

**Physical and Verbal Bullying Behaviours in School Students: Well-Being,
Supportive School Climate, and the Social Identity Perspective**

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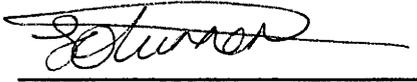
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Declaration

This thesis is submitted to the Australian National University in fulfillment of the requirements for Doctor of Psychology (Clinical). The work presented in this thesis is, to the best of my knowledge and belief, original except as acknowledged in the text. I hereby declare that I have not previously submitted this material, either in full or in part, for a degree at this or any other institution.



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Preface and Author Contributions

All components of this thesis are based on the original work of the author, with the exception of the acknowledgements below.

For the first study presented in this thesis "*Well-being, school climate and the social identity process: A latent growth model study of bullying perpetration and peer victimization*", the author developed the study aims and hypotheses, assisted with data collection, completed the data analyses, interpreted the results and prepared the manuscript for submission.

For the second study, "*Understanding peer aggression and victimization: A mediation study of school climate, school identification and student well-being*", the author developed the study aims and hypotheses, assisted with data collection, completed the data analyses, interpreted the results and prepared the manuscript for submission.

The data featured in both studies of this dissertation is based on data from the ongoing longitudinal project *Understanding the school as an intergroup system: Implications for school reform and improving student and staff outcomes* (Reynolds, Bizumic, Subasic, Melsom, & McGregor, 2007) This project was funded by the Australian Research Council Linkage Project with the Australian Capital Territory Directorate of Education and Training as linkage partner.

The research practicum presented in the Appendix of this thesis, "*Managing emotions and managing others (MEMO): A brief pilot group intervention for managing teasing and bullying for children with Autism Spectrum Disorder*", was conceived and designed by the author. The author was also responsible for the recruitment of the sample, the development of the study aims, the data collection, interpretation of the results and the preparation of the manuscript for the dissertation. Some of the

intervention strategies used in the practicum were taken directly from Laugeson, E. A., & Frankel, F. (2010). *The PEERS treatment manual*. New York & London: Routledge, Taylor & Francis Group - an existing evidence-based social skills intervention manual for children with Autism Spectrum Disorder - and incorporated into a targeted three-week intervention for children experiencing teasing and bullying at school.

The journal articles presented in this dissertation feature the author as the primary investigator in each incidence. However, it is important to acknowledge the other authors of each paper as listed below.

Turner, I., Reynolds, K. J., Lee, E., Subasic, E., & Bromhead, D. (2014). Well-being, school climate and the social identity process: A latent growth model study of bullying perpetration and peer victimization. *School Psychology Quarterly*, 29(3), 320-335. doi: 10.1037/spq0000074

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I would like to begin by acknowledging the support, guidance, encouragement, and patience I have received from my primary supervisor, Katherine Reynolds, over the last six years. This includes not only supporting me through my honours year, but going on to help me achieve my ultimate goal of completing a Doctorate in Clinical Psychology and moving towards my dream of working as a clinician. The hours you have invested in reading and re-reading drafts will never be forgotten. Similarly, particular thanks need to be given to Eunro Lee for her never-ending patience with me. You not only provided advice regarding statistics, but you spent hours making sure that I truly and confidently understood the statistical models I was completing. The passion you both demonstrate for the work you do on a daily basis has filled me with motivation and energy over the course of this degree.

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Overview

This thesis is comprised of a general introduction and a series of manuscripts that are summarised by a general discussion. In addition to this, a research practicum can be found in the appendix.

The general introduction of this thesis (Chapter 1) provides an overview of the literature on peer aggression, bullying perpetration and peer victimization in school children. A case is made for the research that has been completed during the doctoral program by outlining current literature on the relationship between bullying behaviours and student mental health, along with literature that looks at school environment factors (school climate) that impact on bullying behaviours in schools.

