The moderating role of teacher-student relationships on the association between peer victimization and depression in students with intellectual disabilities

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Abstract

Background. Students with intellectual disabilities (ID) are at increased risk of peer victimization and depressive symptoms. Little is known about the protective and aggravating factors that influence the association between peer victimization and depressive symptoms among students with ID.

Aims. This study assesses the moderating role of two facets of teacher-student relationships (TSR)—warmth and conflict—on the association between peer victimization and depressive symptoms.

Methods. A sample of 395 students (aged 11 to 22) with mild and moderate ID was recruited in Canada and Australia.

Results. Hierarchical multiple regressions indicated that victimization and TSR conflict were both associated with higher levels of depressive symptoms, and that TSR conflict moderated the associations between both TSR warmth and victimization, and depressive symptoms. TSR warmth was related to lower levels of depression only for students who also reported a low level of TSR conflict. Similarly, associations between victimization and depression were weaker among students exposed to more conflictual TSR.

Conclusions. Students with ID are at increased risk of developing depressive symptoms when exposed to negative social relationships (i.e., peer victimization or TSR conflict). For these students, the benefits of TSR warmth were far less important than the consequences of conflict.

Keywords: intellectual disabilities, peer victimization, depressive symptoms, teacher-student relationships, warmth, conflict

What this paper adds?

This paper focuses on depressive symptoms among youth with intellectual disabilities (ID), a population at increased risk for such mental health issues (e.g., Maïano et al., 2016), which could be partly explained by their reported exposure to peer victimization. Indeed, our results indicate that being the victim of verbal, physical, and relational aggression perpetrated by peers was associated with increased levels of depressive symptoms. However, in an attempt to identify factors that could mitigate the risk for depressive symptoms carried by exposure to peer victimization, this study also assessed the extent to which teacher-student relationships (TSR) could influence (i.e., moderate) this association. Results showed that sharing conflictual relationships with teachers was an additional risk factor associated with higher levels of depressive symptoms, whereas sharing warm relationships with teachers was only related to reduced levels of depressive symptoms for students not exposed to conflict with their teachers. Overall, the present results seem to suggest that students with ID may be especially sensitive to negative social relationships occurring in their school context, much more so than to exposure to warm and supportive relationships in this same context. Yet, despite this increased sensitivity to negative social interactions, habituation (or inoculation) effects also seem to be at play, revealing a plateau to the cumulative risks of multiple sources of relational difficulties. Together, these results suggest that teachers and school practitioners who wish to reduce depressive symptoms in students with ID should primarily focus on limiting the number of negative interactions they encounter in school.

1. Introduction

Exposure to peer victimization in school has been repeatedly shown to be associated with experiences of psychological difficulties later in life, with reported consequences including violent behavior, psychotic symptoms, anxiety, depression, and suicidal intentions (Arseneault, 2017; Arseneault, Bowes, & Shakoor, 2010; Schaefer et al., 2018; Singham et al., 2017). Peer victimization refers to one's direct and repeated exposure to verbal, physical, and relational aggression perpetrated by peers (Hunter, Boyle, & Warden, 2007; Kochenderfer & Ladd, 1996; Olweus, 1978). More specifically, verbal victimization refers to psychological forms of aggression, such as insulting, threatening, or making fun of a student. Physical victimization refers to overt acts of aggression involving physical contact, such as hitting, pinching, pushing, or kicking. Relational victimization aims at undermining the reputation of a student via rumors, exclusion, or isolation.

The prevalence of peer victimization usually peaks around the beginning of adolescence (Brown, Birch, & Kancherla, 2005). Prevalence estimates suggest that as much as 30% of students worldwide have been exposed to peer victimization (Modecki, Minchin, Harbaugh, Guerra et Runions, 2014; Shetgiri, 2013). Yet, some students are at increased risk of exposure to such peer victimization. For instance, youth with ID have been reported to be at least 1.5 times more likely to be a victim of verbal, physical, or relational aggression perpetrated by their peers relative to typically developing youth (Berg, Shiu, Msall, & Acharya, 2015; Christensen, Fraynt, Neece, & Baker, 2012; Maïano et al., 2016; Tipton-Fisler, Rodriguez, Zeedyk, & Blacher, 2018). An intellectual disability involves impairments (i.e., mild, moderate, severe, or profound) of general mental abilities that impact adaptive functioning (American Psychiatric Association [APA], 2013). Significant limitations characterize intellectual disabilities both in terms of intellectual functioning (i.e., reasoning, learning, problem-solving) and in terms of adaptive behaviors, which covers a range of everyday social and practical skills (APA, 2013). Such limitations could explain why students with ID might be particularly attractive targets for their aggressive peers, while also making it harder for them to defend themselves.

