirectly through the internalizing problems it generates, which in turn contaminate academic self-efficacy beliefs and divert student involvement from school activities (Juvonen et al., 2000). At the same time, it should be noted that the effect of social support, especially teacher support, on self-efficacy and school disaffection remained when depression was controlled. Only the effect of parental support appeared to be mediated by depression. This suggests that perceived social support and peer victimization may influence school adjustment partially through different processes: victimization through internalizing problems, social support through more positive self-view, higher perceived value of the school or higher mastery goals (Wentzel, 1997). More generally, it indicates that if peer victimization research might benefit from motivational theories to develop a more refined model of the consequences of victimization on school adjustment, motivation research should pay more attention to the impact of victimization (and not only social support) and internalizing problems on school engagement.

Gender similarities

Finally, considering gender differences, the results suggest that the processes linking peer victimization, depression, academic self-efficacy and school disaffection are the same for boys and girls, even if mean differences exist between them (Colarossi & Eccles, 2003). It should be noted that this study is one of the first to use multigroup analysis to test gender differences in these relationships. Comparisons between girls and boys (table 1) show close to zero or small differences (Cohen, 1988), except more medium effects in favour of girls for teacher support and school disaffection. Our results support the idea that gender issues have to be included in anti-bullying policies, but also that gender differences should not be overstated (Hyde, 2005).

Inconsistencies between some results of our study and previous ones, or between

studies reported in the introduction of this paper about gender, but also about social support and achievement, may reflect a more general measurement issue in the field of peer victimization (Jimerson, Swearer & Espelage, 2009). Indeed, questionnaires used to measure peer victimization are very different: some are limited to one item while others include a large number of items, some focus specifically on verbal, physical or relational victimization while others mix (some of) these forms of victimization. Moreover, the cut-off points used to separate victims from bystanders in group comparison studies differ from one study to another, resulting in large variations in the proportion of victims (Galand, DERNONCOURT & Mirzabekiantz, 2009). This variety in measurement may provide an explanation for the frequency of mixed findings in peer victimization research. To build a stronger consensus among researchers regarding the measurement of peer victimization or to document more systematically the implications of using different measures may be ways to develop more consistent findings.

Limitations and perspectives

A major limitation of this study is the cross-sectional correlative nature of the data. These data did not provide evidence of causality. The fact that the current study relies exclusively on self-reported data is another limitation, raising concerns about shared method variance. Particularly, depression may put a negative slant on perceptions of social support (through a halo effect or biased recollection). However, the independent effects of social support show that this may not be totally the case. Juvonen, Nishina and Graham (2001) argued that self-reported measures would be more suited to assessing the psychological correlates of peer harassment, while peer and teacher ratings would be more relevant to assessing its social correlates. Nevertheless, our data clearly reflect more the student's "subjective" experience of schooling than the "objective" reality of the classroom. Even if the effects of victimization on depression and school disaffection seem to be quite consistent

across methods of measurement, peer nomination and teacher rating may be useful complements to self-reporting (Wienke Totura, Green, Karver & Gesten, 2009).

The measure of peer victimization used in the present study combines several forms of harassment. The development of instruments specifically designed to provide valid and reliable measures of several types of victimization (see for instance Marsh et al., 2011) would enable researcher to test if the relationships found in this study are similar for each of these types. By the same token, it could be interesting to explore the specific relation between peer victimization and the various subcomponents of school disaffection (emotional, cognitive, and behavioural; Fredriks et al., 2004) in further research, using measurement tools designed to assess these subcomponents separately. Moreover, further studies could expand our understanding of the relationships between victimization and school adjustment by assessing other motivational constructs than self-efficacy and engagement, such as task value, goal orientations, or self-determination (Wentzel & Wigfield, 2009). Finally, some studies suggest that it could be useful to distinguish different dimensions of social support, such as emotional and informational support (Murray, 2009), and to include other sources of social support, such as friends (Woods et al., 2009).

From a practical point of view, the results of this study support the idea that reducing peer victimization could be one way to prevent some forms of school maladjustment. They point to the necessity of helping victims to deal with the internalizing problems associated with peer harassment. They also suggest that social support from parents, peers, and teachers, is crucial in sustaining well-being and school adjustment. These various sources of social support could be the target of intervention and be included in anti-bullying policies. In particular, fostering the availability of teacher support and the conditions that make victimized students less reluctant to seek help from their teachers could be a promising intervention (Hunter, Boyle & Warden, 2004; Newman, 2003).

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Table 2

Means, standard-deviations, and zero-order correlations.

Measure	M	SD	1.	2.	3.	4.	5.	6.	7.	8.
1. gender	.	.	-							
2. grade retention	.	.	.09	-						
3. parental support	3.06	.80	.01	-.14**	-					
4. teacher support	2.71	.73	-.15**	-.13*	.33***	-				
5. peer support	2.89	.80	-.12*	.09	.30***	.17**	-			
6. peer victimization	1.17	.73	.09	-.01	-.25***	-.18***	-.63***	-		
7. depression	1.45	.80	-.12*	.07	-.40***	-.37***	-.36***	.51***	-	
8. academic self-efficacy	2.37	.90	-.05	-.28***	.32***	.39***	.32***	-.31***	-.59***	-
9. school disaffection	1.41	.88	.27***	.15**	-.29***	-.43***	-.17**	.20***	.38***	-.42***

Note. $N = 400$; gender: 0 = girl, 1 = boy; grade retention: 0 = never, 1 = at least once; other variables ranged from 0 to 4.