Chapters two and three outline the two major studies of this research program and are in the form of already published (Chapter 2) or submitted (Chapter 3) manuscripts. The first study aimed to answer calls for longitudinal research that assesses key individual and school social environment predictors of bullying behaviour across time. The second study was designed to advance our understanding of the mechanisms or processes through which school environment factors comes to influence school bullying behaviours. More specifically, then, the research program (a) explores a number of individual well-being and school social environment variables believed to be related to bullying behaviours in a single research design and (b) improves understanding of those elements that should be the focus of early intervention and prevention programs at school.

Chapter four provides a recapitulation of the aims, findings and implications of the research findings, and then summarises the main limitations, future directions and conclusions of the research. Lastly, the appendix entails a research practicum exploring a pilot group program aimed to teach children with Autism Spectrum Disorder to

understand and manage teasing and bullying at school, and build general emotion regulation skills.

Abstract

Literature has consistently demonstrated a concurrent association between poor well-being and involvement in peer aggression and bullying behaviours not just for the victim but also for the bully. There remains less work that focuses on understanding whether poor well-being can also predict bullying behaviours and, therefore, be used to direct early intervention and prevention work in schools (Fekkes, Pijpers, & Verloove-Vanhorick, 2005; Hong & Espelage, 2012). Literature in this field also experienced a shift in focus when the influence of the school (i.e. the immediate context in which the behaviour occurred), and not just individual and family characteristics, was demonstrated on rates of bullying and victimization. That is, despite similarities between individual background factors, variability in bullying across schools has consistently been shown (Berger, 2007). Concurrently, social psychologists have argued that the critical role of the school environment may be understood in terms of students' psychological connection to the school as a group (i.e. self definition as a school group member) and associated sense of group-based belonging within the school (Reynolds et al., 2007). The aim of the current research program was to incorporate a number of individual-psychological and school social environment variables believed to be related to physical and verbal bullying behaviours in high school in the one research design. A focus was on the school environment factors of school climate (academic support, group support) and school (social) identification (self-definition as a school member), which were conceptualized as important but distinct constructs. The integration of social psychological theory within the educational field extends current thinking about constructs such as school connectedness, school belonging, student engagement and relatedness needs, by reconceptualizing key elements as being the outcome of group (psychological) processes.

With respect to the research, in the first study (Chapter 2), latent growth

modeling was employed that included as predictors (a) anxiety and depression, (b) two school climate factors and, (c) school identification. These models were used to assess the impact of each of these constructs in predicting change in physical and verbal bullying behaviours over three years. Key findings are that change in the school climate factors was the strongest predictor of change in bullying and victimization. Positive change in school identification also predicted a decrease in bullying behaviours over time, whereas an increase in depression or anxiety across time predicted an increase in rates of both bullying and victimization over time. These findings suggest that school environment factors are critical to increases and decreases in bullying and victimization and should be the focus of intervention policies and programs.

The second study in this program of research had a related but distinct aim; to advance understanding of the process through which the school environment impacts on bullying behaviours (Chapter 3). Using a mediation analysis, school identification (i.e. a person's self definition as a school member) was investigated as one mechanism that could explain how it is that the school climate may come to affect individual bullying behaviours. The results showed that school identification negatively predicted peer aggression¹ and partially mediated the impact of group support (but not academic support) on peer aggression when well-being, age, gender, and years at the school were controlled in the model. For the well-being predictors, when both depression and anxiety were also included in the model with the supportive climate factor the latter was the strongest correlate of peer aggression. Such results further support the conclusion that when individual and school factors are considered together, often it is the school environment that is having most impact on bullying behaviours. In line with previous

¹ The words 'bullying perpetration' were substituted for 'peer aggression' in the mediation study of this dissertation in order to meet reviewer requests to revise and resubmit the paper.

research, when either anxiety or depression were examined in separate models depression or anxiety were also strong predictors of peer aggression.

Taken together, future research should continue to work from an approach that aims to understand the complex relationship between individual-psychological and school social environment variables in impacting on incidence of bullying behaviour. School-based interventions may benefit from addressing individual characteristics such as student well-being, and contextual aspects of the school including school climate *and* students' sense of social identity within the school.

