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Suicidality, internalizing problems and externalizing problems among adolescent bullies, victims and bully-victims

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ABSTRACT

Objective. The aim of this study is to compare suicidality, internalizing problems and externalizing problems among adolescent victims, bullies and bully-victims.

Method. This study examined bullying involvement among a subset of the baseline sample of the *Climate and Preventure* study, a trial of a comprehensive substance use prevention intervention for adolescents in 2012. The sample included 1588 Year 7–9 students in New South Wales and Victoria, Australia.

Results. Victims, bullies and bully-victims had more problems than uninvolved students. Students with internalizing problems were more likely to be a victim than a bully. Some externalizing problems (alcohol and tobacco use) were associated with increased odds of being a bully, but not others (cannabis use and conduct/hyperactivity symptoms). Suicidal ideation, internalizing problems and some externalizing problems increased the odds of being a bully-victim compared to being a bully or a victim.

Conclusion. Early intervention for adolescents frequently involved in bullying may reduce the onset of substance use and other mental disorders. It would be advisable for bullying interventions to include a focus on substance use and mental health problems. A reduction in these chronic and detrimental problems among adolescents could potentially lead to a concomitant reduction in bullying involvement.

Introduction

Bullying is a major issue affecting the health and wellbeing of young people worldwide, with international rates of bullying in the range of 10% to 50% (Currie et al., 2012). Bullying has been associated with concurrent and long-term consequences, such as emotional and behavioural problems, physical health problems, and academic difficulties (Gini and Pozzoli, 2009; Kumpulainen et al., 2001; Hawker and Boulton, 2000; Due et al., 2005; Nansel et al., 2001; Rigby, 2003; Bond et al., 2001; Arseneault et al., 2010). Bullying during adolescence is of particular importance, due to the significant role of peer relationships in development (Perren et al., 2010; Steinberg and Morris, 2001). Adolescence is also the period of onset for many substance use and other mental disorders, and therefore is a key time to focus preventive efforts (Kaltiala-Heino et al., 1999).

The bullying literature typically reports externalizing problems among bullies and internalizing problems among victims (Ivarsson et al., 2005; Hawker and Boulton, 2000; Reijntjes et al., 2010; Hodges and Perry, 1999; Cook et al., 2010; Luukkonen et al., 2010a, 2010b; Sourander et al., 2000; Kumpulainen and Räsänen, 2000; Menesini et al., 2009; Arseneault et al., 2008; Solberg and Olweus, 2003; Ttofi et al., 2011; Kaltiala-Heino et al., 2000). Internalizing problems refer to turning distress inwards, such as mood and anxiety disorders, while externalizing problems refer to expressing distress outwards, such as attention deficit hyperactivity disorder, conduct disorder and substance use disorders (Cosgrove et al., 2011; Krueger, 1999; Krueger and Markon, 2011). However, the internalizing-victim and externalizing-bully dichotomy may be an over-simplification, with evidence of internalizing problems among bullies and externalizing problems among victims (Juvonen et al., 2003; Sourander et al., 2000; Ivarsson et al., 2005; Coolidge et al., 2004; Mitchell et al., 2007; Swearer et al., 2001; Moore et al., 2014; Reijntjes et al., 2011; Archimi and Kuntsche, 2014; Kaltiala-Heino et al., 2000). Cook et al. (2010) conducted a meta-analysis of predictors of bullying victimization and perpetration among school-aged children. They found that, while 'externalizing behaviour' was a predictor of being a victim, it was a stronger predictor of being a bully, and while 'internalizing behaviour' was a predictor of being a bully, it was a stronger predictor of being a victim.

