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The Intent Behind Bullying: an Application and Expansion of the Theory of Planned Behaviour

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Abstract

An expanded Theory of Planned Behaviour (TPB; Ajzen, *Organizational behavior and human decision processes 50*:179–211, 1991, Ajzen, *Journal of Applied Social Psychology 32*:665–683, 2002) which incorporates affective, moral, and personal belief variables with Ajzen's original social, behavioural, and cognitive factors has not yet been applied to bullying and bully-victimization in junior high school students. This study addresses this gap by applying this expanded version of TPB with a sample of 342 junior high school students (M_{age} = 12.27, 207 girls and 135 boys) from seven schools from a large Western Canadian municipality. Overall, 11.08% of participants were classified as students who bully others ("bullies") and 13.21% as students who bully others and are also victimized themselves ("bully-victims"), with boys reporting higher levels than girls. Structural equation modelling was used to test a TPB-informed model to explain the relations between psychological adjustment, self-concept, attitude and beliefs about aggression, perceived control, intention, and bullying behaviour. The final models accounted for 40% of the variance in bullying and 34% of the variance in bully-victimization, although the models differed. Both bullying behaviour and bully-victimization were predicted by less support for the victim, normative beliefs supporting aggression/bullying, and less well-developed moral reasoning about aggression, which was, in turn, predicted by higher levels of sensation seeking and hyperactivity (both) and depression and lower ego strength (bully-victim only). For bullying behaviour, there was a direct effect of internalizing behaviour on control. In contrast, attitude and beliefs about aggression and anger control mediated the relations between internalizing/externalizing behaviour and bully-victimization. Implications of this work are discussed, including anti-bullying attitude and belief initiatives.

Keywords Bullying · Bully-victimization · Theory of Planned Behaviour · Psychosocial functioning · Junior high school

Although bullying and aggression in childhood and adolescence have received much research and media attention, and our knowledge and understanding of bullying have increased substantially, bullying continues to permeate schools and neighbourhoods. Children and adolescents continue to be subjected to intentionally cruel behaviour by their peers, including physical attacks, name-calling, threats, verbal abuse, social exclusion, and rumour spreading both at school and in online environments. Specifically, 75% of people report being affected by bullying in their lifetime, and over one million Canadian students are bullied each week (PREVNet, n.d.).

Bullying is defined as a form of repeated aggressive behaviour over time and involves a power imbalance between the bully and the victim (Rigby, 2005). Rates of bullying differ depending on an individual's role in bullying, such as being someone who bullies others ("bully") versus someone who bullies others and is also victimized themselves ("bully-victim"). Individuals are typically categorized as a *pure bully* when their scores are one standard deviation above the mean on a measure of bullying, but their scores are low on victimization (Crick et al., 2002; Leenaars & Rinaldi, 2010). On the other hand, *bully-victims* score more than one standard deviation above the mean on bullying and victimization (Marini et al., 2006).

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The frequency of bullying in the existing literature ranges from 3.4 to 49.5% (Baldry, 2004; Ma et al., 2009) and appears to be moderated by sex. Overall, boys tend to report higher levels of bullying than girls (e.g., Ma et al., 2009; Pepler et al., 2008; Thornberg and Wanstrom, 2018). Although many studies have examined the prevalence of bully-victims, reported prevalence rates have been variable. Rates range from as low as 1.89 (Solberg et al., 2007) to 67.9% (Mutiso et al., 2019) and tend to vary depending on the frequency with which individuals both bully others and are victims.

Bullying Behaviour and Psychosocial Functioning

A plethora of studies exists in which the relationship between bullying behaviour and psychosocial functioning has been investigated. Overall, it is evident that individuals who bully others, especially bully-victims, exhibit psychosocial maladjustment compared to individuals uninvolved in bullying behaviour. Engaging in bullying behaviour leads to higher truancy rates and drop-out, low academic achievement, and higher incidence of mental health problems, criminal behaviour, and unemployment (Bender & Lösel, 2011; Dupper & Meyer-Adams, 2002; Olweus, 1989, 2011). Individuals who bully others have also been found to have high rates of suicide and suicidal ideation (Ivarsson et al., 2005; Klomek et al., 2007; Sandoval-Ato et al., 2018). A meta-analysis of the literature provides clear evidence of a relationship between externalizing problems (e.g., conduct problems, hyperactivity) and bullying behaviour (Card et al., 2008). Internalized behaviour (e.g., depression, anxiety, personal adjustment) has also been related to indirect forms of bullying and aggression only (Leenaars & Rinaldi, 2010; Wang et al., 2019).

Of all the individuals involved in bullying behaviour, bully-victims appear to have the poorest psychosocial outcomes. In terms of social functioning, bully-victims were the most rejected group among their peers and had the lowest popularity ratings (Farmer et al., 2010; Warden & Mackinnon, 2003); were more socially isolated than bullies, victims, and uninvolved children (Mutiso et al., 2019; Georgiou & Stavrinides, 2008; Shin, 2010); and experienced more relational problems than bullies or uninvolved students (Marini et al., 2006).

Bully-victims also experienced high rates of externalizing and internalizing problems (Kozasa et al., 2017). Of those individuals involved in bullying behaviour, bully-victims exhibited more externalizing symptoms than victims and uninvolved adolescents, including drug and alcohol abuse (Ivarsson et al., 2005), delinquency, and aggression (Menesini et al., 2009; Mutiso et al., 2019). Bully-victims are more temperamental than individuals who bully others, victims, and uninvolved students (Georgiou & Stavrinides, 2008); exhibit a higher risk for conduct problems, hyperactivity, and impulsivity (Gini, 2008; Leenaars & Rinaldi, 2010); and have higher aggressive impulsivity (O'Brennan et al., 2009). Further, bully-victims were found to be at a higher risk for depression and suicidal ideation (Pranjic and Bajraktarevic, 2010), as well as non-suicidal self-injury (Esposito, Bacchini, & Affuso, 2019). Bully-victims were also found to have more internalizing problems, were more withdrawn, and had more somatic complaints and depressive symptoms than those who bully and uninvolved adolescents (Menesini et al., 2009).