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

Table 3

Standardized beta for hierarchical linear regression testing main and interaction effects.

	Depression	Self-efficacy	School disaffection
<i>Step 1</i>			
Gender	-.15**	.02	.23***
Grade retention	.03	-.22***	.07
Peer victimization	.44***	-.17**	.08
Parental support	-.19***	.11*	-.15**
Teacher support	-.25***	.28***	-.34***
Peer support	-.01	.12*	.02
<i>Step 2a</i>			
Victim. x parental support	-.04	.06	.03
Victim. x teacher support	-.02	-.09	.04
Victim. x peer support	.05	.00	-.06
<i>Step 2b</i>			
Peer x parental support	-.08	.03	.01
Peer x teacher support	-.01	-.03	-.04
Parental x teacher support	-.01	.04	.02
Adjusted R ² (step 1)	.42	.28	.26
95% CI	[.35,.49]	[.21,.35]	[.19,.33]

Note. $N = 395$; * $p < .05$; ** $p < .01$; *** $p < .001$

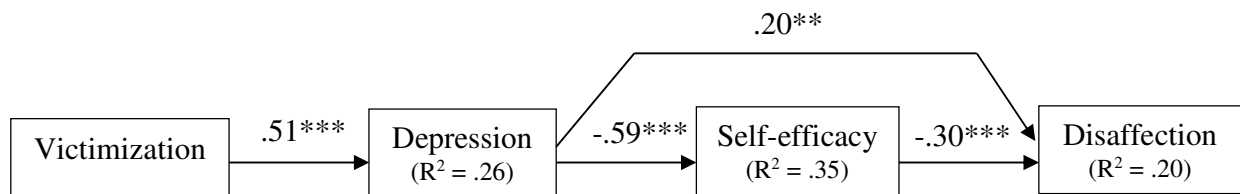


Figure 1. Path diagram for the mediation effect of depression concerning peer victimization.

$N = 395$. $\chi^2 (1) = 0.08$; $p > .10$; RMSEA = .00; AGFI = 1.00

** $p < .01$; *** $p < .001$

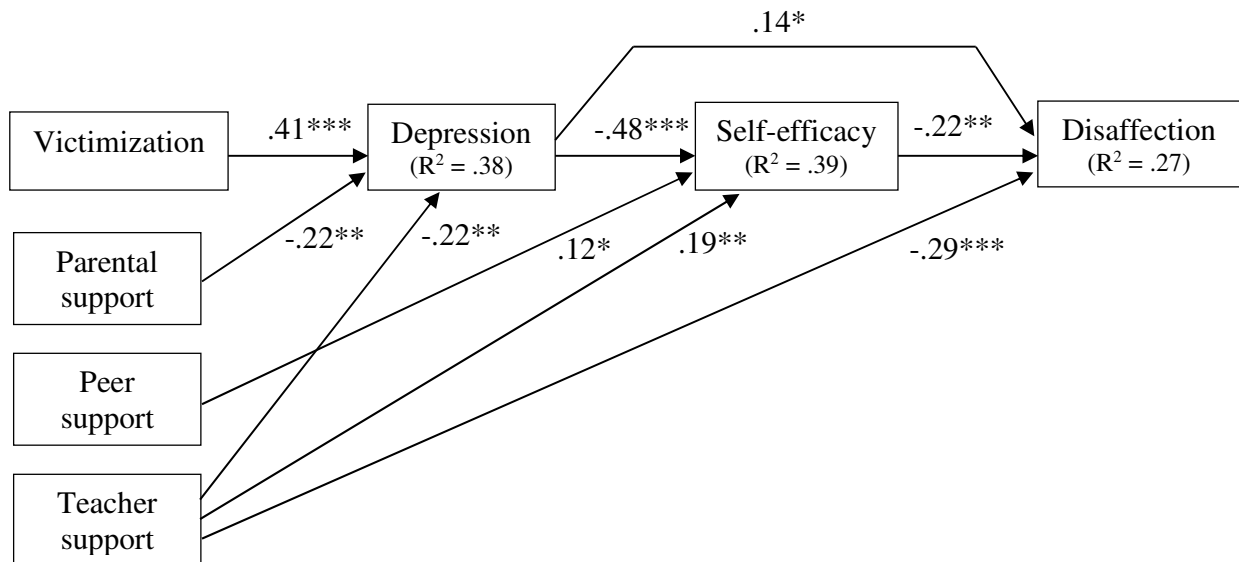


Figure 2. Path diagram for the mediation effect of depression and the main effect of sources of social support. Correlations between independent variables are reported in table 1.

$N = 395$. $\chi^2 (6) = 6.01$; $p > .10$; RMSEA = .002; AGFI = .98

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