A further complication in the association between bullying and internalizing and externalizing problems, is the often overlooked group involved in both bullying victimization and perpetration, known as 'bully-victims'. While bully-victims have not received as much attention as victims or bullies, it appears that bully-victims may experience a

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more severe combination of internalizing and externalizing problems than 'pure' victims or bullies (Nansel et al., 2001; Cook et al., 2010; Haynie et al., 2001; Ivarsson et al., 2005; Sourander et al., 2007; Kumpulainen and Räsänen, 2000; Forero et al., 1999; Copeland et al., 2013; Burk et al., 2011; Schwartz, 2000; Klomek et al., 2011). The co-occurrence of internalizing and externalizing problems has been found to heighten the risk for adverse outcomes (Vander Stoep et al., 2011; Wolff and Ollendick, 2006); one highly concerning outcome that has been found to be particularly high among bully-victims is suicide (McKenna et al., 2011; Espelage and Holt, 2013; Copeland et al., 2013; Borowsky et al., 2013; Ivarsson et al., 2005).

While many longitudinal studies have been conducted to examine predictors and consequences of bullying, few studies have compared *concurrent* problems among bullies, victims and bully-victims within the same study. Studies on concurrent problems among adolescents involved in bullying tend to be limited to one bullying subtype, and/or a limited number of problems. While such studies are able to show that internalizing problems are high among victims, and externalizing problems are high among bullies, they are not able to determine whether such problems are more strongly associated with one group than the other. Greater clarity is needed in identifying the particular problems among bullying subtypes, to inform preventive interventions for bullying and related harms. Current bullying interventions tend to be whole-of-school programmes aimed at reducing the prevalence of bullying within a school. Reviews of such interventions have found significant variability in their effectiveness, and they rarely assess mental health or substance use outcomes (Barbero et al., 2012; Smith, 2011; Ttofi and Farrington, 2011).

The current study seeks to address the gaps in the literature as described above by comparing a range of concurrent problems among frequent victims, bullies and bully-victims. In addition, this study aims to assess whether bully-victims may be in particular need of intervention. Specifically, this study proposes the following hypotheses:

1. Suicidal ideation, internalizing problems and externalizing problems will be more strongly associated with victim, bully and bully-victim status than uninvolved status;
2. Internalizing problems will be more strongly associated with victim status than bully status;
3. Externalizing problems will be more strongly associated with bully status than victim status;
4. Suicidal ideation, internalizing problems and externalizing problems will be more strongly associated with bully-victim status than bully or victim status.

This study will also assess which of the problems present the highest risk for each bullying subtype.

Methods

The current study examined bullying involvement among a subset of the baseline sample of the *Climate and Preventure* (CAP) study, a trial of a substance use prevention intervention for adolescents (Newton et al., 2012). The CAP study included 27 secondary schools (18 independent and 9 public) in New South Wales and Victoria, Australia. Of the 2608 eligible students invited into the study, 2268 provided consent and completed the baseline survey between February and May 2012. The current study examined the students from the independent schools ($n = 1714$), as the public school students only completed a subset of the measures due to ethics requirements. A small proportion of students did not complete the bullying questions (7%); therefore the final sample included 1588 students.

Measures

Bullying

Bullying prevalence was measured using an amended version of the Revised Olweus Bully/Victim Scale (Olweus, 1996). This scale has satisfactory psychometric properties and demonstrated good internal consistency ($\alpha = 0.86$) (Kyriakides et al., 2006). The bullying questionnaire provided the respondents with a definition of bullying, and asked them to indicate how often they had been involved in bullying in the past six months (including general bullying victimization and perpetration, as well as verbal, relational and physical victimization and perpetration). Participants were categorised into one of four bullying subgroups according to their frequency of responses, with bullying classified as fortnightly or more frequent involvement as suggested by Solberg and Olweus (2003):

- 'Uninvolved' participants: defined as no or infrequent (less than fortnightly) involvement in bullying victimization or perpetration;
- 'Victim': frequent (fortnightly or more) bullying victimization but no/infrequent bullying perpetration;
- 'Bully': frequent (fortnightly or more) bullying perpetration but no/infrequent bullying victimization;
- 'Bully-victim': frequent (fortnightly or more) involvement in both bullying perpetration and bullying victimization.