Reactive and Proactive Aggression

"Reactive aggression is angry and retaliatory, and proactive aggression is dominant, aggressive behavior deployed to achieve specific goals" (Underwood, 2005, p. 534). Both reactive and proactive aggression is correlated with bullying behaviour (e.g., Fossati, et al., 2009; Roland & Idsøe, 2001); however, in some cases, proactive aggression tends to be a better predictor of bullying behaviour (Camodeca et al., 2002; Camodeca & Goossens, 2005). Although bully-victims scored higher than those who bully only on reactive and proactive aggression and both those who bully and bully-victims were overrepresented in the reactive-proactive (high on both) group, only those who bully were overrepresented in the reactive- and proactive-only groups (Salmivalli & Nieminen, 2002). Unnever (2005) similarly found that bully-victims scored higher than those who bully on proactive but not reactive aggression.

Attitudes and Beliefs About Aggression

Along with psychosocial variables, cognitive factors play a role in bullying behaviour. A normative belief is defined as "…an individual's own cognition about the acceptability or unacceptability of a behaviour. Normative beliefs serve to regulate corresponding actions by prescribing the range of allowable and prohibited behaviours" (Huesmann & Guerra, 1997, p. 409). Huesmann and Guerra argued that aggressive behaviour and normative beliefs about aggression develop in a reciprocal pattern. Being more approving of aggression leads to a higher level of aggression, and a higher level of aggression leads individuals to be more approving of aggression. In general, beliefs supporting aggression are related to increased aggression and bullying behaviour (Chaux et al., 2009; Duffy & Nesdale, 2009; Guerra et al., 2011).

"Morality involves one's capacity to distinguish behaviours that are right and wrong and moral reasoning entails

the thinking processes employed when deciding whether a behaviour is morally acceptable" (Quinn et al., 1994; Shaffer, 2000; Murray-Close, et al., 2006, p. 346). Murray-Close et al. (2006) found that overall, children's moral judgments of aggression were significantly associated with their aggressive behaviour level. Those who viewed aggression as morally wrong were less likely to engage in aggression. In another study, moral beliefs supporting bullying was associated with increased verbal, physical, and cyberbullying behaviour (Williams & Guerra, 2007).

Theoretical Framework

Given that bullying behaviour is multi-determined, it is unlikely that any single explanation will allow us to understand its complexity. This is consistent with the World Health Organization's (WHO, 2020) argument for an ecological model of violence, which considers the understanding of individual, relationship, social, cultural, and environmental factors. One theoretical lens from which to study bullying behaviour and bully-victimization with a young adolescent population is the *Theory of Planned Behaviour* (TPB). Ajzen (1991, 2002) proposed TPB as an explanation of volitional behaviour from a social psychology perspective. Ajzen argued that behaviour could best be predicted by behavioural intention and perceived behavioural control, which in turn are predicted by attitudes and beliefs about the behaviour. In a meta-analysis of 185 independent studies of TPB, Armitage and Conner (2001) found good support for the application of TPB to a wide range of behaviours.

Although Ajzen's original theory considers social, behavioural, and cognitive factors, others have argued that additional factors such as moral and personal beliefs and affective variables should also be considered when predicting behaviour. Specifically, Hagger and Chatzisarantis (2005) found support for a hierarchical model of TPB, which took into account antecedents of the constructs of TPB, such as social approval of norms, and affective factors. Results of the analyses supported the distinction between attitudes, subjective norm, and perceived behavioural control; however, there was no support for a direct path from perceived behavioural control to behaviour as Ajzen (1991) posited. Further, the addition of antecedents to the model significantly improved the overall fit of the model. Aarts et al. (1998) similarly argued for the inclusion of antecedents, such as moral beliefs, self-concept, and affective variables.

Given that bullying is defined as a form of aggressive behaviour repeated over time (Rigby, 2005), a theory like TPB may add to our understanding of bullying. As implied by the name, the emphasis in TPB is on volitional, planned behaviour. Bullying, for the most part, can be considered planned behaviour, especially when it occurs repeatedly over time. It follows that the application of TPB with the addition of antecedents, such as psychological adjustment and self-concept, to bullying behaviour, may provide an additional framework from which we can add to the explanation of bullying, and hopefully to the prediction and control of it. In fact, in a study of cyberbullying behaviour in adolescents, Heirman and Walrave (2012) found strong support for TPB in explaining intention to cyberbully (accounting for 44.8% of the variance) and actual cyberbullying perpetration (accounting for 33.2% of the variance).

The Present Study

Given the empirical support for TPB with a variety of behaviours, it follows that examining bullying from a TPB perspective may aid in the explanation of bullying in adolescence. Further, given the established relationships between psychological adjustment, self-concept, and bullying, and between attitudes and beliefs and bullying as previously discussed, there is reason to expect that TPB may add to our understanding of bullying behaviour in adolescence. The proposed model (see Figure 1) expands on Ajzen's (1991, 2002) original model of TPB by including antecedents of attitudes and beliefs and perceived control as proposed by Aarts et al. (1998) and Hagger and Chatzisarantis (2005).

The study's main objective was to develop and test the proposed model (see Figure 1) based on TPB that will describe the relationship between psychological adjustment, self-concept, attitude and beliefs about aggression, perceived control, intention, and bullying behaviour. Hawley (2007) argued that aggression can sometimes be adaptive and does not necessarily indicate deviance or delinquency. As such, it is hypothesized that there are two similar yet distinct pathways to bullying behaviour. Individuals who exhibit good psychological adjustment (low levels of depression, mania, and anxiety, low to moderate hyperactivity, sensation seeking), and high self-concept (high self-esteem, self-reliance, and ego strength, and low sense of inadequacy), with positive attitudes and beliefs about bullying (low provictim, low to moderate moral reasoning, and high approval of bullying), high perceived control (high anger control and internal locus of control), and high proactive intention (low reactive) will exhibit high bullying behaviour. This pathway was expected to be more typical of those who bully others than bully-victims.