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Chapter 1

Introduction to School-Based Bullying Behaviour

Introduction to School-Based Bullying Behaviour

Traditionally, being harassed into a physical fight or called derogatory names by peers was seen as a somewhat unpleasant yet normal and inevitable pattern of behaviour between school children, and for a long time this meant that peer aggression, bullying and victimization did not receive thorough research attention (Berger, 2007). Yet, increased rates of anxiety, depression and reports of young children engaging in suicide attempts associated with incidents of victimization (often termed 'bully-cide') contradicts the previously popular assumption that school-based bullying is both inevitable and mostly harmless (Feder, 2007; Hong & Espelage, 2012). A revival of research on school-based aggression or bullying behaviour has drawn attention to the fact that bullying is of pervasive psychological concern and bullying behaviour has become a public health issue (Klomek et al., 2008; Mitchell & Borg, 2013).

Studies have established the effects of bullying behaviour on all areas of children's lives including social, emotional, and academic functioning, and physical health (Card & Hodges, 2008; Mishna, 2004). Bullying behaviour has been studied from a variety of different perspectives in terms of understanding what causes children to become involved in school-based aggression. Researchers have focused on variables on a continuum from personal or familial factors, to broader cultural and societal factors. For example, studies have looked at personality traits (Sutton & Keogh, 2000; Tani, Greenman, Schneider, & Fregoso, 2003), parenting practices or family violence (Baldry, 2003; Baldry & Farrington, 2000; Espelage, Bosworth, & Simon, 2000), as well as societal or culture norms that may promote or condone violence and aggression (Bowes et al., 2009; Ferguson, San Miguel, & Hartley, 2009).

Evidence that individual background factors could not explain the difference in bullying behaviours across schools also lead to a shift in focus (Berger, 2007). The

immediate context in which the behaviour occurs (i.e., the school) has received increasing research attention. So while research across paradigms highlights the complexity of factors that may contribute to bullying behaviour, there has been a move towards understanding the individual within the school environment. This shift has been particularly important in terms of identifying and developing school-based interventions. Now, school personnel, policy makers, and researchers are focusing on factors related to bullying that may be malleable and open to change as a function of school-based interventions. In order to take valuable action, it is important to understand what bullying behaviour is, the extent of the problem, and what can be done about it in schools (Orpinas & Horne, 2006).

Overview of the Problem

Researchers have demonstrated the potentially harmful short- and long-term mental health problems related to bullying behaviours (Bond, Carlin, Thomas, Rubin, & Patton, 2001; Kim, Leventhal, Koh, Hubbard, & Boyce, 2006; Rigby, 1999; Roland, 2002a; Salmon, James, & Smith, 1998). Literature in this field is also evolving in its recognition that students involved in bullying and victimization are, in many ways, fellow sufferers (Meland, Rydning, Lobben, Breidablik, & Ekeland, 2010). There is comparatively less work that focuses on understanding whether poor well-being can also predict peer bullying and victimization and, therefore, be used to direct early intervention and prevention work in schools (Fekkes, et al., 2005; Hong & Espelage, 2012). Investigating this relationship is critical because well-being services (e.g., school counsellors, youth workers) often are marginalized as secondary support services within schools (Kuperminc, Leadbeater, & Blatt, 2001). Moreover, the main criticism of research to date on well-being and bullying behaviour has been its lack of inclusion of

environmental factors such as the characteristics of the school itself (Espelage & Swearer, 2003; Rigby, 1999).

This lack of more comprehensive research designs is surprising given the many research examples pointing to the meaningful role of the school system in addressing school-based aggression and bullying behaviours (Kasen, Berenson, Cohen, & Johnson, 2004). However, there is very little research that has assessed the long-term effects of constructs like school climate on bullying behaviours (Mitchell & Borg, 2013). Clarity is also needed regarding the particular school climate constructs that are paramount to reducing school-based bullying. Most researchers use a multifaceted approach to measure the climate of a school, yet it may be that students involved in bullying and victimization are impacted in different ways by particular school climate factors (e.g. Gendron, Williams, & Guerra, 2011; Harel-Fisch et al., 2011; Hemphill et al., 2012).