In addition to being frequently victimized by their peers (Maïano, Aimé, Salvas, Morin, & Normand, 2016), students with ID also present a high risk of developing depressive symptoms (Maïano, et al., 2018), sometimes as a result of peer victimization (Berg et al., 2015). The association between victimization and later depression is well-established among typically developing students (Farrington, Loeber, Stallings, & Ttofi, 2011; Hawker & Boulton, 2000) for whom several school environment features can act as protective and aggravating factors (e.g., Huang, Lewis, Cohen, Prewett, & Herman, 2018; Sulkowski, & Simmons, 2018). Teacher-student relationships (TSR)—whether they are characterized by warmth or by conflict—are one of those factors with the potential to mitigate or worsen the risk of depression among victimized students (Huang et al., 2018; Sulkowski & Simmons, 2018). Unfortunately, research has yet to examine the role of TSR as a protective or aggravating factor in the relation between peer victimization and depression among students with ID, who may be particularly likely to benefit from interventions tailored to reduce their risk of depression in the face of adversity. Importantly, interventions focused on TSR may be helpful for these students who, due to their lower levels of autonomy, might particularly benefit from improved relationships with their teachers (e.g., Craven, Morin, Tracey, Parker & Zhong, 2015). To address this gap, the present study was designed to assess the role of teacher-student warmth and conflict as possible moderators of the association between peer victimization and depressive symptoms among adolescents with ID.

1.1. Peer Victimization and Depression

Being exposed to peer victimization presents a risk for the development of internalizing problems, more importantly, for depressive symptoms (Farrington et al., 2011; Hawker & Boulton, 2000). These symptoms include a general moodiness such as feeling sad and hopeless, a diminished interest for most activities, fatigue, loss of energy, and a diminished ability to concentrate (APA, 2013). Adolescence also coincides with an increased risk of developing depression (Thapar, Collishaw, Pine, & Thapar, 2012). Being a direct victim of verbal, physical, or relational aggression perpetrated by classmates at this age could be particularly detrimental (Kaltiala-Heino & Frojd, 2011). The increased emotional dysregulation and helplessness, as well as lowered self-esteem, which follow exposure to victimization are all likely to contribute to the emergence of feelings of psychosocial distress that are typical of depressive symptoms (Kaltiala-Heino & Frojd, 2011; McLaughlin, Hatzenbuehler & Hilt, 2009; Turner, Finkelhor & Ormrod, 2010). Although the prevalence of depressive symptoms increases during adolescence especially for girls (Thapar et al., 2012), exposure to victimization carries the same

risk in terms of depressive symptoms for male and female students across age groups (Hawker & Boulton, 2000).

Among youth with ID, the risk of developing depressive symptoms as a result of exposure to verbal, physical, or relational peer victimization also exists, and may even be worse than in typically developing students. For instance, Berg et al. (2015) found that every time a student with disabilities was victimized, his or her odds of having clinical depression increased by 92%, whereas the risk of developing depression remained the same among students without disabilities. A study by Wright (2017) also found that victimization led to an increase in depressive symptoms in adolescents with ID, although the study did not compare these odds to those observed among typically developing students. Given the high prevalence of victimization and depression reported among youth with ID (Maïano et al., 2016, 2018), as well as the strong associations between victimization and depressive symptoms observed among this population, it is not surprising that calls have been made for an in-depth investigation of environmental factors that could either mitigate or worsen the impact of victimization for youth with ID (Wright, 2017).

1.2. The Role of TSR

Whereas victimization may increase the risk of depression, supportive teacher-student relationships carry important benefits for student well-being (Ciarrochi, Morin, Sahdra, Litalien, & Parker, 2017; Durlak, Weissberg, Dynmicki, Taylor, & Schellinger, 2011), particularly among at-risk populations (Huber, Sifers, Houlihan, & Youngblom, 2012; Ladd & Burgess, 2001). Moreover, as young people enter adolescence, the relationships they form at school become more central than they were in childhood (Eccles, 1999; Roorda, Koomen, Spilt, & Oort, 2011). Pianta (1999) defines TSR warmth as a share of mutual communication, positive emotions, and trust. In contrast, TSR conflict is characterized by disagreements, arguments, and quarrels, as well as a negative disposition toward one another. The direct association between TSR and depressive feelings is documented among both typically developing students and students with ID (Berg et al., 2015; Farrington et al., 2011).

The ecosystemic model of human development postulates that development results from interconnected and interactive processes that are found both in individuals and in their proximal environment (Bronfenbrenner & Morris, 1998). Exposure to victimization in school and the quality of TSR are part of such environmental processes that may interact to produce desired or undesired outcome in youth development. Thus, exposure to a warm and supportive TSR could encourage the healthy psychological and emotional development of students by fostering emotional security and supporting self-confidence, as well as encouraging positive attitudes and engagement in school (Birch & Ladd, 1997; Roorda et al., 2011; Spilt, Hughes, Wu, & Kwok, 2012).

On the one hand, students who feel close to their teachers may be more likely to seek their help if they feel that it can resolve an undesired situation such as peer victimization (Hunter, Boyle, & Warden, 2004). Supportive teachers could mitigate the risk of student depression among victims of aggression by helping them to manage these stressful life events. Studies conducted among typically developing students shows that teacher support does have this buffering effect. For instance, among typically developing students, Huang et al. (2018) and Sulkowski and Simmons (2018) both found that benefitting from a high-quality TSR reduced (i.e., moderate) the negative repercussions of victimization on psychosocial distress, including depressive thoughts and emotional regulation problems. Likewise, Averdijk, Eisner, and Ribeaud (2013) also found that victims who share a good relationship with their teacher reported fewer internalizing symptoms compared to those do not share such a positive relationship.

