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Adolescent Bully-victims: Social Health and the Transition to Secondary School

Abstract

This study aimed to investigate the causal pathways and factors associated with being involved in bullying behaviour as a bully-victim using longitudinal data from students aged 11-14 years over the transition time from primary to secondary school.

Examination of bully-victim pathways suggest a critical time to intervene is prior to transition from the end of primary school to the beginning of secondary school to prevent and reduce the harm from bullying. Negative outcome expectancies from bullying perpetration were a significant predictor of being a bully-victim at the end of the first year of secondary school. The findings show an association between peer support, connectedness to school, pro-victim attitudes, outcome expectancies and level of bullying involvement. Implications for intervention programs are discussed.

Keywords: bully-victim, peer support, pro-victim attitudes, connectedness, outcome expectancies

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Bullying is a type of aggressive behaviour that involves the systematic abuse of power through unjustified and repeated acts intended to inflict harm (Smith, 2004). The prevalence, seriousness and negative impacts of school bullying contribute to significant physical, psychological and social health problems, and can affect all students within the school community (Bosworth, 1999; Espelage, Bosworth, & Simon, 2000). Loss of friendships, feelings of isolation and hopelessness, loneliness, unhappiness and lack of self esteem and disruptions to learning have been associated with involvement in bullying behaviours (Bosworth, 1999; Espelage et al., 2000; Glover, Gough, Johnson, & Cartwright, 2000; Pellegrini, 2002). Evidence from longitudinal studies found that bullying impacts on physical health and is linked to depression, anxiety and psychosomatic complaints (Kaltiala-Heino, Rimpela, Rantanen, & Rimpela, 2000; Tremblay et al., 2004).

Students may take on various roles in a bullying situation dependent on their social status: those who bully others, those who are victimised, those who reinforce bullying behaviours, those who assist with bullying behaviours, those who defend the victimised, and those who are uninvolved (Salmivalli, Lagerspetz, Björkqvist, Österman, & Kaukiainen, 1996). This study focuses on an additional participant role of students who self-report both perpetrating bullying behaviours and being a target of bullying behaviours from others and will be referred to as 'bully-victims' (Haynie et al., 2001).

A recent large-scale survey in 40 countries revealed 10.7% of adolescents reporting involvement in bullying as perpetrators only, 12.6% as victimised only, and 3.6% as bully-victims (Craig et al., 2009). The majority of countries involved in this study showed a trend of increasing prevalence in perpetration and a decreasing prevalence in victimisation with increasing age, with no trend observed for bully-victims. Approximately 10% of Australian school students reported being bullied most days or more often, with 27% reporting being victimised every few weeks or more often in the previous term (10-12 weeks) at school and 9% reported bullying others every few weeks or more often in the previous term (Cross et al., 2009). Four percent of school

students within that study reported being bullied every few weeks or more often and bullying others every few weeks or more often (Unpublished data, Cross et al., 2009).

Proactive and reactive aggression are characteristics of bully-victims, with bully-victims the most aggressive subgroup of students who bully (Peeters, Cillessen, & Scholte, 2010; Salmivalli & Nieminen, 2002). Proactive aggression includes behaviour that is directed at a victim to obtain a particular goal and allows the aggressor to successfully attain and maintain dominance and high status within peer groups (Pellegrini & Bartini, 2001; Salmivalli, 2010). This form of aggression is reinforced by peer support (Mayberry & Espelage, 2007). In contrast, reactive aggression is described as a reaction to a perceived provocation or threat and is characterised by emotional and impulsive behaviour which is used to relieve frustration, anxiety, or fear and is a more typical response from bully-victims (Espelage & Swearer, 2003; Mayberry & Espelage, 2007). In general, bully-victims are more likely to be disliked and socially isolated, lonely with very few friends and less able to form positive friendships with peers than students who only bully or who are only victimised (Georgiou & Stavrinides, 2008; Haynie et al., 2001). They find peer support from other students who bully and bully-victims but generally have low peer support from the general student population (Georgiou & Stavrinides, 2008; Pellegrini, Bartini, & Brooks, 1999).