Consistent with Vaughn and Santos' (2007) position, who argued that victims who are also aggressors (or bully-victims) are likely different from pure aggressors, it was hypothesized that there is a somewhat divergent pathway for bully-victims. The second hypothesized pathway suggests that individuals who exhibit poor psychological adjustment (moderate to high levels of any of the indicators) and

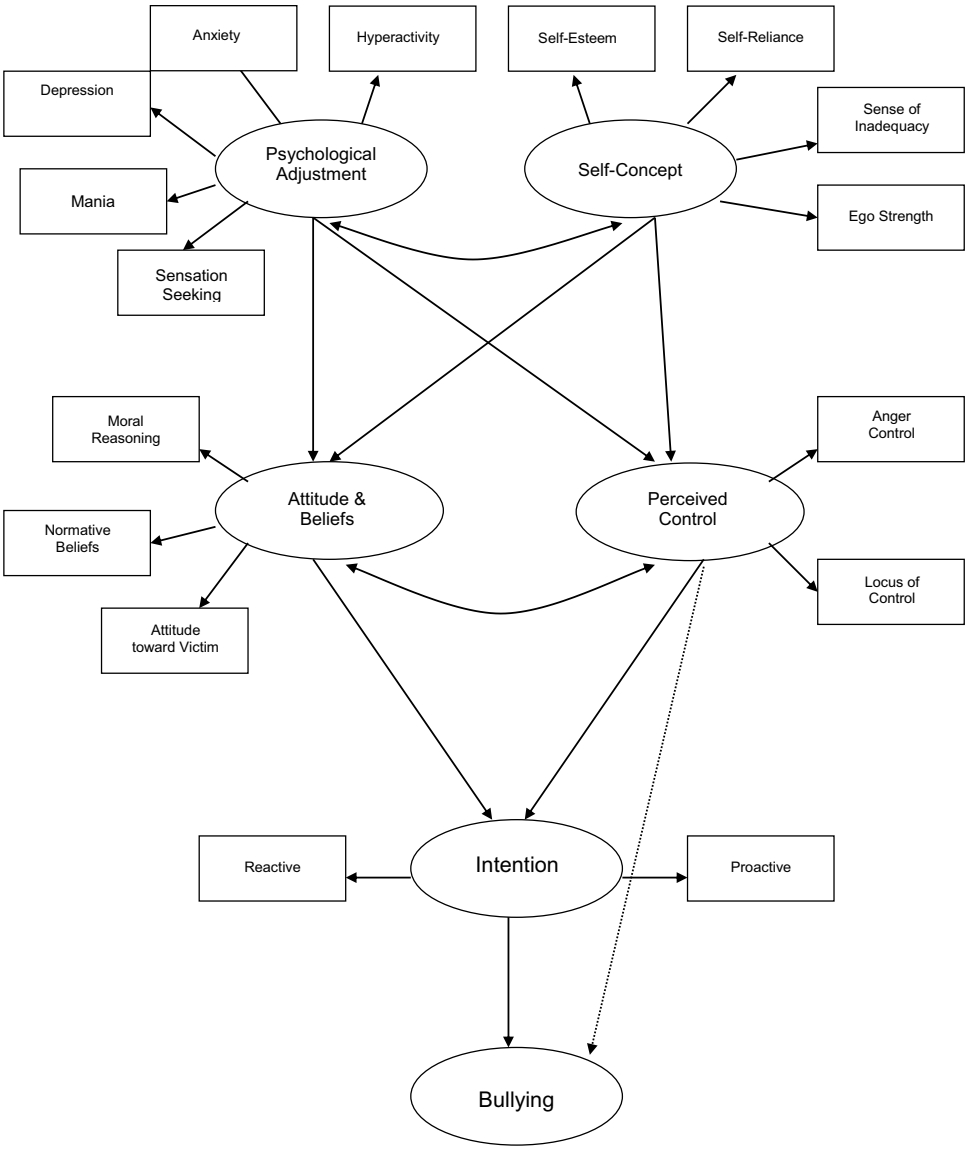

Figure 1 Proposed structural equation model applying TPB to bullying behaviour.

low self-concept (low self-esteem, self-reliance, and ego strength, and high sense of inadequacy), with negative or more neutral attitudes and beliefs about bullying (moderate to high provictim, low moral reasoning, and low to moderate approval of bullying), as well as low perceived control (low anger control and external locus of control), and high reactive intention (low proactive) are more likely to exhibit bullying behaviour. This pathway was expected to be more typical of bully-victims.

Methodology

Participants

Three hundred and forty-two (207 girls and 135 boys) junior high school students participated in this study. Participants were drawn from seven schools from a large Western Canadian municipality. One hundred and ninety-three junior high school students were in Grade 7, and 149 were in Grade 8 with a mean age of 12.72 years. Information regarding socioeconomic status and ethnicity was collected from 225 parents of the participating students as part of the more extensive study. According to this data, the sample was predominantly middle class with 86.7% Caucasian, 8.4% Asian-Canadian, 3.1% East Indian-Canadian, and 1.8% Latino-Canadian.

Measures

Psychological Adjustment

Clinical scales of the *Behaviour Assessment Scale for Children-2*, Self-Report of Personality-Adolescent (BASC-2

SRP-A; Reynolds & Kamphaus, 2004) for sensation seeking, mania, depression, anxiety, and hyperactivity were used as a measure of psychological adjustment. The individual scales of the BASC-2 SRP-A have been shown to have good internal consistency and reliability, with Cronbach's alphas ranging from 0.67 to 0.88. Test-retest reliability has also been shown to be acceptable ranging from 0.61 to 0.84. Through factor analysis and comparison with other established measures of behaviour and the DSM (APA, 2000), the BASC-2 SRP-A has also been shown to possess good convergent and construct validity. For the current sample, the validity response indices for all BASC-2 scales were examined, and overall fell within acceptable limits. The sensation-seeking clinical scale measures risk-taking behaviour and proclivity for engaging in exciting, albeit potentially dangerous activities (Reynolds & Kamphaus, 2004). High scores indicate a higher level of sensation seeking (as reported by Reynolds & Kamphaus, 2004, $\alpha = 0.69$). The mania content scale assesses "tendency toward extended periods of heightened arousal, excessive activity… and rapid idea generation in the absence of normal fatigue" (Reynolds & Kamphaus, 2004, p. 89). High scores indicate a higher level of mania ($\alpha = 0.74$). The depression clinical scale measures feelings of loneliness, hopelessness, pessimism, and sadness (e.g. "Nothing feels good to me"), and the anxiety clinical scale assesses generalized fears, worries, and nervousness (e.g. "I worry but I don't know why"). High scores indicate a higher level of depression ($\alpha = 0.88$) and anxiety ($\alpha = 0.86$). The hyperactivity clinical scale, which focuses on the hyperactivity component of ADHD, measures behaviours such as an inability to sit still, talking over others, and being disruptive (e.g. "I have trouble sitting still"). High scores indicate a higher level of hyperactivity ($\alpha = 0.76$).