On the other hand, exposure to conflictual TSR may increase emotional distress, negative attitudes towards school, and disengagement among typically developing students (Archambault, Kurdi, Olivier, & Goulet, 2016; Baker, Grant, & Morlock, 2008; De Laet et al., 2016; Valiente, Swanson, & Lemery-Chalfant, 2012). In the specific case of victimized students, conflict, disagreements, and arguments with the teacher could precipitate the development of depressive feelings as the accumulation of risks usually threatens well-being (Evans, Li, & Whipple, 2013). However, studies have mostly focused on supportive relationships. This is surprising given that, when researchers compare the contribution of TSR warmth and conflict, they usually find that the benefits of warmth disappear when conflicts are considered (Archambault, Vandenbossche-Makombo, & Fraser, 2017; Drugli, 2013; Mason, Hajovsky, McCune, & Turek, 2017). Thus, this study will assess both TSR warmth and conflict as possible protective and aggravating factors for the association between victimization and depression

among students with ID.

When students with ID are considered, some additional elements need to be considered. For instance, whereas youth with ID report a high frequency of victimization and depressive symptoms (e.g., Christensen et al., 2012; Farrington et al., 2011; Maïano et al., 2016, 2018), the quality of their relationships with teachers is comparable to that of other students after accounting for behavior problems and social skills (Blacher, Baker, & Eisenhower, 2009; Eisenhower, Baker, & Blacher, 2007). Nonetheless, due to their more limited levels of intellectual and adaptive abilities, youth with ID tend to present a higher level of functional dependency on adults (e.g., Craven et al., 2015), such as their parents and teachers, making them particularly likely to be influenced by TSR warmth and conflict.

Only one study has assessed the moderating role of teacher support between victimization and depression among adolescents with ID. In this study, Wright (2017) found that supportive relationship with teachers mitigated the risks of depression resulting from being involved in cyber victimization. These results are similar to those reported by Huang et al. (2018) and Sulkowski and Simmons (2018) among typically developing students. Our study aims to extend these results by focusing on more traditional forms of victimization and by contrasting the contribution of TSR warmth and conflict.

1.3. Aims and Hypotheses

Researchers seeking to identify possible moderators of the relation between peer victimization and depression in young populations have focused on typically developing students. Given the high risk of exposure to peer victimization in school and depression of students with ID, identifying areas in which schools can intervene (i.e., through TSR) may prevent the development of depressive feelings during adolescence, a critical developmental period (Eccles, 1999).

The primary goal of this study is to assess the moderating effect of warm and conflictual TSR in the association between peer victimization and depressive symptoms. We also aim to replicate previous findings suggesting a positive association between peer victimization and depressive symptoms, as well as a negative association between the quality of TSR and depressive symptoms. We hypothesize that:

1. Peer victimization will be associated with higher levels of depressive symptoms;
2. TSR warmth will be associated with lower levels of depressive symptoms;
3. TSR conflict will be associated with higher levels of depressive symptoms;
4. TSR warmth will attenuate the relation between peer victimization and depressive symptoms;
5. TSR conflict will amplify the relation between peer victimization and depressive symptoms.

We will assess these associations while controlling for students' ID level and demographic characteristics, including age and gender. For exploratory purposes, we also consider the possible contribution of the interactions between warmth and conflict, as well as between warmth, conflict, and victimization, on depressive symptoms.

2. Materials and Methods

2.1. Participants

This study relies on a sample of 395 students with mild (N = 174) and moderate (N = 180) levels of ID, aged 11–22 years old (M = 15.82, SD = 2.97), recruited from Australian (N = 253) and Canadian (N = 142) secondary schools. Of these students, 86.2% attended a regular school, whereas 13.8% attended a special school for students with disabilities. The Australian sample includes 170 males and 83 females. The Canadian sample counts 70 males and 72 females. A mild ID is defined as having an IQ level ranging from 50 to 70, whereas a moderate ID is defined as having an IQ level ranging from 35 and 49. ID level classifications were obtained from school records, which were complemented by a formal IQ assessment for students whose last IQ testing included in the school records was older than four years. Among participants, 108 (27.3%) had a reported comorbidity (i.e., 54 presented a comorbid autism spectrum disorder, 48 a comorbid genetic syndrome, and 6 both comorbid conditions).

2.2. Procedure

The parents of all participating students signed an informed consent form. As part of this consent procedure, parents granted researchers authorization to obtain their child's most recent level of intellectual functioning from their school records (all students had an official ID classification leading them to a specific type of school placement). In both countries, the measure most commonly used by the schools was the Wechsler Intelligence Scale for Children – Fourth Edition (WISC-IV) (Wechsler, 2003). As per parental consent (which included a specific form for this), the schools provided access to this information directly to a member of the research team who was a registered psychologist. When the most recent assessment included in the school record was older than four years, a trained psychologist

(or an upcoming psychologist receiving appropriate supervision) from the research team or recruited by the research team for this purpose was assigned to administer a new assessment to the student. These assessments were conducted using either (depending on the age and language ability of the student) the WISC-IV, the Wechsler Adult Intelligence Scale – Fourth Edition (Weschler, 2008), or the Leiter international performance scale-revised (Roid & Miller, 1997).