Adolescent bully-victims are the highest risk subgroup involved in bullying as they function more poorly socially, emotionally and behaviourally than those who are only bullied or only victimised (Demaray & Malecki, 2003; Nansel et al., 2001; Stein, Dukes, & Warren, 2007). They typically are victimised more often, engage in more perpetration, and have more experiences of physical, relational and cyberbullying victimisation (Demaray & Malecki, 2003; Georgiou & Stavrinides, 2008; Perren, Dooley, Shaw, & Cross, 2010). They also demonstrate more internalising (e.g. depression, anxiety, psychosomatic and eating disorders) and externalising (e.g. conduct problems, aggressiveness, attention deficit and hyperactivity disorders) symptoms than any other sub-group involved with bullying (Menesini, 2009). Bully-victims report more involvement in other problem behaviors such as alcohol use problem, eating disorders,

delinquency, violations of parental rules, and weapon carrying and report the most physical injury compared to their peers (Haynie et al., 2001; Kaltiala-Heino et al., 2000; Stein et al., 2007; Veenstra et al., 2005). They also have increased risk of future psychiatric problems, anti-social behaviour and having a criminal record as adults (Haynie et al., 2001; Kumpulainen & Räsänen, 2000; Perren & Hornung, 2005). Importantly, bullying involvement in the role of bully, victim and bully-victim has been found to be stable over time and life changing (Hixon, 2009).

Among Australian students, an increase in bullying behaviour appears to occur at age 11 and in the immediate transition period from primary school to secondary school (Cross et al., 2009). This increase in bullying behaviours may be due to a combination of factors including a focus on academic competition, teachers' attitudes towards bullying, a lack of school community and a peak in social aggression (Pellegrini, 2002; Pellegrini & Bartini, 2000; Underwood, Beron, & Rosen, 2009). Adolescence coincides with the transition from primary to secondary school contributing to a major change in social structure with students often needing to develop new friendships and define their place in a new social hierarchy (Pellegrini & Bartini, 2000). In adolescence, social status goals (increased prestige and perceived popularity) become more important and are one of the driving motivations behind bullying behaviour (Salmivalli, 2010; Sijtsema, Veenstra, Lindenberg, & Salmivalli, 2009). Manipulation and aggression are often used as deliberate strategies to acquire power and influence, gain dominance and to increase and maintain popularity with peers during adolescence (LaFontana & Cillessen, 2010; Salmivalli, 2010). Adolescent bully-victims are also more likely to be disliked and socially isolated, lonely with very few friends and are less able to form positive friendships with peers (Haynie et al., 2001).

There are a large number of other factors which may mediate involvement in bullying behaviours both at the individual and the school level: bullying behaviours may be affected by attitudes, beliefs and responses of the whole school community. Factors examined in this paper include peer support, connectedness to school, pro-victim attitudes, and outcome expectancies of bullying another student. In this study, peer

support (the quality of students' friendships, the level of validation and social support they receive from their friends (Ladd, Kochenderfer, & Coleman, 1996)) and the relationship between perpetration-victimisation are examined across the transition period and into secondary school. School connectedness, the quality of the social relationships within the school, and the extent to which a student feels they belong and cared for by people at their school (McNeely, Nonnemaker, & Blum, 2002), are related to connectedness to teachers, family and peers (Osterman, 2000). Students involved in bullying are less likely to feel connected to school compared to non-involved students with bully-victims feeling the least connected (Bradshaw, O'Brennan, & Sawyer, 2008). Adolescent perceptions of the consequences of bullying another student (outcome expectancies), include how they believe others will view their bullying behaviour and what will happen as a result and how the student would feel about themselves if they bullied another student. Expectations that aggression will lead to rewards or to victim suffering, and the value placed on rewards and victim suffering, determine the role a student takes in bullying situations (Andreou & Metallidou, 2004). A pro-victim attitude (including support for the victim, empathy towards the victim and disapproval of bullying behaviours) is a possible predictor of students' participation in bullying behavior. In contrast a negative attitude towards perpetration is positively related to students who are only victimised or are bully-victims, and negatively related to students who bully only (Pellegrini et al., 1999).

The majority of research investigating factors related to adolescent bully-victims has been cross-sectional rather than longitudinal in design. To date, longitudinal research has primarily focused on psychological health factors such as self-esteem, aggression, externalising behavioural problems and social immaturity (Kim, Leventhal, Koh, Hubbard, & Boyce, 2006; Pollastri, Cardemil, & O'Donnell, 2010). Despite this, the causal direction of the relationships between bully-victimisation and social health factors over and following the transition to secondary school have not been established. Identifying factors impacting on adolescent bullying behaviours will enable primary to secondary school transition programs to more effectively target those factors contributing to bullying perpetration and victimisation.