Self-Concept

The self-esteem, self-reliance, ego strength, and sense of inadequacy scales from the BASC-2 SRP-A (Reynolds & Kamphaus, 2004) were used as a measure of self-concept. The adaptive self-esteem scale measures feelings of self-satisfaction concerning physical and global characteristics (e.g. "I like who I am"). High scores indicate positive self-esteem ($\alpha = 0.83$). The self-reliance adaptive scale measures decision-making and positive personal adjustment (e.g. "I can handle most things on my own"). High scores indicate high self-reliance levels, low fear of emotion, and good regulation ($\alpha = 0.68$). The ego strength content scale measures sense of self-identity, self-awareness, self-acceptance, and positive social support. High scores indicate a strong ego ($\alpha = 0.87$). Unlike these three previous scales, which are measures of positive adaptation, the sense of inadequacy clinical scale measures low expectations of self, based on self or others' expectations, and feelings of low personal success and low perseverance (e.g. "I am not very good at anything"). Higher scores reflect a higher sense of inadequacy ($\alpha = 0.80$).

Attitude and Beliefs

The *Moral Reasoning about Aggression* (MRA) questionnaire (Murray-Close et al., 2006) was used to measure moral reasoning about aggression and its relationship to aggressive behaviour. Respondents were presented with six scenarios (i.e. three physical aggression and three relational aggression) and asked to rate the wrongfulness and harmfulness of each scenario (e.g. "How wrong is it for you to tell lies about another kid so other people won't like them?"). Participants responded to the 18 questions using a 5-point Likert scale from 1 (*not wrong at all*) to 5 (*extremely wrong*). Cronbach's alphas for the physical and relational aggression scenarios are 0.81 and 0.77, respectively (Murray-Close et al., 2006). Participants were also asked to rate the harmfulness of the victim's scenario using a 5-point Likert scale from 1 (*never*) to 5 (*always*). Cronbach's alphas for the physical and relational aggression scenarios are 0.77 and 0.75, respectively. The wrongfulness and harmfulness subscales for both physical and relational aggression were combined to create one overall variable reflecting moral reasoning about aggression ($\alpha = 0.84$). Higher scores indicate viewing aggression as immoral and possessing better moral reasoning abilities.

Participants also completed the 20-item *Normative Beliefs about Aggression* (NOBAGS) questionnaire (Huesmann & Guerra, 1997). Following Fishbein and Ajzen (1975), the NOBAGS contains six subscales designed to address action, target, context, and time of the behaviour. Items 1 to 20 comprise the total approval of aggression scale ($\alpha = 0.86$). Respondents rated each item using a 4-point Likert-type scale: *It's perfectly OK*, *It's sort of OK*, *It's sort of wrong*, *It's really wrong*. Higher scores are indicative of disapproval of bullying.

The *Provictim Scale* (Rigby & Slee, 1991) was used to measure attitudes about bullying. Half of the items are positively worded (e.g. "weak kids need help"), and half are negatively worded (e.g. "nobody likes a wimp"). Participants responded to the 20 items using a 3-point Likert-type scale: *agree*, *unsure*, *disagree*. Higher scores indicate more support for the victim or a negative attitude toward bullying ($\alpha = 0.52$). The measure has been shown to have adequate reliability ($\alpha = 0.78$) and validity (Rigby & Slee, 1991).

Perceived Behavioural Control

The anger control and locus of control scales from the BASC-2 SRP-A (Reynolds & Kamphaus, 2004) were used to examine perceived behavioural control. The anger

control content scale measures the tendency toward quick and impulsive irritation and poor self-regulation and self-control ($\alpha = 0.87$). Scores were reversed so that high scores are reflective of having a higher ability to control feelings of anger. The locus of control clinical scale "assesses an individual's perception of his or her level of control over external events" (Reynolds & Kamphaus, 2004, p. 76; e.g. "My life seems out of my control"). Scores were reversed so that high scores indicate an internal locus of control, whereas low scores indicate an external locus of control ($\alpha = 0.81$).

Behavioural Intention

The *Reactive-Proactive Aggression Questionnaire* (RPQ; Raine et al., 2006) was used to assess behavioural intention. Items reflect both reactive (11 items) and proactive (12) physical and verbal aggression, as well as motivational and situational context factors (e.g. "had fights with others to show who was on top") using a 3-point Likert-type scale of 0 (*never*), 1 (*sometimes*), and 2 (*often*). Higher scores reflect either higher reactive ($\alpha = 0.79$) or proactive ($\alpha = 0.69$) aggression.

Bullying Behaviour

The Peer Relations Questionnaire (PRQ; Rigby & Slee, 1993) is a 20-item measure of bullying and includes items reflecting physical, verbal, and relational bullying. Six items measure the tendency to bully others ($\alpha = 0.75$–0.78), and six items measure the tendency to be victimized by others ($\alpha = 0.78$–0.86), with the remaining eight items being either filler items or a measure of prosocial behaviour. Using a 4-point Likert scale, participants rated each item (e.g. "How often do you like to make other kids scared") from 1 (*never*) to 4 (*often*) with higher scores reflecting a greater frequency of being a bully ($\alpha = 0.68$) or victim ($\alpha = 0.80$).

Procedure

Data were collected as part of a larger study, which was given ethics approval. Information packages including a description of the study and a parent consent form were sent home with students. Only those students who had written parental consent and assent to participate in the study were included. It took students approximately 90 min (or two class periods) to complete the questionnaire package. Students not participating in the study were given psychoeducational bullying material to read while their peers completed the study package. Participants were also given this material upon completion of the study.

Results

Preliminary Analysis

Means and standard deviations for the various measures utilized are presented in Table 1.

In line with previous research, individuals were identified if they scored higher than one standard deviation above the mean (Crick et al., 2002; Leenaars & Rinaldi, 2010). As individuals scoring highly on bullying behaviour and bully-victimization measures were of interest, Table 2 presents the frequencies and percentages of those who engaged in bullying and bully-victimization.