Concurrently, social psychologists have argued that the critical role of the school climate may be understood in terms of students' group membership and sense of self-definition or belonging with the school and its students (Bizumic, Reynolds, Turner, Bromhead, & Subasic, 2009; Reynolds et al., 2007). These researchers suggest that school identification (i.e. self-definition as a school member) and school climate should be viewed as distinct yet important variables of interest, and school identification may be one mechanism through which school climate can come to influence individual behaviours. In fact a range of constructs that are widely researched in the educational literature such as school connectedness, school belonging, student engagement and school climate can take on new meaning when understood through the lens of social identity processes. There are few research examples, though, that address the unique influence of both school climate *and* students' psychological connection with the school and very few are oriented specifically to the domain of peer bullying behaviour

(Bizumic et al., 2009; Reynolds, Lee, Turner, Bromhead, & Subasic, 2014; Wilson, 2004).

To move forward in this field, researchers need to begin incorporating multiple factors demonstrated to be important in understanding peer bullying behaviour in the one research design. Longitudinal work is needed, which will allow researchers to identify factors that can influence or change school-based bullying behaviours over time (Espelage & Swearer, 2003; Mitchell & Borg, 2013). There have also been calls for research that can identify the underlying processes or mechanism through which the school environment is seemingly able to influence individual bullying behaviours (Wilson, 2004). Focusing on multiple factors that can predict bullying behaviour can inform researchers and school personnel of the optimal targets for early intervention and prevention work in schools.

This chapter presents an overview of the definition and landscape of peer aggression and bullying behaviour at school, with particular reference to high school students. Current research regarding the relationship between depression, anxiety and bullying behaviour is examined. In addition, literature regarding the meaningful school social environment variables of school climate and school connectedness is also summarized together with the provision of a theoretical framework which may assist in our understanding of peer aggression and bullying behaviour as a social phenomenon, namely – the social identity perspective. Current educational research on school belonging or connectedness is extended in important ways through integration with social psychological theory and research.

School-Based Aggression and Bullying Behaviour: The Problem and its Impact

The Complexities of Defining Bullying Behaviour

The word bullying is widely used to describe a multifaceted form of peer aggression (Espelage & Swearer, 2003). The World Health Organization (2002), for example, recognizes bullying behaviour as the intentional and repeated use of physical or emotional force or power (threatened or actual) by an individual or group which results in or has a high likelihood of resulting in injury or harm towards one or more persons. Similarly, often referred to as the pioneering researcher in the field, Olweus (1993, p.318), defined bullying behaviour as: “a student is being bullied or victimized when he or she is exposed repeatedly and over time, to negative actions on the part of one or more other students”. These negative actions are intentional, with the aim of inflicting physical or psychological harm or discomfort upon another (Olweus, 1993).

Researchers focused on understanding bullying behaviours in school have, therefore, generally discussed three basic concepts involved in acts of school-based bullying and victimization (Hamburger, Basile, Vivolo, 2011). First, bullying occurs between individuals of a similar age group and with the intention of inflicting harm. When an adult commits hurtful or harmful actions towards a child, this is likely to be considered maltreatment or abuse rather than bullying (Arseneault, Bowes, & Shakoor, 2010). Second, a pattern of interaction is often established between the bully and victim based on the repetitive nature of the attacks (Arseneault et al., 2010). Third, the relationship between the bully and victim is characterised by an actual or perceived power imbalance, in which the victim has difficulty or perceives an inability to defend him or herself (Aluede, Adeleke, Omoike, & Afen-Akpaïda, 2008). This power imbalance can be characterised by a number of things including physical strength, popularity, and grade (Arseneault et al., 2010). However, the mere perception of

helplessness can also constitute a power imbalance between the bully and the victim (Aluede et al., 2008).