After having obtained parental consent to participate in the study, trained research assistants met with students. Using a PowerPoint presentation, research assistants explained the objectives and procedures of the study, the voluntary nature of the participation, and participants' right to withdraw at any time. Students were thus asked to voluntarily and actively consent in order to participate. Using sample questions for each section of the questionnaire, the research assistants provided students with explanations on how to use the different response scales (using graphical displays and pictograms). Questionnaires were completed over one to two school days in small groups (groups of students with mild levels of ID were typically larger, e.g., up to 8 students, than groups of students with moderate levels of ID, e.g., 1 to 2 students), using a read-aloud assisted procedure.

Research assistants were either graduate students with a background in psychology, education, or psycho-education (in Canada), or trained professionals from one of those backgrounds. They were all, as per their training, already familiar with populations with ID, and received an intensive day of training on the specific test battery used for purposes of the present study, and provided with extensive materials (including a power point and graphical representation of each response scales and lists of synonyms) and examples on how to help students understand questions without influencing their responses. Students were encouraged to ask questions and received help from research assistants to answer the questionnaires, so that the testing situation generally was conducted in a climate of open discussion between the students and the research assistants. Whenever students remained unable to understand a specific question, they were instructed to check a box indicating their lack of understanding (this happened 4.1% to 7.1% of the time across items, M = 5.0%). For this study, we treated these responses as missing values.

2.3. Measures

In the present study, we focus on the student self-reported measures of TSR, victimization, and depressive symptoms. For this study, depression was assessed with a measure already validated for youth with ID (Maïano et al., 2011b), while other measures were adapted for self-report completion by youth with ID following procedures similar to those used for the adaptation of other measures for this population (Maïano et al., 2009, 2011a, 2011b). Questionnaire items were maximally simplified, and response scales were associated with graphical depictions for each word to facilitate understanding. This adaptation process was quite extensive, and conducted in collaboration between members of the research team familiar with this process and population, and school personnel (teachers, psychologists, and psycho-educators). A first version of the adapted instruments was piloted with a small number of youth (aged 13 to 21) with mild to severe levels of ID (n = 8 in Canada and 10 in Australia), their teachers, and their parents. In this first pilot, we contrasted distinct adaptation format (i.e., distinct formulations for the items and response scales) and distinct response scale format (i.e., words only, pictorial scale only, and combination of both; different graphical scales were also considered). This first pilot led us to an improved version of the items (using a combined verbal and graphical response format), and the decision to exclude students with severe levels of ID from the main data collection process. A second pilot study, involving an additional sample of students (n = 6 in Canada and 10 in Australia), their parents and their teachers, was used to verify the improved version of the questionnaires, and to fine tune them for the final administration. This second pilot supported the adequacy of these questionnaires.

2.3.1. Peer victimization. Students report of the frequency to which they have been exposed to acts of victimization were assessed using a scale initially developed by Janosz, Bouthillier, Bowen, Chouinard, and Desbiens (2007) in a large sample of Canadian primary and secondary students. The victimization scale includes 17 items covering physical, verbal, and relational victimization (i.e., "Another student called me names or was rude to me") rated on a 6-point response scale ranging from "never" to "5 times or more". The scale presents satisfactory scale score reliability (α = 0.82; Janosz et al., 2007). Detailed results on rates of prevalence reported by the students are presented in the Appendix.

2.3.2. Depressive symptoms were initially measured by the Center for Epidemiologic Studies Depression Scale adapted for adolescents with an Intellectual Disability (CES-D-ID) (Maïano et al., 2011b). This regular version of this scale was initially developed by Radloff (1977), which was a 20-

item measure that asks caregivers to rate how often over the past week they experienced symptoms associated with depression. The resulting instrument includes 14 items (e.g., "I feel depressed") rated on a four-point response scale ranging from "I totally disagree" to "I totally agree." The scale presents satisfactory scale score reliability (α = 0.90; Maïano et al., 2011b).

2.3.3. Teacher-student relationships. The short form Morin, Janosz, and Larivée (2009) of the Teacher-Student Relationship Scale (Pianta & Steinberg, 1992) focuses on students' perception of the quality of their relationship with their teachers in terms of warmth and conflict. This scale includes 13 items assessing either TSR warmth (6 items; i.e., "I get along well with my teacher") or conflict (7 items; e.g., "My teacher does not respect me") and rated on a five-point scale ranging from "totally disagree" to "totally agree." The pictograms associated with this response scales had been previously validated for the assessment of physical self-conceptions among youth with ID (Maïano et al., 2009, 2011a). These scales present satisfactory internal consistency (warmth α = 0.76; conflict α = 0.84; Morin, Maïano, Marsh, Nagengast, & Janosz, 2013).

2.3.4. Covariates. Students self-reported their gender (0 = male; 1 = female) and their age (coded in years from 11 to 22 years old). Student ID level (coded 0 for mild or 1 for moderate) was obtained through the school official records and supplemented by formal IQ assessments as noted above.