To investigate sex differences in bullying behaviour, independent samples *t*-tests were run using the Bonferroni correction procedure on bullying and bully-victimization. There were significant sex differences in bullying behaviour (t (206.40) = −3.24, $p = 0.001$) and bully-victimization (t (315) = −3.09, $p = 0.002$) with boys scoring higher than girls. Inter-correlations among the study variables are presented in Table 3. As can be seen, within the construct of psychological adjustment, all correlations among the variables were positive and significant indicating that for all

Table 1 Descriptive statistics for all study variables

Variable	*N*	*M*	Range	*SD*
Psychological adjustment				
Sensation seeking	314	50.31	26–76	9.69
Mania	306	47.84	32–88	10.94
Depression	313	52.67	40–86	8.68
Anxiety	309	48.64	33–83	10.36
Hyperactivity	311	48.98	33–86	10.23
Self-concept				
Self-esteem	315	51.00	16–63	8.88
Self-reliance	314	52.22	15–71	9.62
Sense of inadequacy	312	51.04	36–83	10.58
Ego strength	304	50.42	21–63	9.39
Attitude and beliefs				
Moral reasoning about aggression	324	47.76	31–62	8.21
Normative beliefs	324	47.76	18–60	8.21
Attitude toward victim	321	27.22	18–30	2.26
Perceived control				
Anger control	304	50.76	34–82	10.13
Locus of control	315	51.36	36–80	10.07
Intention				
Reactive	324	6.41	0–19	3.64
Proactive	324	1.56	0–10	1.96
Bullying behaviour				
Bully	325	7.27	2–14	1.72
Bully-victim	318	17.62	12–30	3.57

Table 2 Frequencies and percentages of bullies and bully-victims

Classification	*n*			Frequency			Percentage		
	Total	Boys	Girls	Total	Boys	Girls	Total	Boys	Girls
Bully	325	126	198	36	22	13	11.08	17.46	6.56
Bully-victim	318	121	196	42	21	20	13.21	17.36	10.20

variables, higher scores on any given variable were related to higher scores on any other given variable. All measures of psychological adjustment were, in general, significantly negatively related to measures of self-concept, beliefs and attitudes, and perceived control but positively related to intention and bullying and bully-victimization. These findings indicate that as scores on measures of psychological adjustment problems increased, measures of self-concept, beliefs and attitudes, and perceived control decreased, proactive and reactive intention increased, as did bullying and bully-victimization. Measures of attitude and beliefs were significantly, positively related to measures of control and negatively to bullying and bully-victimization, and measures of control were also significantly, negatively correlated to bullying and bully-victimization.

Main Analysis

Before the model could be tested for bullying behaviour, it had to be respecified as a measurement model based on the two-step rule for identification (Kline, 2005). When the original model was respecified as a measurement model, it did not fit the data well. Following the procedures laid out in Kline (2005), post hoc modifications were made to improve model fit and parsimony. The final measurement model involved re-organizing psychological adjustment and self-concept into two alternative latent variables, renamed internalizing and externalizing behaviour. Removing several indicators of the newly constructed internalizing and externalizing variables further pared the model down and improved overall fit. The final model included depression and ego strength as indicators of internalizing behaviour and sensation seeking and hyperactivity as externalizing behaviour indicators. However, the model still did not fit the data well. After several further post hoc modifications following the procedures outlined by Kline (2005), the latent variable intention with its indicators (proactive and reactive) was removed, and this new model fit the data well.

As shown in Table 4, two factors were extracted with anxiety, depression, ego strength, self-esteem, self-reliance, and inadequacy loading highly on factor 1 (internalizing behaviour) and sensation seeking, hyperactivity, and mania loading highly on factor 2 (externalizing behaviour).

Final Bullying Model

The aforementioned well-fitting measurement model was respecified as a partially latent structural regression model testing bullying behaviour with direct paths from the new externalizing and internalizing variables added (see Figure 2). Figure 2 (error terms and disturbances removed) presents the standardized parameters with their associated significance level based on the bootstrap method. This model fit the data well ($\chi^2 = 36.006$, $df = 27$, $p = .115$; Bollen-Stine $p = .159$; CMIN/DF = 1.334; CFI = .992; RMSEA = .034 (.000–.061); SRMR = .0343) with Mardia's coefficient at 14.263. Removing the direct paths from internalizing and externalizing behaviour to bullying behaviour respecified the model; however, it was not significantly improved ($\chi_{Diff}{}^2 = 3.138$, $df_{Diff} = 2$). So these paths were retained in the final model.

Overall, the model accounted for 40% of the variance in bullying. Although internalizing behaviours were not related, externalizing behaviours had a significant direct effect on attitude and beliefs, indicating that for each one-unit increase in externalizing behaviour, which was associated with increases in sensation seeking and hyperactivity, attitudes and beliefs decreased by 0.38. For each one-unit increase in attitudes and beliefs, bullying behaviour decreased by 0.52. Therefore, the hypotheses of this study were partially supported in that bullying was predicted by less support for the victim, normative beliefs supporting aggression/bullying, and less well-developed moral reasoning about aggression, which was, in turn, predicted by higher levels of sensation seeking and hyperactivity. There was also a significant direct effect of internalizing behaviour on control indicating that for each one-unit increase in internalizing behaviour (increase in depression and decrease in ego strength), the ability to control behaviour (poorer ability to control their anger and a more external locus of control) decreased by 0.75. Similarly, as ratings of sensation seeking and hyperactivity increased, control decreased. However, there were no significant direct effects of internalizing behaviour or control on bullying and no significant indirect effects of internalizing or externalizing behaviour on bullying.

Final Bully-Victim Model

The final model for bullying was run on bully-victimization. However, this model did not fit the data well ($X^2 = 48.183$, $df = 27$, $p = .007$; Bollen-Stine $p = .028$) with Mardia's

Table 3 Inter-correlations among variables.

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. Sensation seeking	-	.36**	.15*	.14*	.44**	-.09	.12*	.26**	−.12*	−.22**	−.32**	−.19*	−.30**	−.26**	.20**	.34**	.27**	.17*
2. Mania		-	.57**	.66**	.74**	-.38**	-.13*	.60**.	−.48**	−.13*	−.15*	−.07	−.67**	−.54**	.37**	.24**	.22**	.32**
3. Depression			-	.61**	.35**	-.62**	-.27**	.66**	−.79**	−.16*	−.16*	−.03	−.80**	−.73**	.34**	.23**	.18*	.42**
4. Anxiety				-	.37**	-.48**	-.16*	.62**	−.54**	−.14*	−.05	−.01	−.70**	−.61**	.33**	.17*	.12*	.32**
5. Hyperactivity					-	-.27**	-.16*	.46**	−.34**	−.20**	−.23**	−.17*	−.50**	−.40**	.39**	.34**	.31**	.28**
6. Self-esteem						-	.25**	−.51**	.82**	.14*	.12*	.08	.58**	.54**	−.30**	−.22**	−.13*	−.31**
7. Self-reliance							-	−.33**	.55**	.18*	.12*	.17*	.31**	.21**	−.22**	−.15*	−.24**	−.32**
8. Sense of inadequacy								-	−.66**	−.20*	−.22**	−.13*	−.74**	−.67**	.36**	.26**	.20**	.32**
9. Ego strength									-	.24**	.18*	.12*	.74**	.67**	−.36**	−.28**	−.25**	−.47**
10. Moral reasoning										-	.35**	.29**	.22**	.17*	−.11*	−.20**	−.30**	−.27**
11. Normative beliefs											-	.34**	.22**	.20**	−.35**	−.36**	−.39**	−.21**
12. Attitude												-	.11	.13*	−.10	−.22	−.36**	−.17*
13. Anger control													-	.80**	−.49**	−.36**	−.26**	−.55**
14. Locus of control														-	−.36**	−.28**	−.21**	−.40**
15. Reactive intention															-	.46**	.38**	.47**
16. Proactive intention																-	.48**	.40**
17. Bully																	-	.65**
18. Bully-victim																		-