So while a) aggressive behaviour, that is b) repeated over time, and c) involves a real or perceived power imbalance, are generally seen as the three hallmarks of bullying behaviour (Hamburger et al., 2011), there remains debate among scholars as to whether all three of these elements must be assessed in order to define an incident as bullying (Hamburger et al., 2011; Vessey, Strout, DiFazio, & Walker, 2014). As a result, the measurement of bullying continues to be conceptualized and operationalized in many ways (Espelage & Swearer, 2003; Smorti, Menesini, & Smith, 2003). For example, many researchers have discussed whether the term “bully” or “bullying” should be used to facilitate assessment of the power differential between the bully and the victim (Cook, Williams, Guerra, Kim, 2010; Smith, Cowie, Olafsson, Liefoghe, Almeida, et al., 2002). Some researchers argue that this will lead to underreporting of incidents. Indeed, when the term “bully “ is used research has been shown to yield lower estimates of behaviours when compared to research asking about a specific behaviour such as “How many times has another student hit you in the last week?” (for examples see; Ando, Asakura, & Simons-Morton, 2005; Jankauskiene, Kardelis, Sukys, & Kardeliene, 2008; Marini et al., 2006).

Researchers also argue that if a victimized child believes being bullied is a “normal” part of school life they are likely to underreport incidences of being “bullied” (Cullingford & Morrison, 1995). Additionally, there is often a high level of stigma associated with disclosing victimization because this, in theory, requires that the target child admit that they perceive their peers to be more powerful or stronger than they are (Orpinas & Horne, 2006). In comparison, researchers who advocate the use of the term “bullying” within their questionnaires argue that this leads to the lowest rate of student

misclassification because not all acts of aggression may be repetitive incidents of bullying (Solberg & Olweus, 2003; Ybarra, Boyd, Korchmaros, Oppenheim, 2012).

Due to this ongoing debate, some scholars provide respondents with a definition of bullying prior to enquiring about experiences specific to the student, while others measure bullying by providing behaviourally-specific questions (such as the frequency of name-calling or kicking). Measures that provide a definition of bullying often include a statement such as “A student is being bullied when another student, or several students say mean or hurtful things... etc.” General questions such as “how often have you been bullied by others in the past school term?” are then used to assess the frequency of bullying (for examples see; Austin & Joseph, 1996; Hoertel, Le Strat, Lavaud, & Limosin, 2012; Roland, 2002a; Schäfer, Korn, Smith, Hunter, Mora-Merchán, Singer, et al., 2004; Solberg, Olweus, & Endresen, 2007). Alternatively, research using behaviourally-specific measures often uses statements such as “we are interested in knowing how kids get along with one another” before asking students to rate the frequency of a specific behaviour (for examples see; Bosworth, Espelage, & Simon, 1999; Crick & Grotpeter, 1995; Mynard, & Joseph, 2000; Orpinas & Frankowski, 2001; Orpinas, Horne, & Staniszewski, 2003; Thompson, Cattarin, Fowler, & Fisher, 1995).

Despite the variability in the literature regarding the features of bullying that should be assessed, scholars generally agree that bullying behaviour can be characterised by not only physical aggression, but also verbal aggression, including spreading rumours, and social exclusion (Hamburger et al., 2011). The most common taxonomy used for classifying bullying behaviour separates behaviours on the basis of the nature of the acts – physical, verbal, relational, and cyber. Four modes of bullying are therefore generally accepted in current literature. Each of these forms is distinct, but

all forms can be perpetrated by the same person and aimed at the same target individual (Berger, 2007; Rigby & Slee, 1991).

The most obvious and well-recognized of these is physical bullying – including hitting, kicking, beating, or pushing. This is the form of bullying that is typically and most easily identified in the school-setting (Bauman & Del Rio, 2006). Verbal bullying is characterised by repeated name-calling, teasing, or the use of derogatory comments, and is thought to be the most common mode of bullying (Isernhagen & Harris, 2003). In one study, Tapper and Boulton (2005) recorded acts of verbal bullying directed toward another student twice as often as acts of physical bullying.