Gender differences will be explored in this paper as previous research has shown males are more likely to be within the bully-victim group, have higher expectations that bullying will lead to status rewards and report less peer social support than females (Andreou & Metallidou, 2004; Holt & Espelage, 2007). While no gender differences have been found between bully-victims and their feelings of safety at school or school belonging (Bradshaw et al., 2008), further research is needed to determine whether gender effects occur for bully-victims and other social health indicators.

This study explores, for bully-victims, the direction of the relationships between the degree of perpetration-victimisation and peer support, pro-victim attitudes, connectedness to school, and negative outcome expectancies of bullying others during students' transition from primary to secondary school. Factors that are protective against higher levels of perpetration-victimisation in the first year of secondary school will be determined and gender differences in causal pathways examined. It is hypothesised that bully-victims with higher levels of peer support, pro-victim attitudes, school connectedness and negative outcome expectancies of bullying behavior will report lower levels of perpetration-victimisation.

Methods

Sample and procedure

Supportive Schools Project (SSP) longitudinal study collected data on adolescents' knowledge, attitudes, and experiences of bullying victimisation and perpetration during the transition from primary school to secondary school and included 3,459 students from 21 secondary schools in Perth, Western Australia. The aim of this project was to enhance the capacity of secondary schools to implement a whole-of-school bullying reduction intervention (including strategies to enhance student transition to secondary school) and compare this intervention using a randomised (cluster) comparison trial to the standard behaviour management practices currently used in WA secondary schools.

Data used in this paper were collected in four waves from 2005 to 2007. In the final year of primary school (Grade 7, mean age 11 years) the student cohort was

administered a self-completion questionnaire. Students were followed and completed questionnaires after the transition to secondary school (the beginning of Grade 8), end of Grade 8 (13 years old) and end of Grade 9 (14 years old).

To reduce the rate of transition attrition as students move from primary to secondary schools, secondary schools affiliated with the Catholic Education Office (CEO) of Western Australia were recruited to participate in the study as students within Australian Catholic schools are more likely than students attending schools in other sectors (e.g. government schools) to move in intact groups. Schools were stratified according to the total number of students enrolled at the school and each school's Socio-Economic Status (SES) and were randomly selected. Additional schools were selected to account for non-participation.

Schools were then randomly assigned within each stratum to an intervention or comparison group. Twenty-one of the 29 selected eligible schools consented to participate. Additional schools within the same stratum assigned to the same condition were approached in the event of a school refusing participation. The eight schools that declined to participate cited other priorities within their school and demanding staff workloads. To collect data relating to pre-transition experience, all students enrolled in Year 8 at each of the 21 participating secondary schools received a baseline survey while in Year 7 at their primary school. The potential student cohort at the start of the study was enrolled at almost 400 primary schools in the Perth metropolitan area.

Active followed by passive consent (Ellickson & Hawes, 1989) was sought from parents of the Year 7 students enrolled in the 21 recruited secondary schools in Terms 3 and 4 of 2005. Parents were also sent a copy of the student questionnaire, and a reply paid envelope to return the consent form and the questionnaire once completed. Parents who did not respond were sent up to two follow-up letters. Secondary schools either directly mailed the information to parents or provided the researchers with labels to send mail to the parents of their incoming Year 8 students. Researchers were

contacted by school staff when new enrolments occurred or when students left the school.

Parental consent was provided for 3,462 of the 3,769 (92%) students eligible to participate with 3,123 (90%) of the students involved in the SSP study responding to at least three of the four data collection points and 1,771 responding to all four data points (51%). Over the study period, participants comprised 50% males and 70% attended a co-educational versus single sex secondary school.

The SSP intervention comprised three components targeting parents, students and the whole school. The parent intervention aimed to increase parents' understanding of the issues associated with the transition from primary to secondary school, bullying, and the importance of friendships. The student intervention provided students with information and strategies to manage the transition from primary school to secondary school, to improve their social competence and to enhance social responsibility to reduce and cope adaptively with bullying. The whole-school component comprised strategies to help schools to systematically review and implement their whole-school bullying policy, as well as implement effective mechanisms to manage student bullying behaviour, to modify the physical environment to reduce bullying and to build a positive whole-school ethos. The intervention also included six hours of classroom curriculum implemented in each of Grade 8 and Grade 9. As comparisons of the study conditions are not the focus of this paper, the results from all students were used in this secondary analysis with the study condition included as a covariate in the statistical models, controlling for any intervention impact.