*$p < 0.05$, **$p < 0.001$

Table 4 Factor loadings for psychological adjustment variables with varimax rotation

Psychological adjustment variable	Factor 1 (internalizing)	Factor 2 (externalizing)
Ego strength	**−.914**	−.182
Depression	**.786**	.337
Self-esteem	**−.782**	−.158
Self-reliance	**−.644**	.207
Sense of inadequacy	**.682**	.466
Anxiety	**.606**	.458
Hyperactivity	.220	**.797**
Mania	.420	**.775**
Sensation seeking	−.105	**.767**

Note. Significant factor loadings for each factor are shown in bold

coefficient at 12.960. In an attempt to improve fit and parsimony, the model was respecified by removing indicators or paths one at a time following Kline (2005). The removal of sensation seeking, anger control, ego strength, attitude, norm beliefs, and moral reasoning did not significantly improve the model fit, and removal of hyperactivity and depression led to negative eigenvalues and the model being unidentified. Further, the removal of locus of control and the respecification of anger control as an observed variable with an added path to attitude and beliefs did fit the data well (X^2 = 30.084, df = 19, p = .051; Bollen-Stine p = .088; CMIN/DF = 1.583; CFI = .987; RMSEA = .045(.000–.074); SRMR = .0361) with Mardia's coefficient at 9.532. The model was respecified with the path from anger control to attitudes and beliefs removed, but this model did not significantly fit the data better (X_{Diff}^2 = 1.45, df_{Diff} = 1); therefore, the path was retained (see Figure 3 for standardized estimates).

Overall, the model accounted for 34% of the variance in bully-victimization. As can be seen, internalizing and externalizing behaviours had a direct effect on attitude and beliefs and anger control, both of which in turn had a significant direct effect on bully-victimization. For each one-unit increase in internalizing behaviour (increase in depression, decrease in ego strength), attitude and beliefs decreased by 0.37 and anger control by 0.66. For each one-unit increase in externalizing behaviour (increase sensation seeking and hyperactivity), attitude and beliefs decreased by 0.49 and anger control by 0.35. Each one-unit increase in attitude and beliefs or anger control led to a 0.33 or 0.49 unit decrease

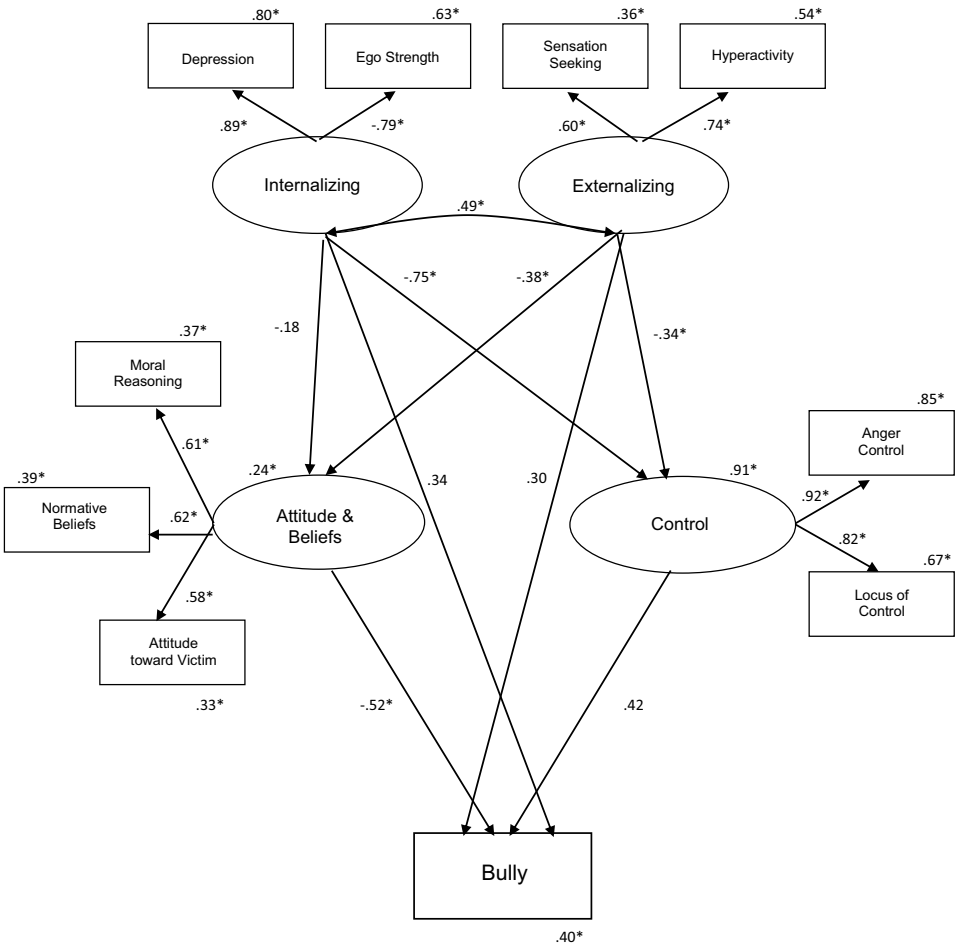

Figure 2. Final measurement model respecified as partially latent model for bullying.