Suicidality measure

Suicidal ideation was measured using a question from the Brief Symptom Inventory (BSI) (Derogatis and Melisaratos, 1983), asking how often in the past six months, the respondent had had "thoughts of ending your life". This variable was dichotomised to reflect 'low suicidal ideation' for responses of 'not at all', or 'a little bit', and 'high suicidal ideation' for responses of 'moderately', 'quite a bit' or 'often'.

Internalizing problems

The BSI (Derogatis and Melisaratos, 1983) was used to measure depressive and anxiety symptoms, using the Depression subscale and Anxiety subscale respectively; this measure showed strong internal consistency ($\alpha = 0.95$). Anxiety symptoms and depressive symptoms were both dichotomised into scores one standard deviation below or equal to/above the mean ('no depressive symptoms' vs. 'depressive symptoms' and 'no anxiety symptoms' versus 'anxiety symptoms').

Externalizing problems

Past six month prevalence of substance use was measured, including alcohol (full standard drink), tobacco and cannabis. Behavioural problems were examined using the total of the conduct problems and hyperactivity/inattention subscales from the Strengths and Difficulties Questionnaire (Goodman, 1997; Goodman et al., 2010). Good internal consistency was found for this measure ($\alpha = 0.80$). The scores were dichotomised to reflect 'no conduct/hyperactivity problems' for scores below one standard deviation above the mean, and 'conduct/hyperactivity problems' for scores one standard deviation above the mean and higher.

Statistical analyses

SPSS 22 was used for statistical analyses. The CAP study utilized a cluster randomised design (clustered by school). Accounting for clustering is not deemed necessary if less than 10% of systematic variance exists at the between school level (Lee, 2000). Analyses showed that 0–4% of the variance in the outcome variables was accounted for by intra-class correlations; therefore further analyses did not control for clustering. Chi-square analyses were conducted to examine gender differences between the bullying subtypes. Univariate multinomial regressions were used to examine associations between suicidality, internalizing problems and externalizing problems and bullying status (uninvolved, bully, victim, or bully-victim), controlling for sex. A multivariate multinomial regression was run to account for shared variance between the variables. For Hypothesis 1, the uninvolved group was the reference category, and for hypotheses 2 to 4 the reference categories were changed accordingly.

Results

Characteristics of the sample

Just over half (59%) the sample was male and the median age of the study participants was 13 years (range 12 to 15 years; 83% aged 13 to 14 years). Eighteen percent of the sample was classified as victims, 3% as bullies, and 5% as bully-victims. Males were over-represented

among the bully and bully-victim subtypes, but there was no significant gender difference for victims ($p = 0.037$, $p = 0.000$ and $p = 0.188$, respectively). There was no significant difference in age between the bullying subtypes ($p = 0.958$, Kruskal–Wallis Test). Overall, the prevalence of suicidal ideation, internalizing problems and externalizing problems was higher among the bullying subtypes than the uninvolved students, and was typically highest among the bully-victims (Fig. 1).

Are suicidal ideation, internalizing problems and externalizing problems more strongly associated with victim, bully and bully-victim status than uninvolved status?

There was strong evidence that frequent suicidal ideation was more strongly associated with bully-victim and victim status than uninvolved status, and weak evidence that frequent suicidal ideation was more strongly associated with bully status than uninvolved status (Table 1). Students who reported externalizing problems had increased odds of being a bully (rather than an uninvolved student), except for cannabis; students who reported internalizing problems had increased odds of being a victim (rather than an uninvolved student); and all of the problems examined increased the odds of being a bully-victim (rather than an uninvolved student) (Table 1).

When shared variance was taken into account within multivariate analysis (Table 2), there was evidence that students with depressive or anxiety symptoms had increased odds of being a victim (rather than an uninvolved student). There was also some evidence of increased odds of being a victim for those reporting cannabis use, and evidence of *reduced* odds of being a victim for those who reported alcohol use. Students with alcohol use or conduct/hyperactivity problems had increased odds of being a bully (rather than an uninvolved student). Students with depressive symptoms, anxiety symptoms, tobacco use, cannabis use or conduct/hyperactivity problems had increased odds of being a bully-victim (rather than an uninvolved student).