Measures

Bullying perpetration-victimisation. Bullying perpetration was assessed using a nine-item category index derived from items used in Rigby and Slee (Rigby & Slee, 1998), Olweus (Olweus, 1996) and the 2004 Youth Internet Survey (Ybarra & Mitchell, 2004). The items assessed physical (hit, kicked or pushed others around; deliberately broke someone's things or took money or other things away; made others feel afraid they would get hurt), verbal (made fun of and teased others in a hurtful way; called others

mean and hurtful names), relational (ignored other students, didn't let others join in, or left them out on purpose; told lies about others and tried to make other students not like them) and cyber bullying (sent mean and hurtful text (SMS) messages; sent mean and hurtful messages on the internet) over the previous school term.

For each item students were asked how often they bullied others, rating each item on a 5 point scale (1 = never, 2 = only once or twice, 3 = every few weeks, 4 = about once a week, 5 = most days). A perpetration score at each time point was calculated for each student by averaging the nine perpetration items, with a higher score indicating more perpetration experiences. Victimization was assessed using a similar nine-item victimisation index which asked students how often they were bullied by others in the ways listed to measure perpetration. A perpetration-victimisation score at each time point was calculated for each student by averaging the perpetration and victimisation items, with a higher score reflecting more overall bullying experiences (average alpha = 0.87). Only students who reported both perpetrating bullying and being victimised at least once or twice in the previous term (last three months) are included in the analyses.

Peer support. The peer support at school scale (adapted from the 24-item Perceptions of Peer Social Support Scale (Ladd et al., 1996)) comprised eleven items (how often would other students: choose you on their team at school; tell you you're good at things; explain something if you didn't understand; invite you to do things with them; help you if you are hurt; miss you if you weren't at school; help you if something is bothering you; ask to work with you on group work; help you if other students are treating you badly; ask you to join in when you are alone; and share their things with you?) were measured on a three point scale (1 = never, 2 = sometimes, 3 = lots of times). A peer support score at each time point was calculated for each student by averaging all items, with a higher score reflecting greater feelings of peer support (average alpha = 0.88).

Pro-victim attitudes. The nine-item Pro-victim attitude scale used in this study was adapted from Rigby and Slee's (1991) 20 item Pro-victim Scale. The Scale comprises seven pro-victim items (A person who bullies is really a coward; it makes me angry

when someone is picked on; students should tell someone if they are being bullied; students who pick on someone weaker should be told off; I like it when students stand up for themselves; you should not pick on someone who is weaker than you; I like it when someone sticks up for students who are bullied; I feel uncomfortable when I watch someone being bullied) and two items not supportive of victims (students who get picked on all the time usually deserve it; it's funny to see students get upset when they are teased) with three response choices of 1 = agree, 2 = not sure and 3 = disagree. After reverse coding the non-supportive items, an average pro-victim score was calculated from the nine items, with a higher score reflecting attitudes more supportive of victims (average alpha = 0.70).

Connectedness. The four item connectedness to school scale (I feel close to people at this school; I feel like I am part of this school; I am happy to be at this school; the teachers at this school treat students fairly) was adapted from the Resnick et al. (Resnick et al., 1997) six item School Connectedness Scale and was measured on a five point scale (1 = unsure, 2 = never, 3 = sometimes, 4 = usually, 5 = always). For each student at each time point an average connectedness to school score was calculated, with a higher score reflecting greater feelings of connectedness to school (average alpha = 0.80).

Outcome expectancies. The outcome expectancies scale (from bullying others) was adapted from a scale developed by Rigby (2003) and comprised eleven items (other students would be scared of me; other students would like me; my parents would find out and talk to me about it; I would feel bad about myself; other students would think I was tough; I would get into trouble; I would feel bad for the student I bullied; other students would not want to be my friend; my parents would be unhappy with me; I would feel good about myself; other students wouldn't bully me) with three response choices of 1 = yes, 2 = maybe and 3 = no. After reverse coding the negative items, an average outcome expectancies score was calculated, with a higher score reflecting a belief of greater negative outcomes for the student if they engage in bullying behaviours (average alpha = 0.71).