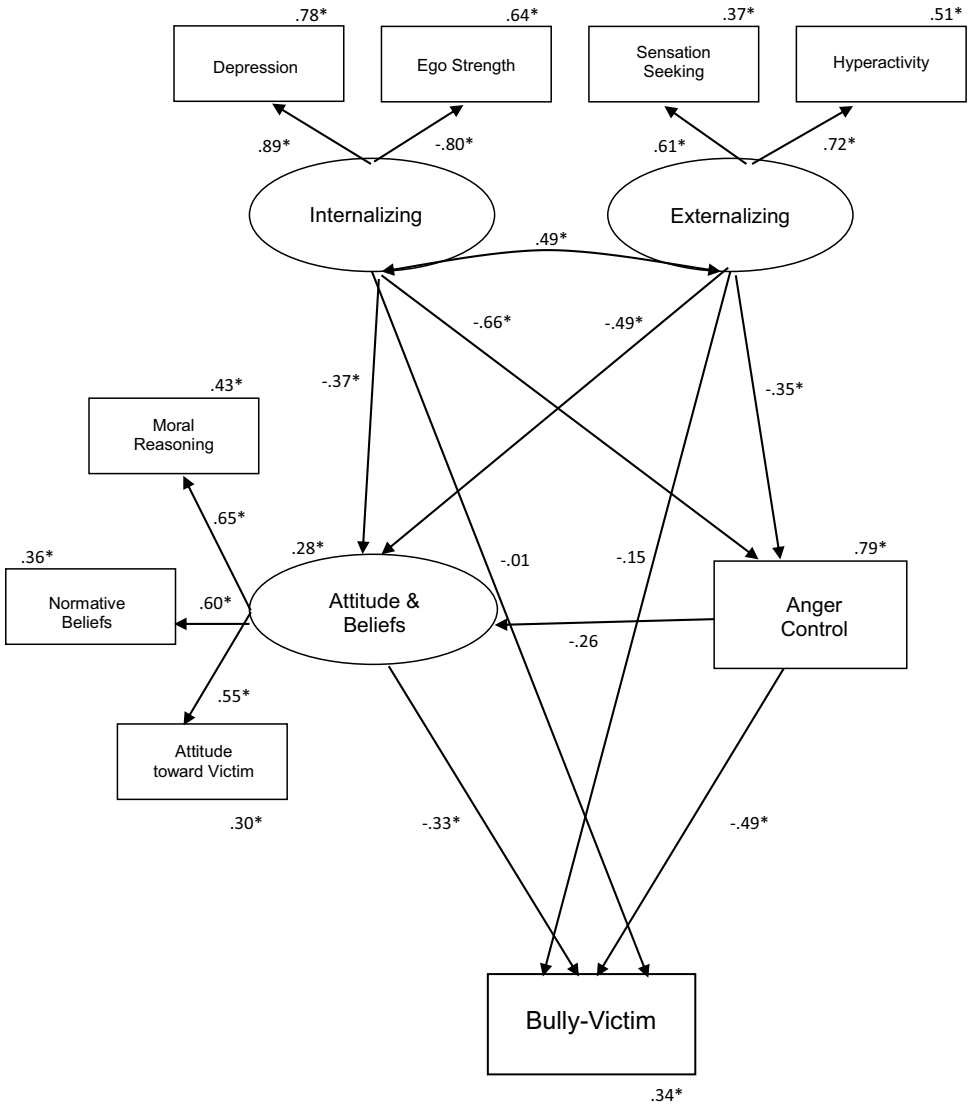

Figure 3 Final partially latent model for bully-victimization.

in bully-victimization, respectively. The hypotheses of this study were therefore partially supported in that bully-victimization was predicted by less support for the victim, normative beliefs supporting aggression/bullying, and less well-developed moral reasoning about aggression and poor anger control, which in turn were predicted by higher levels of sensation seeking, hyperactivity, and depression and lower ego strength. Unlike the bullying model, there were significant indirect effects of both internalizing and externalizing behaviour, indicating that attitude and beliefs and anger control mediated (see Baron & Kenny, 1986) the relationships between internalizing/externalizing behaviour and bully-victimization.

Discussion

Similar to previous research findings, the prevalence of students who bullied others for the overall sample was 11.08% based on scores greater than one standard deviation above the mean. The prevalence of bully-victimization (13.21%) was also comparable to previously established rates. Consistent with previous research (e.g., Burns et al., 2008; Klomek et al., 2009), the prevalence of bullying behaviour varied by sex with 17.46% of boys and 6.56% of girls identified as students who bully others, and 17.36% of boys and 10.20% of girls classified as bully-victims. These higher rates of bullying behaviour and bully-victimization may, in part, be

due to the age of the current sample ($M = 12.27$), as it has previously been found that bullying/aggressive behaviour peaks in mid-adolescence (Barboza et al., 2009; Jankauskiene et al., 2008).

For bullying behaviour, the inter-correlations among the study variables were generally in line with previous research. Measures of psychological adjustment were negatively related to measures of self-concept, attitudes and beliefs, and control, whereas they were positively related to measures of intention and bullying. Measures of attitude and beliefs were positively associated with control measures and negatively related to bullying, while measures of control were also negatively correlated to bullying. For bully-victimization, the inter-correlations among the study variables were also generally in line with previous research. Measures of psychological adjustment were negatively related to measures of attitudes and beliefs and control, as well as positively related to bully-victimization. Measures of attitude and beliefs were positively related to control measures and negatively related to bully-victimization, while measures of control were also negatively correlated to bully-victimization.

TPB Applied to Bullying Behaviour

The proposed model expanded on Ajzen's (1991, 2002) original TPB model by including antecedents (psychological adjustment and self-concept) of attitude and beliefs and perceived control. It was predicted that psychological adjustment (i.e. sensation seeking, depression, mania, anxiety, and hyperactivity) and self-concept (i.e. self-esteem, self-reliance, sense of inadequacy, and ego strength) influence attitudes and beliefs (i.e., attitude toward the victim, normative beliefs, moral reasoning about aggression) and perceived control (i.e., anger control and locus of control), which in turn influences intention (reactive and proactive) and leads to bullying behaviour.

The model was tested on bullying behaviour and was found to fit the data well, explaining 40% of bullying variability. This finding was consistent with Heirman and Walrave's (2012) application of TPB to cyberbullying. A review of the indicators and latent variables revealed that internalizing behaviour was associated with higher depression ratings and lower ego strength and externalizing behaviour with higher sensation seeking and hyperactivity ratings. The role of these indicators may be a product of the small sample size and the alteration of the model to obtain a more parsimonious fit to the data. Although the inclusion of depression, ego strength, sensation seeking, and hyperactivity in the model was based on their higher factor loadings, their relevance to the prediction of bullying has previously been established. Previous research has found bullying to be related to increased depression (e.g. Crick & Grotpeter, 1995; Kim et al., 2018; Leenaars & Lester, 2011; Leenaars & Rinaldi, 2010), sensation seeking (Herrenkohl et al., 2007), and hyperactivity (e.g. Coolidge et al., 2004; Farrington & Ttofi, 2011; Kim et al., 2011; Leenaars & Rinaldi, 2010). Further, several studies have found bullying to be related to lower self-esteem (Jankauskiene et al., 2008; Kokkinos & Panayiotou, 2004; van Geel et al., 2018) and negative self-concept (Christie-Mizell, 2003). Ego strength in this study was a measure of feelings of a strong sense of self-identity, self-awareness, self-acceptance, and positive social support. Therefore, it is not surprising given the previous research that ego strength would have a significant role in predicting bullying behaviour.