Do suicidal ideation, internalizing problems and externalizing problems differ between the bullying subtypes?

There was weak evidence that students with depressive or anxiety symptoms had increased odds of being a victim than a bully. There was strong evidence that students with alcohol use had increased odds of being a bully than a victim, and weak evidence that students with tobacco use had increased odds of being a bully than a victim (Table 3).

There was evidence that suicidal ideation and internalizing problems were more strongly associated with being a bully-victim than a victim or a bully. There was evidence that externalizing problems were more strongly associated with being a bully-victim than a victim. There was very limited evidence that externalizing problems were more strongly associated with bully-victim status than bully status, with weak evidence that conduct/hyperactivity problems increased the odds of being a bully-victim rather than a bully (Table 3).

When shared variance was taken into account within multivariate analysis (Table 4), there was weak evidence that students with depressive symptoms had increased odds of being a victim than a bully, and strong evidence that students with alcohol use had increased odds of being a bully than a victim. There was weak evidence that students with depressive symptoms had increased odds of being a bully-victim than a bully, and evidence that students with alcohol use had reduced odds of being a bully-victim than a bully. Students with conduct/hyperactivity problems or recent tobacco use had increased odds of

Table 1
Univariate regression analyses examining the odds of bullying status by high suicidal ideation, internalizing problems and externalizing problems [#a].

	Victims ($n = 284$) OR (95% CI)	Bullies ($n = 39$) OR (95% CI)	Bully-victims ($n = 82$) OR (95% CI)
High suicidal ideation	4.7 (3.1–7.0)	2.4 (0.8–7.0)	9.3 (5.4–16.2)
Internalizing problems			
Depressive symptoms	6.2 (4.4–8.9)	2.5 (0.9–6.7)	15.9 (9.5–26.6)
Anxiety symptoms	5.4 (3.7–7.7)	2.0 (0.7–5.9)	13.0 (7.7–22.0)
Externalizing problems			
Alcohol past 6 months	0.9 (0.5–1.4)	4.6 (2.3–9.4)	3.4 (1.9–5.8)
Tobacco past 6 months	1.6 (0.9–2.6)	3.6 (1.5–8.6	6.0 (3.4–10.5)
Cannabis past 6 months	1.7 (1.0–2.7)	1.6 (0.5–5.3)	3.9 (2.0–7.4)
Conduct/hyper-activity symptoms	2.2 (1.6–3.1)	3.3 (1.6–6.7)	7.1 (4.4–11.4)

[#] Adjusted for sex.
[a] Reference category = uninvolved students.