Relational and cyber bullying have more recently become recognised in the field (Campbell, 2005; Marini, Dane, Bosacki, & Cura, 2006). While these modes of bullying are not measured in the current research program they are defined here briefly.

Relational bullying can include social exclusion, spreading rumours, or manipulating friendship groups. Relational forms of bullying naturally involve verbal acts such as the use of derogatory comments; however the key difference between these two forms of bullying is believed to be that relational bullying aims to disrupt the social relationship between the victim and their peer group (Berger, 2007). Cyber bullying can include both verbal and relational tactics, however this mode of bullying takes place using technology outlets such as mobile phones, cameras, and internet sites (Campbell, 2005).

So despite growing consensus on the definition and types of bullying behaviour that exist, the measurement of bullying continues to be operationalized in many ways (Espelage & Swearer, 2003; Hamburger et al., 2011; Smorti, Menesini, & Smith, 2003; Vessey et al., 2014). Arguably, for school psychologists, counsellors, and educators at large, who aim for supportive and safe schools, it is any acts of aggression that will be of concern, with such concern increasing with more extreme forms of aggression in the

form of repeated bullying. Understanding the causes and consequences of acts of peer aggression more broadly is also important for early intervention and preventing the emergence of power differentials and more extreme forms of aggression between students (Mishna, Pepler, & Wiener, 2006; Mitchell & Borg, 2013). An aggressive act that has the potential to cause harm to others at school should ideally be prevented. What is clear, though, is that the term bullying is used to capture a range of behaviours amongst school students. There is an emerging trend amongst some researchers to restrict the term bullying to instances where all three hallmarks of the behaviour can be assessed but consensus surrounding this definition and measurement is still to emerge.

Recent reviews of bullying and victimization measures have suggested that what is more important is that instrument selection is guided by the purpose of the research (Hamburger et al., 2011; Vessey et al., 2014). What this means, for example, is that while school-based or educational researchers may want specific information on frequency and severity of bullying behaviours within their school, school counselors may require particular details regarding the types of bullying students experience or factors that influence students perception of a power imbalance between peers (Vessey et al., 2014). These reviews also argue that the psychometric properties of the measurement tool chosen need to be considered, providing the example that test-retest reliability should be a critical component of the decision making process when conducting longitudinal research (Vessey et al., 2014).

The measures used in the current research program assess the frequency of incidents of bullying perpetration and peer victimization using behaviourally specific questions (e.g. *"A student threatened to hurt me or hit me"*; Orpinas & Frankowski, 2001). This measure has received extensive psychometric testing including test-retest reliability, making it ideal for longitudinal research designs (Escobar-Chaves, Tortolero,

Markham, Kelder, & Kapadia, 2009; Espelage, Holt, & Henkel, 2003; McMahon & Watts, 2002; Orpinas & Frankowski, 2001). Given that the measures used in the current research program clearly capture the frequency or severity of specific behaviours experienced during episodes of bullying but do not assess the power imbalance between peers the term peer aggression is used in Chapter 3 (based on advice from reviewers), whereas "peer aggression" and "bullying behaviour" are used interchangeably in the rest of the thesis to capture negative interactions between students. By understanding the predictors of bullying behaviour using a measure that focuses on frequency and severity of behaviours, it is possible to understand what factors are involved in the escalation of bullying (from mild aggressive incidents to repetitive interactions in which a power imbalance is likely to be established). For mental health professionals, principals and teachers, knowing more about the predictors of peer aggression and bullying behaviour is a high priority and very informative in making decisions about the best possible ways to intervene and create behaviour change within schools.