Internalizing and externalizing behaviour were moderately, positively related to each other, explaining 24% of the variance in the latent construct of attitude and beliefs and 91% of the variance in the latent variable of perceived behavioural control. Internalizing behaviour negatively predicted control but did not predict attitude and beliefs, whereas externalizing behaviour negatively predicted attitude, beliefs, and control. Attitude and beliefs, however, was the only significant predictor of bullying. These findings partially support the hypotheses of this study. Holding a positive attitude about bullying, seeing it as morally and socially acceptable, and not supporting the victim were predictive of bullying increases. This relationship between attitude and beliefs and bullying is in line with previous research (Guerra et al., 2011; Williams & Guerra, 2007).

Contrary to predictions, neither internalizing nor externalizing behaviours had a direct or indirect effect on bullying or control. Further, the intention was not included in the final model, as its inclusion did not fit the data well. Given these results, the initially proposed model based on the TPB (Ajzen, 1991) did not adequately explain bullying behaviour.

There are several possible explanations regarding the lack of fit of intention into the current model. First, it is possible that TPB, with its emphasis on behavioural intention, does not apply to bullying behaviour or at least not in the present sample of Grade 7 and 8 students. It is also possible that the measures of intention in this study, reactive and proactive aggression, although conceptually related to intention, were not wholly valid measurements of the construct proposed by Ajzen (1991). According to Ajzen (1991), intentions "are assumed to capture the motivational factors that influence behaviour; they are an indication of how hard people are willing to try, of how much of an effort they are planning to exert, to perform the behaviour" (p. 181). While reactive and proactive aggression may have captured parts of this definition, they may not have addressed the notion of a particular intention to perform a specific behaviour at a particular time.

TPB Applied to Bully-Victimization

In line with Vaughn and Santos (2007), who argued that victims who are also aggressors (i.e. bully-victims) are likely different from pure aggressors, it was hypothesized a similar yet divergent pathway from bullies for bully-victims. The final model for bully-victimization was identical to that of bullying, except for removing the latent variable control and the respecification of anger control as an observed variable. Similar to the results for bullying, internalizing behaviour was associated with increased depression and decreased ego strength, and externalizing behaviour was associated with sensation seeking and hyperactivity. Internalizing and externalizing behaviour were related to each other and explained 28% of the variance in attitude and beliefs. All three indicators of attitude and beliefs were associated with the construct of attitude and beliefs, which was a significant predictor of bullying behaviour such that viewing bullying as acceptable, morally and socially acceptable, and not supporting the victim was predictive of an increase in bully-victimization.

Unlike the bullying model, however, there were several other significant pathways to bully-victimization. As hypothesized, anger control also significantly predicted bully-victimization. As the tendency toward quick and impulsive irritation and poor self-regulation increased and overall self-control decreased, bully-victimization also increased. Although internalizing and externalizing behaviours did not directly affect bully-victimization, there were significant indirect effects of internalizing and externalizing bully-victimization behaviour. As predicted, attitude and beliefs mediated the relationship between internalizing and externalizing behaviour and bully-victimization (i.e., higher internalizing and externalizing problems predicted greater support and acceptance of bullying, which in turn predicted increased bully-victimization). Also, as predicted, anger control mediated the relationship between internalizing and externalizing behaviours and bully-victimization (i.e. higher internalizing and externalizing problems predicted poorer anger control, which in turn predicted higher bully-victimization).

These results lend support to the role of attitude and beliefs and control in the prediction of bully-victimization. These results are also consistent with previous research, suggesting that of those involved in bullying, bully-victims tend to have the poorest psychosocial health. For example, and in line with the current results, bully-victimization is related to higher levels of depression (Holt & Espelage, 2007; Marini et al., 2006; Menesini et al., 2009; Pranjic and Bajraktarevic, 2010) and hyperactivity (Gini, 2008; Leenaars & Rinaldi, 2010) and lower levels of self-esteem (Pollastri et al., 2010) as well as other aspects of internalizing and externalizing behaviour often above that of pure bullies (Kozasa et al., 2017). From these findings, we can see that although there are some commonalities, bullying and bully-victimization appear to be related yet distinct phenomena.

Implications

One of the major practical implications of these findings is that attitudes and beliefs significantly predicted bullying behaviour. Fortunately, attitudes and beliefs can be altered. Anti-bullying programing is an area that might benefit from further investigation. The alteration of attitudes and beliefs about bullying is something that can be addressed from an ecological perspective through initiatives focusing on social justice, equity, diversity, and inclusion that incorporate home and community components. Influential adults, including school staff, parents, and community leaders, can play a significant role in reinforcing and modelling these prosocial and inclusive behaviours.

Limitations

Although consistent with the geographical area sampled, the generalizability of the results to diverse ethnic and SES groups is limited, given that the majority of participants were middle-class Caucasians. Future research may address this limitation by testing if findings may be generalized to more diverse student populations. Another limitation is that the data are based on self-report measures. However, this methodology has been used extensively in this research area and appears to yield reliable, valid, and informative results comparable to peer reports (see Crick & Bigbee, 1998). Given the use of the one measure of bullying behaviour which had few items, it was not possible to separate overt from relational bullying behaviour. As previous research has found differences in terms of sex and other factors between these forms of bullying, it may be that the current model differs depending on the examination of overt versus relational bullying behaviour; however, it was not possible to test for such differences.

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Availability of Data and Material Not applicable

Code Availability Not applicable

Declarations

Ethics Approval This study was performed in line with the principles of the Declaration of Helsinki. Approval was granted by the Ethics Committee of the University of Alberta (9/4/2008/Pro00000076).

Consent to Participate Written informed consent was obtained from participants' parent/legal guardian, and verbal assent was obtained from the participants.

Consent for Publication The authors affirm that human research participants provided informed consent for publication.

Conflict of Interest The authors declare no competing interests.

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