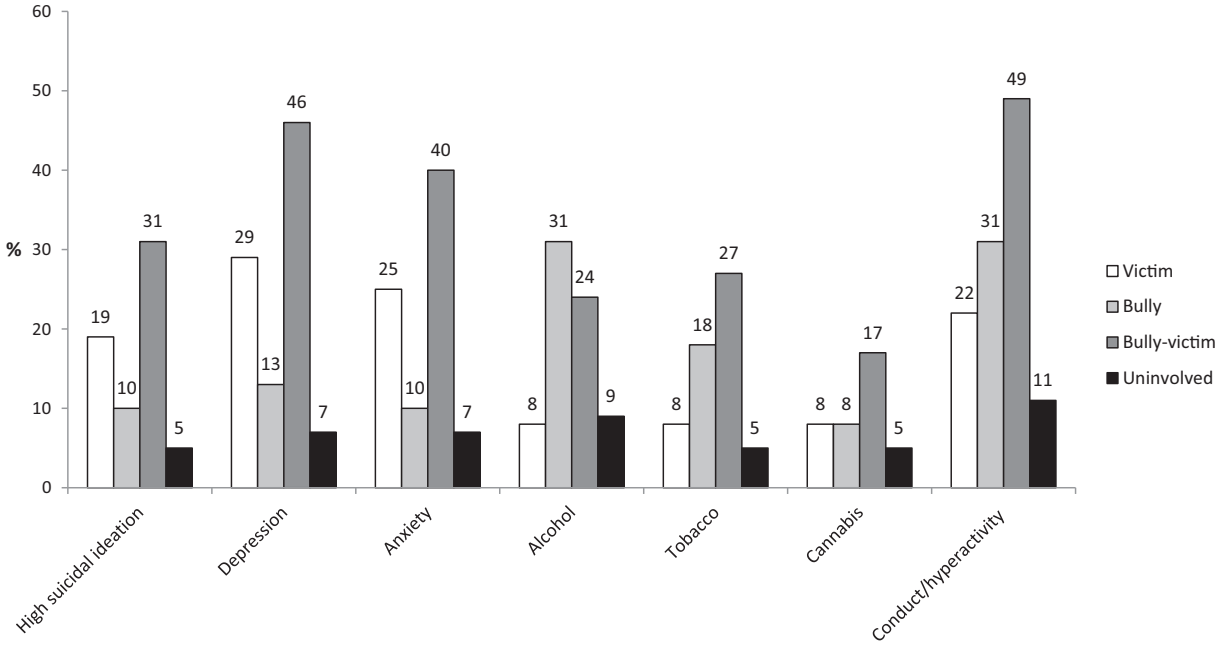

Fig. 1. Prevalence of high suicidal ideation, internalizing problems and externalizing problems among bullying subtypes and uninvolved students.

Table 2
Multivariate regression analysis examining the odds of bullying status by internalizing and externalizing problems[#a].

	Victims ($n = 284$) OR (95% CI)	Bullies ($n = 39$) OR (95% CI)	Bully-victims ($n = 82$) OR (95% CI)
Internalizing problems			
Depressive symptoms	3.8 (2.4–6.0)	1.3 (0.4–4.5)	4.8 (2.3–9.9)
Anxiety symptoms	2.2 (1.4–3.6)	1.1 (0.3–4.0)	2.9 (1.4–6.0)
Externalizing problems			
Alcohol past 6 months	0.5 (0.3–0.9)	3.2 (1.4–7.3)	1.0 (0.5–2.1)
Tobacco past 6 months	1.5 (0.8–2.6)	1.7 (0.6–4.4)	3.2 (1.6–6.3)
Cannabis past 6 months	1.7 (1.0–2.9)	1.0 (0.3–3.6)	2.9 (1.4–6.1)
Conduct/hyperactivity symptoms	1.3 (0.9–1.9)	2.5 (1.2–5.3)	2.8 (1.6–4.9)

[#] Adjusted for sex.
[a] Reference category = uninvolved students.

being a bully-victim than a victim, and there was weak evidence that students with recent alcohol use were more likely to be a bully-victim than a victim.

Discussion

This study examined suicidality, internalizing problems and externalizing problems associated with being an adolescent victim, bully or bully-victim. As expected, frequent suicidal ideation, internalizing problems and externalizing problems were greater among adolescents involved in bullying than among uninvolved students. Also as expected, internalizing symptoms were more strongly associated with being a victim than being a bully. This association was weak, most likely because of the small group size for bullies. Previous research indicates that internalizing symptoms are both antecedents and consequences of bullying victimization (Reijntjes et al., 2010). Therefore, preventive interventions aimed at reducing the onset of internalizing disorders are likely to not only reduce harms due to bullying victimization, but also reduce the likelihood of future victimization.

The findings regarding externalizing problems were mixed. There was no evidence that conduct/hyperactivity symptoms increased one's risk of being a bully compared to being a victim. While there was evidence that alcohol use increased one's risk for being a bully compared to being a victim, the findings were weaker for tobacco use, and cannabis use was associated with an increased risk of victim status (compared to being an uninvolved student), but not bully status. The mixed findings in the current study are in line with the general inconsistency in the literature in regards to bullying and substance use and point to the complexity of this relationship (Morris et al., 2006; Luukkonen et al., 2010a, 2010b; Mitchell et al., 2007; Liang et al., 2007; Tharp-Taylor et al., 2009; Moore et al., 2014; Kaltiala-Heino et al., 2000; Weiss et al., 2011; Niemela et al., 2011). One possible explanation for the inconsistency in the literature is the classification of bullying groups; in the current study, victim status excluded frequent bullies, whereas previous research that did not exclude bullies found a positive relationship between bullying victimization and alcohol use (Topper et al., 2011).