Data Collection

Data were collected in two ways – firstly when the cohort were in Grade 7 baseline data were collected at home from all Year 7 students enrolled in recruited secondary schools for Year 8, and secondly from school when the cohort were in Grade 8 and Grade 9. Parents of Year 7 students were mailed a package which contained: a letter describing the study requesting their active consent for their Year 7 child to participate, as well as providing a contact telephone number for parents to call should they have any questions; a student questionnaire which provided instructions on how to complete the questionnaire; a contact phone number of a trained research staff member if they would like to complete the questionnaire via telephone; and a reply paid envelope for them to return their questionnaire once completed.

Year 8 and Year 9 student data collection was conducted by trained research staff who administered questionnaires to students during class time according to a strict procedural and verbal protocol. Students not participating in the data collection were given alternate learning activities.

Statistical Analysis

Analyses were conducted using MPlus v6, STATA v10 and PASW v18. Cross-lagged models within the Structural Equation Modeling (SEM) framework were used to model causal paths, between factors of interest and perpetration-victimisation with longitudinal data collected over and following the students' transition from primary to secondary school.

All four time-points were represented in all models tested to determine the direction of association between the factors and the degree of bullying perpetration-victimisation as observed at a later time point. Espelage and Swearer (2003) describe bullying as a dynamic behaviour with involvement falling along a continuum. Hence, rather than analyzing the outcome as a dichotomy, this paper uses a continuous measure for each

student involved in at least one bullying incident of perpetration and victimisation, with a higher score reflecting greater involvement.

Linear regression models with random effects were used to determine the predictors of the level of perpetration-victimisation for bully-victims during the first year of secondary school. Previous bullying involvement, gender, study condition (to control for any possible intervention effects) and clustering at the school level were taken into account in all models. Missing data on scale items were handled using the Expectation-Maximisation (EM) procedure in PASW v 18 where scores were calculated for scales where 80% of items had responses, and missing data at time points through Full Information Maximum Likelihood (FIML) estimation in Mplus v 6 enabling the use of all students with at least one valid score in the analyses.

Results

Table 1 describes the sample by gender, study condition and time point and lists the means and standard deviations for factors of interest and perpetration-victimisation at the four time points. The data represent adolescents classified as bully-victims (i.e., those involved in at least one incident of perpetration and at least one incident of victimisation in the previous three months). Slightly fewer females than males self-identified as bully-victims, particularly in Grade 8. On average bully-victims believed they were supported by their peers (range of mean 2.43 to 2.49), had pro-victim attitudes (range of mean 2.57 to 2.74), felt connected to their school (range of mean 3.81 to 4.22) and had greater negative outcome expectancies of bullying (range of mean 2.37 to 2.55) over the four time points. Most bully-victims did not report high levels of perpetration-victimisation (range of mean 1.41 to 1.64) (Table 1).

-----Insert Table 1 here -----

Bivariate correlation coefficients describing the concurrent relationships between the factors of interest and perpetration-victimisation for bully-victims, show higher levels of peer support, pro-victim attitudes, connectedness to school and outcome expectancies

were significantly correlated with lower levels of perpetration-victimisation at all time points (Table 2). For almost all factors the correlations increased over time.

---- Insert Table 2 here ----

Causal pathways

Cross-lagged models, which allow for assessment of reciprocal causal effects across time, were used to examine causal pathways between perpetration-victimisation and factors of interest from Grade 7, the last year of primary school (12 years of age), to the end of Grade 9 (14 years of age). Crossed-lag model fit indices within MPlus indicate good model fit for all mediator variables and perpetration and perpetration-victimisation (all CFI>0.9; all RMSEA<0.08). Models were tested for gender and study group invariance using the Satorra Bentler Scaled Chi-square, with results indicating significant parameters equally apply to males and females and to each of the study conditions for peer support, connectedness to school and outcome expectancies. Gender differences existed in the causal pathways for pro-victim attitudes with a cyclical relationship shown for males and a reciprocal relationship shown for females. Figures 1 to 4 show the relevant path coefficients for the causal pathways between factors and perpetration-victimisation.