Prevalence Estimates of Bullying Behaviour

Efforts to measure the extent of the problem around the world have been complicated by a lack of standard protocols regarding the type of questions that should be asked, the type of response categories to provide, and the time frame participants should be asked to recall (e.g. in the past school term, past month, or past week; Orpinas & Horne, 2006). Prevalence estimates of bullying can also vary greatly depending on the source of the respondent. Researchers have used a number of sources to measure bullying incidences including self-reports, peer-reports, and teacher, parent, and researcher observations (Card & Hodges, 2008; Putallaz et al., 2007). Generally reports of bullying are higher using self-report measures, when compared with parent or teacher reports. The accuracy of this is not well understood, however some scholars have

argued that the child's view is crucial considering this is most strongly connected to maladjustment outcomes (Card & Hodges, 2008; Crothers & Levinson, 2004).

Despite these difficulties, researchers have found somewhat comparable prevalence rates of bullying perpetration and peer victimization. According to one Australian study, one in every six students between the age of 9 and 17 is affected by bullying at least once a week (Rigby & Slee, 1991). Forero, McLellan, Rissel and Bauman (1999) surveyed 115 Australian schools and identified 23.7% of the students as bullies, 12.7% of students as bullied by others, and 21.5% as both bullies and victims in the last school term. A more recent Australian study defined the problem as occurring among approximately 17% of Australian students (Aluede et al., 2008). This is not dissimilar to prevalence rates in other countries. For example, a study in the United Kingdom found that 21% of children had been bullied at some time and 17% had taken part in bullying others sometimes or often (Boulton & Underwood, 1992).

Of particular note is a highly cited study measuring prevalence rates of bullying behaviour among 11 to 16 year old children across 25 countries. In an international collaborative effort, this study analysed data from 25 countries using consistent measures, sampling, and administration procedures in order to allow appropriate international cross-cultural comparisons. It was reported that, on average, 10% of children admitted to bullying perpetration, 11% of children reported peer victimization, and 6% reported being both bullied and bullying others (Nansel, Craig, Overpeck, Saluja, & Ruan, 2004). While Australia was not one of the countries involved in this analysis, the literature certainly supports a statement that approximately 10% to 20% of all students will be involved in bullying behaviour during their school life, making bullying and victimization the most prevalent form of aggression in schools (Batsche & Knoff, 1994).

In addition, investigation of prevalence rates worldwide has demonstrated that bullying perpetration and peer victimization are not dichotomous behaviours (Esbensen & Carson, 2009; Espelage & Swearer, 2003). More recent research has challenged this belief, demonstrating the reality of a third group of individuals – the bully-victims (Marini et al., 2006). Bullies are those students identified as the perpetrator, who repeatedly enact aggression upon another individual (Arseneault et al., 2010; Batsche & Knoff, 1994). The victim is the target of bullying behaviour (Arseneault et al., 2010). Victims are not individuals who occasionally get hurt by a peer – most children have occasionally been hurt by a comment, and they are able to shrug this off. Victims are those children who suffer repeated attacks of bullying (Berger, 2007). Finally, there are the bully-victims. Only recently entering the literature, a bully-victim is an individual who is involved in bullying behaviour both as a victim and as a bully at the same time (Menesini, Modena, & Tani, 2009). They represent a smaller but distinct group of individuals (Nansel et al., 2004), and a growing body of evidence suggests that involvement in this role is associated with more extensive negative outcomes (Menesini et al., 2009). However, due to their much smaller prevalence, they are often difficult to study in a statistically meaningful way.

Gender and Age Differences

The type of bullying employed and the extent of the attack may vary according to gender and age. Some researchers have suggested that boys are more likely to employ direct modes of bullying and girls are more likely to use more subtle means of attack (Björkqvist, 1994; Owens, Shute, & Slee, 2000), while other studies have reported no gender differences (Underwood, 2003). Rather than focusing on which gender engages in more bullying, it may be that there is a gender difference in the proportional use of physical and verbal or relational aggression. That is, girls may be more skilled at using

covert forms of aggression (such as social manipulation), making it more difficult for researchers to identify female bully perpetrators (Crick & Grotpeter, 1995; Loukas, Paulos, & Robinson, 2005).