The findings of this study support the proposition that bully-victims are in particular need of intervention. All of the problems studied were significantly associated with bully-victim status. Within bully-victims, there were alarmingly high levels of conduct/hyperactivity symptoms (49%), depressive symptoms (46%) and anxiety symptoms (40%). Further, suicidality was especially concerning among this group, with almost one third of bully-victims reporting frequent suicidal ideation, compared to five percent of uninvolved students. While suicidal ideation increased the risk of all three types of bullying involvement, the odds were highest for bully-victims. These findings fit with previous research that bully-victims are an exceptionally vulnerable group, especially in regards to suicide (Nansel et al., 2001; Cook et al., 2010; Haynie et al., 2001; Ivarsson et al., 2005; Sourander et al., 2007; Kumpulainen and Räsänen, 2000; Forero et al., 1999; Copeland et al., 2013; Burk et al., 2008, 2011; Schwartz, 2000; Klomek et al., 2011).

The current study also examined the internalizing and externalizing problems for each bullying subtype, after taking shared variance into account. This analysis gives an indication of the problems that are independently associated with each bullying profile. The results indicated that depression, anxiety and cannabis use were most relevant for victims; alcohol use and conduct/hyperactivity problems were most relevant for bullies; and depressive symptoms, anxiety symptoms, tobacco use, cannabis use and conduct/hyperactivity problems were all independently associated with bully-victim status. In addition, the results of multivariate analyses examining differences between the bullying subtypes highlight characteristics that may be helpful in differentiating these groups. For instance, bullies differed from both victims and bully-victims in being the subtype most strongly associated with recent alcohol use, and bully-victims differed from victims in being more strongly associated with conduct/hyperactivity problems and tobacco use. These distinct symptom profiles associated with each bullying subtype give an indication of priorities for intervention within each of these groups. Identification of those frequently involved in bullying could be facilitated by the implementation of school bullying policies, incorporating reporting of bullying involvement by teachers/school counsellors, parents and peers, as well as offering support to individuals who self-report involvement in bullying. Further, it would be advisable to screen those students identified as bullies for victimization, and vice versa, as the involvement in both aspects of bullying appears to increase the risk of problems.

The present findings should be considered in light of some limitations. While a cross-sectional focus was used in order to identify

Table 3
Univariate regression analyses examining the odds of bullying status by high suicidal ideation, internalizing problems and externalizing problems: comparisons between the bullying subtypes[#].

	Victims (n=284) vs bullies (n=39) OR (95% CI)[a]	Bullies (n=39) vs victims (n=284) OR (95% CI)[b]	Bully–victims (n=82) vs bullies (n=39) OR (95% CI)[a]	Bully–victims (n=82) vs victims (n=284) OR (95% CI)[b]
High suicidal ideation	N/A*	N/A*	3.9 (1.2–12.2)	2.0 (1.1–3.5)
Internalizing problems				
Depressive symptoms	2.5 (0.9–6.6)	N/A*	6.3 (2.2–18.1)	2.6 (1.5–4.3)
Anxiety symptoms	2.7 (0.9–7.9)	N/A*	6.5 (2.1–20.3)	2.4 (1.4–4.1)
Externalizing problems				
Alcohol past 6 months	N/A*	5.3 (2.4–11.9)		
Tobacco past 6 months	N/A*	2.3 (0.9–5.8)	1.7 (0.6–4.3)	3.8 (2.0–7.4)
Cannabis past 6 months	N/A*	1.0 (0.3–3.3)	2.5 (0.7–9.2)	2.4 (1.2–4.8)
Conduct/hyper–activity symptoms	N/A*	1.5 (0.7–3.2)	2.1 (1.0–4.8)	3.2 (1.9–5.4)

[a] Reference category = bullies. [b]Reference category = victims.
* These associations were not tested as part of the original a priori set of hypotheses.
[#] Adjusted for sex.