---- Insert Figures 1-4 here ----

Model results reveal higher peer support, school connectedness and negative outcome expectancies of bullying are associated with less perpetration-victimisation at later time points. The coefficients of the pathways from the factors to perpetration-victimisation at later time points are strongest for students from the end of Grade 8 (13 years) to the end of Grade 9 (14 years). The reciprocal relationships are also significant with increased perpetration-victimisation associated at each time point with less peer

support, less school connectedness and more positive outcome expectancies at the later time point.

Reciprocal relationships also exist between pro-victim attitudes and perpetration-victimisation for females at all time points. For males, a cyclical pattern emerges – higher pro-victim attitudes in Grade 7 relate to lower perpetration-victimisation scores at the beginning of Grade 8, higher perpetration-victimisation scores at this time are associated with lower pro-victim attitudes at the end of Grade 8, which in turn are associated with higher perpetration-victimisation scores at the end of Grade 9.

An increase in correlated residuals from the start of secondary school to the end of Grade 9 between the factors and perpetration-victimisation within each year indicate the associations tended to increase with time.

Predictors of level of perpetration-victimisation in first year of secondary school

The level of perpetration-victimisation at the beginning of secondary school was a significant predictor of the level of perpetration-victimisation at the end of the first year of secondary school (Table 3). Students with greater negative outcome expectancies at the beginning of secondary school had significantly lower perpetration-victimisation scores at the end of the year.

---- Insert Table 3 here ----

Discussion

All adolescents who were involved in at least one incident of both perpetration and victimisation, regardless of the frequency of involvement, were included in this research as bully-victims are at greater risk of negative mental, emotional, physical and social outcomes.

The existence of causal relationships between perpetration-victimisation and peer support, pro-victim attitudes, school connectedness and negative outcome expectancies

were supported using cross-lagged models within a structural equation modeling framework. Significant paths between factors and perpetration-victimisation were found to exist at the end of primary school (Grade 7) confirming previous research of associations starting earlier in primary school (Demaray & Malecki, 2003; Rigby, 1997). Reciprocal relationships between less peer support, fewer negative outcome expectancies if bullying others, feeling less connected to school, less pro-victim attitudes (among females only) and higher perpetration-victimisation were found during the first year of secondary school, indicating these factors may be determinants as well as consequences of bullying behaviours. These findings suggest by secondary school the behaviours and outcomes for students are fairly established. This suggests prior to transition or the beginning of secondary school is a critical time to provide targeted bullying intervention programs. This presents an opportune time to intervene as students are presented with a new secondary school ecology.

After accounting for prior perpetration-victimisation and gender, negative outcome expectancies for perpetrators have a significant impact on reducing perpetration-victimisation over the first year of secondary school. Hence, a strong school ethos against bullying behavior, and consistent staff implementation of the school policy if students bully others appears to be critical.

Peer support

Peer support in this study was a protective factor over the transition period for bully-victims. Reciprocal paths exist with greater peer support associated with less perpetration-victimisation and greater perpetration-victimisation associated with less peer support, highlighting the importance of addressing peer support at the commencement of secondary school.

Intervention programs based on increasing peer support have been shown to be successful in reducing the incidence of bullying at school and reducing the negative effects of bullying for students who are victimised (Gini, Pozzoli, Borghi, & Franzoni,

2008; Menesini, Codecasa, Benelli, & Cowie, 2003). Successful whole school interventions to increase peer support include encouraging student interaction between families, teachers and students; students engaging in extracurricular activities; and meetings of students who share similar goals (Buchanan & Bowen, 2008). While the design of curriculum content to encourage co-operative and helpful behaviour and peer support and student counseling services can be used to counter bullying behaviours (Rigby, 2000), it is recommended that schools are proactive in promoting peer support schemes to the school population as students in schools who are aware of the existence of peer support systems worry significantly less about being bullied (Cowie, Hutson, Oztug, & Myers, 2008).