2.4. Analyses

Missing responses on all variables (ranging from 0.76% to 19.24%) are reported in Table 1, together with information related to descriptive statistics, correlations, and scale score reliability estimates form this study. This information shows that no variable had a value of skewness or kurtosis departing greatly from 2 (and none departed from 3), with the sole exception of victimization, which had a kurtosis of 2.953, reflecting the high proportion of non-victimized students. To account for missing data and non-normality, all analyses were conducted using Full Information Maximum Likelihood (FIML; Enders, 2010) procedures and using a Maximum Likelihood estimator robust to non-normality (MLR), as implemented in the Mplus 8.3 statistical package (Muthén & Muthén, 2019).

Hypotheses were tested using hierarchical multiple regression analyses to evaluate the role of victimization, TSR (warmth and conflict), and their interaction in the prediction of depression in students with ID. In the analyses, scale scores centered at the mean (thus creating a score with a mean of 0 without changing the distribution and scaling of the scores) were used for all psychometric instruments. All analyses were controlled for gender (coded 0 for males and 1 for females), ID level (coded 0 for mild or 1 for moderate) and age (coded in years). The moderating role of TSR components (warmth and conflict) on the relation between victimization and depression were assessed via tests of interaction effects (Marsh, Hau, Wen, Nagengast, & Morin, 2013). Statistically significant interaction effects were followed up by simple slope analyses where the effect of the predictor was calculated at low (-1*SD*), average (*M*), and high (+ 1*SD*) levels of the moderators (Marsh et al., 2013). Regressions were performed in five blocks. The first block included demographic controls (gender, ID level, and age). The second block included the measure of victimization. The third block included both TSR components (warmth and conflict). The fourth block included the two-way interactions between all three predictors (i.e., represented as the product of each pair of predictors). The fifth block included the three-way interaction between TSR warmth, TSR conflict, and victimization.

3. Results

Results from the hierarchical multiple regressions are reported in Table 2. These results first show that the effects associated with each block of predictors remained essentially unchanged following the inclusion of the additional blocks of predictors. The demographic controls explained a total of 4.7% of the variance in depression due to the negative association between age and levels of depression. Neither gender nor ID level was found to present a statistically significant association with depression. Second, victimization was found to present a statistically significant association with depression, which accounted for an additional 9.8% of the variance in depression. Third, TSR warmth was not found to present a statistically significant association with depression, whereas TSR conflict was found to be positively related to depression, explaining an additional 14.2% of the variance in depression. Fourth, both two-ways interactions involving TSR conflict proved to be significantly associated with depression, explaining an additional 3.0% of the variance in depression. However, neither the two-way interaction between TSR warmth and victimization, nor the three-way interaction between TSR warmth, TSR conflict, and victimization proved to be statistically significant predictors of depression.

To better understand these interaction effects, we examined the simple slopes associated with

the effects of TSR warmth and victimization at low (-1SD), moderate (M) and high (+1SD) of TSR conflict. Given the lack of statistical significance of the three-way interaction, these simple slopes were examined in a model corresponding to that of Block 4 (Table 2). The decision to examine these interactions while considering TSR conflict as the moderator was predicated on the fact that TSR conflict interact with both of the other predictors. This thus provided a more parsimonious interpretation of the results focused on a single moderator. Simple slope analyses first revealed a statistically significant negative association between TSR warmth and depression, but only when levels of TSR conflict were low, rather than moderate or high. These results are graphically illustrated in Figure 1. Second, these analyses also showed that the positive association between victimization and depression tended to decrease as a function of increases in TSR conflict from low, to moderate and to high. These results are graphically illustrated in Figure 2.

As a final verification, we also assessed whether any of the relations identified in this study differed as a function of participants' gender, age, and ID level (via the incorporation of interaction effects between these variables, the predictors, and the two-way interactions previously tested). These additional analyses showed that none of the associations identified in this study differed as a function of gender, age, or ID level[1].

4. Discussion

This study sought to investigate the possible protective or aggravating role of TSR warmth and conflict on the association between exposure to peer victimization and depressive symptoms among students with mild and moderate levels of ID. Given the rates of peer victimization (e.g., Christensen et al., 2012; Maïano et al., 2016) and depression (e.g., Berg et al., 2015; Maïano et al., 2018) reported in this population, and the possibly key role that teachers and teacher-based interventions could play in helping or hindering their development (e.g., Craven et al., 2015; Huber et al., 2012), clarification of these associations appeared to be critically important. The present study is among the very few that has sought to acquire knowledge on these important interactions between environmental and individual features that have the potential to cultivate the psychological capabilities of youth with ID, which could lead to a more fulfilling life.

As predicted in Hypothesis 1, peer victimization was found to be associated with higher levels of depressive symptoms, beyond the contribution of demographic characteristics. This finding is consistent with those from numerous studies conducted among samples of typically developing students (Farrington et al., 2011; Hawker & Boulton, 2000), as well as from the few previous studies of victimization focusing on students with ID (Berg et al., 2015; Wright, 2017). This result thus suggests that students with ID may undergo the same psychological process as typically developing students following exposure to victimization. Among typically developing students, the pathway leading from victimization to depressive symptoms is presumed to involve a learned helplessness process: Students' inability to stop the victimization experience on their own may lead to decreases in self-esteem and social exclusion, in turn generating feelings of uselessness, failure, and depression (McLaughlin et al., 2009). Observing a similar type of association between victimization and depressive symptoms among a sample of youth with ID does not necessarily prove that this pathway would remain the same. Nonetheless, this observation suggests that similarity is likely, and reinforce the need for further research focusing on the mechanisms underpinning the action of peer victimization among this vulnerable population. In this study, our focus was on TSR.