Table 4
Multivariate regression analyses examining the odds of bullying status by internalizing and externalizing problems: comparisons between the bullying subtypes[#].

	Victims (n=284) vs bullies (n=39) OR (95% CI)[a]	Bullies (n=39) vs victims (n=284) OR (95% CI)[b]	Bully–victims (n=82) vs bullies (n=39) OR (95% CI)[a]	Bully–victims (n=82) vs victims (n=284) OR (95% CI)[b]
Internalizing problems				
Depressive symptoms	2.9 (0.8–10.3)	N/A*	3.7 (1.0–14.3)	1.3 (0.6–2.7)
Anxiety symptoms	2.1 (0.5–8.1)	N/A*	2.7 (0.6–11.5)	1.3 (0.6–2.8)
Externalizing problems				
Alcohol past 6 months	N/A*	6.4 (2.5–16.1)	0.3 (0.1–0.9)	2.0 (0.9–4.3)
Tobacco past 6 months	N/A*	1.1 (0.4–3.3)	1.9 (0.6–5.7)	2.2 (1.0–4.5)
Cannabis past 6 months	N/A*	0.6 (0.2–2.2)	2.9 (0.7–11.3)	1.7 (0.8–3.8)
Conduct/hyper–activity symptoms	N/A*	2.0 (0.9–4.4)	1.1 (0.5–2.8)	2.2 (1.2–4.0)

[a]Reference category = bullies. [b]Reference category = victims.
*These associations were not tested as part of the original a priori set of hypotheses.
[#] Adjusted for sex.

concurrent problems among the bullying subtypes, longitudinal studies are required to clarify the direction of the associations between the range of problems and the bullying subtypes. Further, the current study did not control for possible confounders, such as family and school factors. As a result, the conclusions will be limited to clarification of problem profiles associated with bullying subtypes rather than suggesting causal relations or mechanisms underpinning the relationship between bullying and internalizing/externalizing problems or suicidality. A small proportion of the sample did not complete the bullying measure (7%); it is possible that this reflects an unwillingness to report bullying and may have resulted in an underestimation of bullying in the sample. The current study did not measure cyberbullying, although current research indicates that the problems among those involved in cyberbullying are similar to traditional bullying (Kowalski and Limber, 2013). The present findings were conducted in Australia, and may not represent adolescents worldwide. However, the results of this study are largely consistent with the international bullying literature; as discussed above. In addition, the current findings add to bullying intervention internationally by highlighting the need for early intervention among those involved in bullying, particularly in regards to preventing substance use and other mental disorders. Finally, the current study used a self-report measure of bullying, which may have been affected by response bias; however, it is probable that self-report is more suitable for adolescents than peer or parent/teacher nomination as bullying becomes more covert in adolescence, and therefore may not be identified by others. The current study includes an improvement over many previous studies, in that bullying is operationalized as *frequent* involvement. Solberg and Olweus (2003) have recommended using frequent involvement to classify bullying, as it fits better with the repeated nature of the behaviour.

Conclusion

Early intervention for adolescents involved in bullying could help prevent the onset of substance use and mental disorders. While the findings of this study indicate that specific bullying subtypes are more strongly associated with certain types of problems than others, there was a high prevalence of a wide range of problems among all the bullying subtypes. Where possible, it would be advisable to screen all adolescents involved in bullying for such problems, and provide intervention where indicated. Importantly, all adolescents involved in bullying should be screened for suicidal ideation. The current results also indicate that it would be beneficial to include a focus on substance use and mental health problems in school-wide bullying prevention programmes.

Conflict of interest statement

The authors declare that there are no conflicts of interest.

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