Connectedness to school

In this study a reciprocal relationship between perpetration-victimisation and school connectedness existed across the transition where a student generally moves from a primary school that is a smaller more personal school environment where they are known into a larger more impersonal environment (Mizelle, 2005). Students in secondary school often report a decrease in sense of school belonging and perceived quality of school life (Barton & Rapkin, 1987; Pereira & Pooley, 2007). The path of less school connectedness as a consequence of perpetration-victimisation is the stronger, which may indicate students who more frequently perpetrate bully-victim behaviours in primary school are more likely to be less connected in primary school and may therefore expect to feel less connectedness in secondary school. Reciprocal relationships also exist during secondary school, with the strongest path between feeling less connected at school at the end of Grade 8 (first year of secondary school) and increased perpetration-victimisation at the end of Grade 9. This research also found connectedness to school decreased as bully-victims progressed through school highlighting the need for developmentally appropriate strategies for increasing bully-victims' connectedness to school.

Waters, Cross and Shaw (2010) suggested that interventions to improve students' school connectedness at the beginning of secondary school should focus on the school culture and ways to improve the school's physical environment. Recommended pastoral care strategies include the promotion of health and wellbeing, resilience, academic care, and social capital through implementation of school policies and programs at the school, teacher, student and school-community levels (Nadge, 2005a, 2005b; Quigley, 2004; WHO, 1998). Enabling students to achieve their highest academic potential and to participate in extracurricular activities such as sport, recreation, music, arts and service can also contribute to an increase in students' school connectedness (Hamilton, Cross, Hall, & Townsend, 2003; Waters, Cross, & Shaw, 2010). The school's built environment and the care taken by the school community to maintain the school grounds can have an impact on students' connectedness with the school (Waters et al., 2010).

Outcome expectancies

Perceptions of greater negative consequences of bullying in this study were associated with less perpetration-victimisation, and greater perpetration-victimisation with less negative consequences of bullying. However, on average, negative outcome expectancies for bully-victims declined with age perhaps reflecting school policies where outcomes for bullying were unclear, inconsistently implemented or minimal or social norms where it is more accepted to be pro-bully decreasing with age.

Bullying is more likely to occur if students think they will be rewarded socially in terms of respect and status by those who equate bullying with power and dominance (Andreou & Metallidou, 2004). Both students who bully and bully-victims are less likely to take responsibility and make amends when involved in aggressive behaviour to others (Morrison, 2006). Negative outcome expectancies, including parents finding out and parental and peer disapproval, are strong motivational forces to prevent involvement in bullying behaviours (Rigby, 1997). Students are also less likely to engage in aggressive

behaviours if there is an expectation there will be consequences (Hall, Hertzberger, & Skowronski, 1998).

A zero tolerance approach to bullying mandates the application of predetermined consequences which are most often punitive in nature and intended to be applied regardless of the gravity of behavior, mitigating circumstances or situational context (Skiba et al., 2008). Skiba and colleagues (2008) conclude a zero tolerance approach has not been shown to improve school climate, school safety or student behaviour and may not be appropriate for early adolescents where bullying incidents may arise due to poor judgment resulting from developmental immaturity. In reviewing anti-bullying programs, Ttofi and Farrington (2009) found the use of clear sanctions and disciplinary methods were effective in reducing bullying. Results of the review may have been influenced by the number of studies utilising The Olweus Bullying Prevention Program (Olweus & Limber, 2010) which recommends a confronting approach to reduce the prevalence of bullying behaviour. This approach involves setting firm limits to unacceptable behaviour and the use of consistent consequences when rules are broken. Smith and colleagues (2006) found school rules, which discourage bullying behaviours and identify negative consequences for active bullying and positive consequences for active defending, when developed in conjunction with students were seen by the students as fair and meaningful. In a recent study, a non-confronting approach (which aims to arouse awareness of and empathy for victims suffering) was more effective in primary school and a confronting approach was more effective for group bullying in reducing the prevalence of bullying behaviours (Garandeau, Little, Kärnä, Poskiparta, & Salmivalli, 2011). Pikas (2002) suggests the method of Shared Concern (a non-confronting method) may be more appropriate for adolescents.

Pro-victim attitudes

Previous research indicates that attitudes towards students who are victimised become less supportive with age with adolescents tending to despise and blame the target and be more approving of aggression (Gini et al., 2008; Menesini et al., 1997; Rigby, 1997; Rigby & Slee, 1991). Pro-victim attitudes of bully-victims in this study also on average

declined with age. A reciprocal relationship existed for female bully-victims, whereas strong paths between increased pro-victim attitudes and lower levels of perpetration-victimisation over the transition period and from the end of Grade 8 to the end of Grade 9 was found for male bully-victims. These results emphasise the importance of promoting pro-victim attitudes in primary and secondary school.