The results involving TSR partially confirmed Hypothesis 2, which anticipated that warm and supportive relationships with teachers would relate to fewer depressive symptoms among youth with ID. In this study, we found that students who felt that they could trust, talk to, and spend time with their teachers felt less depressed, but only if they also reported low levels of TSR conflict. In contrast, when students reported that they disliked, argued, and got angry with their teachers, sharing a warm and supportive relationship with these teachers was no longer associated with lower levels of depression. Moreover, as expected by Hypothesis 3, TSR conflict was systematically associated with a higher level of depressive symptoms among students with ID. First, these results suggest that students can share warm and conflictual relationships with their teachers simultaneously. This result is also consistent with studies showing that up to one out of four students report higher than average warmth and conflict with

[1] A final verification was made to verify whether any of these associations differed as a function of youth country of origin (coded 0 for Australia and 1 for Canada), which was not found to be the case.

their teachers (Wang & Eccles, 2013; Wu, Hughes, & Kwok, 2010). Our study demonstrates that students with ID can also report this type of inconsistent TSR.

Second, these findings indicate that the negative repercussions of TSR conflict are greater than the positive contribution of warmth. Indeed, whereas TSR conflict was found to be systematically associated with higher levels of depressive symptoms, TSR warmth was only found to be related to lower levels of depressive symptoms under conditions of low TSR conflict. When assessing the respective contribution of TSR warmth and conflict, other studies have also found that conflict tended to be associated with internalizing problems and school outcomes such as engagement and achievement, whereas warmth was not (Archambault et al., 2017; Drugli, 2013; Mason et al., 2017). Interestingly, Mason et al. (2017) showed that TSR conflict tends to remain stable from one grade to the next, even if students change teachers. In contrast, TSR warmth tends to vary more greatly across grades. Thus, TSR warmth appears to depend to a greater extent on the ability of specific teachers to create a positive relationship with their students, whereas conflict may be more dependent on students' problematic behaviors and dispositions (Birch & Ladd, 1998). Although no study has assessed students with ID in this regard, studies conducted among typically developing youth generally find that those who share conflictual relationships with their teachers also tend to display more disruptive, hyperactive, and oppositional behaviors (Olivier, Archambault, & Dupéré, 2018). If proved correct, this hypothesis would reinforce the importance for teacher interventions to focus on the avoidance of conflict with students as a possibly even more critical determinant of change in developmental trajectories than the nurturing of warm and supportive relationships, at least among students with ID. Unfortunately, information about student problematic behaviors was not considered in the present study, suggesting the need for future investigation of this hypothesis.

Finally, and contradicting Hypothesis 4 and 5, TSR warmth was not found to mitigate the risk that being victimized by peers represented in terms of depression among students with ID, and TSR conflict was not found to accentuate the association between peer victimization and depressive symptoms. Rather, our results showed that exposure to more conflictual TSR decreased the strength of association between victimization and depressive symptoms, although being victimized remained a risk factor of depression at all levels of TSR conflict. In other words, our results showed that the accumulation of relational risks in the environment did not exponentially increase negative outcomes as we anticipated. Students exposed to either one of these types of conflicts (TSR or victimization) seemed to eventually get used to having negative interactions with their social surroundings. As a result, further accumulations in sources of conflict became less potent determinants of depression. Similar to a vaccine, this result suggests that sharing conflictual relationships with teachers may come to inoculate students to the effects of further exposure to relational adversity. Clearly, this inoculation hypothesis would require further investigations to understand the mechanisms that underpin the combined actions of these two types of relational difficulties. More importantly, research is needed to assess the extent to which this result would generalize to new samples of students with ID, to samples of students experiencing other types of disabilities, and to samples of typically developing youth.

4.1. Limitations

This study bears a few limitations. First, all questionnaires were student-reported. Self-reported scales have the advantage of capturing individual perceptions that likely affect student well-being the most. However, it also limits the generalizability of results. Particularly in this study, the different levels of ID characterizing the participating students could have impeded their ability to understand the items. For instance, existing research has reported that students with ID may struggle to accurately interpret their peers' benign and hostile intentions (Leffert, Siperstein, & Widaman, 2010). In contrast, others have also argued that students who are unaware that they are victimized are less likely to suffer from these maltreatments (Crick & Bigbee, 1998), making it doubly important to rely on self-reports. In this study, questionnaires not previously validated for use with a population with ID (TSR, victimization) were carefully adapted, and extensively piloted, to ensure their adequacy, following procedures previously found to be successful in achieving accurate self-reports of internals states (e.g., self-concepts, depression) among this population (e.g., Maïano et al., 2009, 2011a, 2011b). In addition, the assisted data collection process was designed to ensure that only items that were clearly understood were responded to, and to help in maximizing the degree to which all items were understood. Still, it would seem important for future research to more carefully assess the psychometric properties of these measures, and possibly to contrast them with observations, parental reports, and teacher reports in order

to bring a complementary perspective on the present results.