Bullies tend to choose victims who are vulnerable ie submissive, insecure, physically weak, in a rejected position in the group, having very few friends or displaying differences from others in some manner and are often seen as personally responsible for their failures (Hodges & Perry, 1999; Ladd & Troop-Gordon, 2003; Salmivalli & Isaacs, 2005; Schuster, 2001; Schwartz et al., 1998; Teräsahjo & Salmivalli, 2003). Importantly, intervention programs need to acknowledge the high status imparted on those who support students who are being bullied (Caravita, Di Blasio, & Salmivalli, 2010). Supporters (those who comfort, support or stand up for those being victimised) have greater empathetic skills, are perceived as and are positive models for the peer group (Caravita et al., 2010; Poyhonen, Juvonen, & Salmivalli, 2010; Sainio, Veenstra, Huitsing, & Salmivalli, 2010; Schwartz et al., 1998). Those who are more supportive of bullying lack empathic understanding of the victims (Poyhonen & Salmivalli, 2008). Programs which focus on empathy and positive bystander behaviour, responsiveness with victimised peers and encourage students to perceive all cases of bullying as severe and unjust while reflecting on their own beliefs and beliefs of their peer group in relation to bullying episodes are critical in increasing pro-victim behaviour and reducing bullying prevalence rates (Almeida, Correia, & Marinho, 2010; Fox, Elder, Gater, & Johnson, 2010; Gini, Albiero, Benelli, & Altoè, 2007; Nickerson, Mele, & Princiotta, 2008).

In an earlier study by the authors (Lester, Cross, Dooley, & Shaw, In submission), similar pathway results were found over the transition from primary to secondary school and the first year of secondary school for victimisation and peer support as was found in this study on perpetration-victimisation. However, over the transition period connectedness to school was a significant protective factor of perpetration-victimisation and not victimisation. Different significant pathways of victimisation and perpetration-

victimisation imply targeted intervention programs during this period need to be developed for both victims and bully-victims, with programs for victims more focused on increasing peer support and programs for bully-victims focused on increasing peer support, connectedness to school, pro-victim attitudes and perceptions of greater negative consequences of bullying.

The strengths of this study include the large sample size and the longitudinal nature of the research design enabling the examination of predictors as well as consequences of victimisation-perpetration. The reliance on self-report of bullying perpetration and victimisation over the adolescent years rather than also using peer, teacher or parent report may result in underreporting of involvement in bullying behaviours, particularly perpetration. As social health was also measured using self report, shared variance is a limitation of the study as estimates of the correlation between bullying behaviours and social health may be inflated. The victimisation and perpetration scores do not contribute evenly to the mean score due to the higher number of victimisation incidents reported, thus the study results reflect victimisation experiences to a greater degree than perpetration. Missing data due to absentee students and students lost to attrition may mean that students with greater levels of involvement in bullying perpetration or victimisation behaviours were not included in the analyses. Data collection procedures in Grade 7 were not consistent with procedures in Grade 8 and Grade 9. Parents may have been present during questionnaire completion by students in Grade 7 which may result in different responses compared to completion in a classroom situation, as was the case in Grades 8 and 9. This reduces the comparability of the data across the time points to some degree. To reduce attrition during the conduct of the study, the research was conducted with a sample of Catholic secondary schools within the Perth metropolitan area, which may affect the generalisability of results. The student cohort followed in this study involved students from over 400 primary schools transitioning to 21 secondary schools. Approximately 4% of students were enrolled in Kindergarten to Grade 12 schools and may not have as disruptive transition experience of changing school grounds from primary to secondary school as students who change schools. Research which includes students from rural areas and Government, non-Government

and Independent schools, as well as a comparison with students who have not changed schools is needed to interrogate the generalisability of the results. It is recommended that further longitudinal research be undertaken following younger primary school students until the end of secondary school enabling further clarification and validation of the relationships found in this research.

Conclusion

There is a need for transition programs with a focus on early and targeted intervention to minimise health risks to students from bullying and to minimise the impact on the school environment. The findings from this study suggest a critical time to implement bullying intervention programs that address peer support, connectedness to school, pro-victim attitudes and in particular negative outcome expectancies around perpetration, is prior to the transition to and within the first year of secondary school.

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