Second, this study relies on a cross-sectional design, which prevents from making predictions about the effect of victimization on depression over time, or the true directionality of the associations between these two constructs. Relying on longitudinal data would overcome this limitation and allow controlling for students' prior level of depressive symptoms.

5. Conclusion

This study contributes to improving our understanding of the factors that come into play in the development of depressive symptoms among youth with ID. Importantly, the present results suggest that students with ID may be especially sensitive to the negative relationships that they share in school, more so than to exposure to warm and supportive relationships. Thus, being the victim of verbal, physical, and relational aggression perpetrated by peers, as well as sharing conflictual relationships with teachers were both found to be critical risk factors associated with depressive symptoms. In contrast, sharing warm relationships with their teachers was only linked to reduced levels of depressive symptoms in the absence of conflictual interactions with teachers. Yet, despite this increased sensitivity to negative social interactions, the results also showed evidence of habituation, or inoculation, revealing a plateau to the cumulative effects of multiple sources of relational difficulties. Together, these results suggest that teachers and school practitioners who wish to reduce depressive symptoms in students with ID should primarily focus on limiting the number of negative interactions they encounter in school. Our results, although they ought to be replicated, suggest that preventing peer victimization and teacher-student conflict are among primary intervention targets to implement for this population.

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Table 1
Descriptive Statistics and Correlations

	Depression	Sex	ID level	Age	Victimization	TSR Warmth	TSR Conflict
Descriptives							
Mean	1.914	.607	.519	15.694	.789	3.745	2.156
Standard Deviation	.405	.489	.500	2.166	1.066	.823	.871
Skewness	−.014	−.440	−.078	.645	1.823	−.471	.716
Kurtosis	−.160	−1.815	−2.005	−.255	2.953	−.040	.158
% missing	13.04%	0.76%	8.35%	14.18%	19.24%	14.18%	17.97%
Cronbach's alpha (α)	.746	---	---	---	.945	.828	.713
Correlations							
Depression							
Sex	−.021						
ID level	−.101*	.043					
Age	−.188*	−.097*	.169*				
Victimization	.296*	.049	.066	−.033			
TSR Warmth	−.172*	−.061	.313*	.173*	.078*		
TSR Conflict	.391*	.006	−.061	−.100*	.283*	−.403*	

Note. *Correlation is significant at the .05 level; ID level = intellectual disability level (0 = mild; 1 = moderate); sex = sex of the student (0 = female 1 = male); TSR = teacher-student relationship; (one-tailed)

Table 2
Results from the Hierarchical Multiple Regression Analyses Predicting Depressive Symptoms.

	Bloc 1		Bloc 2		Bloc 3		Bloc 4		Bloc 5	
Predictors	*b* (s.e.)	β	*b* (s.e.)	β	*b* (s.e.)	β	*b* (s.e.)	β	*b* (s.e.)	β
Sex	−.013 (.050)	−.016	−.028 (.047)	−.035	−.009 (.042)	−.011	−.019 (.042)	−.023	−.019 (.042)	−.023
ID Level	−.048 (.050)	−.060	−.073 (.049)	−.091	−.036 (.048)	−.045	−.044 (.047)	−.054	−.043(.047)	−.054
Age	−.038 (.013)**	−.197	−.034 (.012)**	−.179	−.026 (.012)*	−.136	−.027 (.012)*	−.141	−.026 (.012)*	−.137
Victimization			.116 (.017)**	.313	.073 (.017)**	.198	.084 (.018)**	.227	.091 (.017)**	.248
TSR Warmth					−.005 (.031)	−.011	−.021 (.033)	−.042	−.024 (.031)	−.049
TSR Conflict					.180 (.029)**	.390	.190 (.029)**	.412	.188 (.028)**	.407
Vic. * Warmth							−.005 (.017)	−.012	−.016 (.022)	−.039
Vic. * Conflict							−.038 (.014)**	−.115	−.047 (.017)**	−.144
Warmth * Conflict							.075 (.021)**	.169	.073 (.021)**	.165
Vic * Warmth * Conflict									.018 (.016)	.055
R^2	.047		.145		.287		.317		.319	
Change in R^2			.098		.142		.030		.002	

Note. * $p \leq .05$; ** $p \leq .01$; ID level = intellectual disability level (0 = mild; 1 = moderate); sex = sex of the student (0 = female 1 = male); TSR = teacher-student relationship; *b* = unstandardized regression coefficient; s.e. = standard error of the coefficient; β = standardized regression coefficient; R^2 = proportion of variance in depressive symptoms explained by the model.

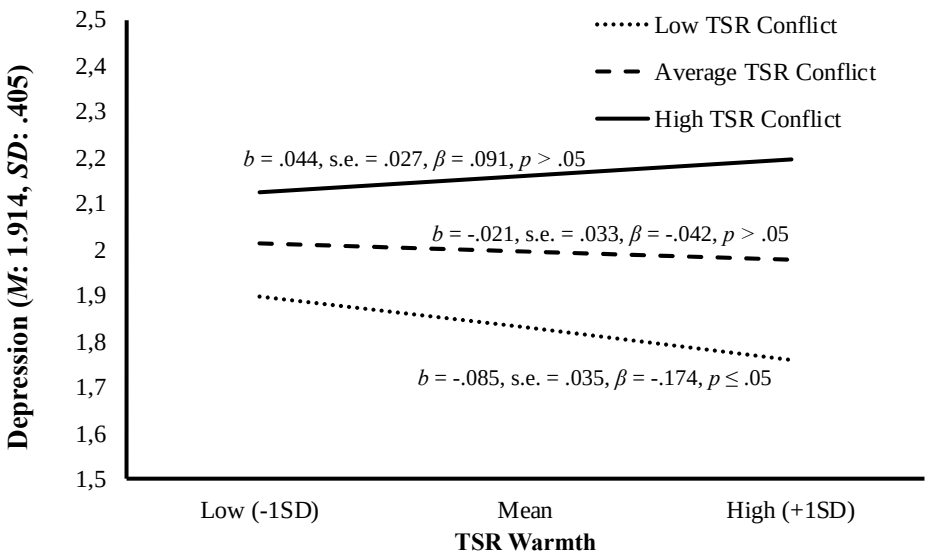

Figure 1
Simple slopes depicting the effects of Teacher-Student Relationships (TSR) warmth on depression at different levels of TSR conflict

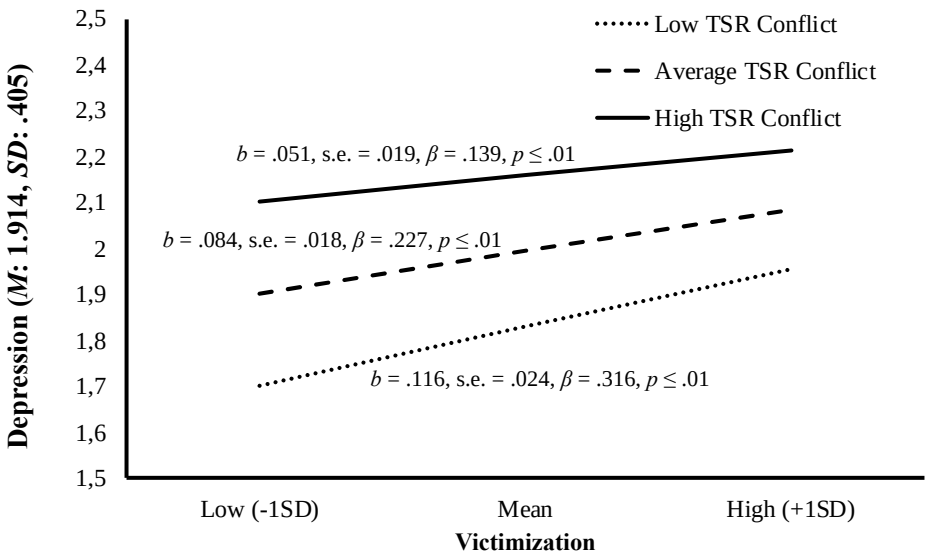

Figure 2
Simple slopes depicting the effects of Victimization on depression at different levels of Teacher-Student Relationships (TSR) conflict

Appendix. Prevalence of Victimization

	Never	1 Time	2 Times	3 Times	4 Times	5+ Times
Something of mine was stolen	65.7%	15.9%	6.5%	4.0%	1.7%	6.2%
An adult was rude to me	76.8%	8.8%	2.8%	4.0%	2.3%	5.4%
Another student threatened me	57.7%	16.3%	7.4%	6.0%	3.4%	9.1%
Another student deliberately broke something of mine	70.9%	13.7%	6.0%	3.1%	2.3%	4.0%
Another student was rude or laughed at me	51.3%	18.7%	8.5%	7.6%	3.1%	10.8%
An older student annoyed or teased me	61.1%	13.1%	6.5%	4.8%	4.3%	10.2%
Another student made fun of me for making friends with a student others don't like	65.0%	12.3%	7.1%	4.6%	3.1%	8.0%
Friends told me they will stop being my friend if I didn't do what they said	65.9%	12.0%	6.4%	5.2%	2.9%	7.6%
Another student called me names or was rude	49.3%	15.4%	10.8%	7.1%	4.6%	12.8%
Another student didn't want me to play with their friends	64.5%	13.8%	3.7%	4.3%	3.2%	10.6%
Another student said mean thing about me to other students	54.8%	14.7%	7.6%	7.1%	3.4%	12.4%
Another student took something of mine without asking	58.6%	14.3%	7.7%	6.3%	4.0%	9.1%
Another student physically attacked me	70.7%	11.4%	4.3%	3.1%	2.6%	8.0%
An adult from school pushed or hit you	83.9%	7.1%	3.4%	2.5%	0.6%	2.5%
Another student made me give them something of mine	76.1%	8.5%	5.4%	2.8%	2.8%	4.3%
Another student threatened to hurt me with an object	74.4%	9.4%	4.8%	4.8%	2.3%	4.3%
Another student pushed, hit or kicked me	66.7%	12.0%	5.1%	3.7%	4.0%	8.5%
Any Victimization	22.1%	19.6%	10.6%	10.1%	6.1%	31.6%
Any Relational/Verbal Aggression	23.2%	19.6%	10.3%	10.3%	7.0%	29.6%
Any Physical Aggression	53.5%	16.0%	6.2%	6.7%	5.0%	12.6%