It has been suggested that the proportionally greater use of covert aggression expressed by girls is due to the socialisation process, through which many girls are taught to refrain from physical or outward expressions of anger (Putallaz et al., 2007). One study showed that high levels of overt and direct aggression were much more likely to result in peer rejection for girls than for boys (Henington, Hughes, Cavell, & Thompson, 1998). Boys, on the other hand, may utilize the different forms of bullying more equally (Cillessen & Mayeux, 2004; Tomada & Schneider, 1997).

The general trend in the literature however remains that boys tend to bully and be bullied more than girls (Batsche & Knoff, 1994; Forero et al., 1999). Both sexes are also thought to be crueller to students of the same sex, though when bullying does cross the gender barrier, boys bully girls more than girls bully boys (Olweus, 1996). However, due to inconsistencies in reporting on gender differences some researchers caution against the investigation of gender in drawing conclusions about bullying behaviour, highlighting that gender may not be a particularly reliable predictor (Hong & Espelage, 2012).

There is also debate as to whether age should be used as a reliable predictor of involvement in school-based bullying. Whereas some researchers suggest that bullying behaviour decreases steadily with age (Griffin & Gross, 2004; Olweus, 1993; Seals & Young, 2003), other studies have suggested that physical bullying decreases during adolescence (Brame, Nagin, & Tremblay, 2001) and other covert forms of bullying increase considerably (Dake, Price, & Telljohann, 2003; Xie, Swift, Cairns, & Cairns, 2002).

Carney and Merrell (2001) reported that bullying and victimization peaks between the ages of 9 and 15, while Eslea and Rees (2001) defined involvement in bullying as most frequently occurring between the ages of 11 and 13. There does, therefore, appear to be some agreement that the peak in bullying behaviour includes the period of transition into high school (Pellegrini & Long, 2002). Eslea and Rees (2001) also noted that those bullying experiences that take part in high school or middle school appear to be the most memorable.

In summary, despite diverse methods of measurement, there is growing consensus that bullying behaviour is a serious and concerning form of aggression, affecting up to 20% of Australian school students during their school life (Aluede et al., 2008; Batsche & Knoff, 1994). Bullying can take many forms including verbal, physical, relational and cyber bullying, all of which can have long lasting impacts on children and adolescents (Berger, 2007). However, debate regarding the measurement of bullying behaviour is ongoing and, as a result, bullying continues to be conceptualized and operationalized in a variety of ways (Hamburger et al., 2011; Vessey et al., 2014). Comparisons of the proportional use of the different modes of bullying is also made difficult due to the complexities of measuring behaviours which are often carried out in a covert nature (Henington et al., 1998; Putallaz et al., 2007). Similarly, it is unclear whether age and gender are reliable predictors of involvement in bullying. Nonetheless, the bullying which takes place during the transition into high school or middle school has been labelled as resulting in the most maladaptive outcomes (Eslea & Rees, 2001). The current research project will focus on physical and verbal modes of peer aggression or bullying behaviours in high school students. This is because the data used in the current research thesis was collected as part of an ongoing longitudinal research project, in which only data regarding physical and verbal bullying

behaviour is available. The limitations of this are noted in the discussion section of each of the following studies as well as in the general discussion of the thesis. Moreover, because the use of age and gender as predictor variables has been cautioned against (Hong & Espelage, 2012), these factors will be controlled for as covariates in the current research project.

Bullying Behaviour and Student Well-being

Literature has consistently demonstrated an association between poor well-being and involvement in bullying behaviour not just for victimized students but also for students engaging in bullying perpetration. Elevated rates of depression, anxiety, and suicidal ideation, as well as other internalizing problems such as low self-esteem have been documented (Carney & Merrell, 2001; Kaltiala-Heino, Rimpelä, Rantanen, & Rimpelä, 2000; Roland, 2002a; Salmon et al., 1998; Seals & Young, 2003). There is also literature that describes an increased risk of externalizing problems such as conduct disorder, adolescent criminality, and later antisocial tendencies, particularly for students involved in bullying perpetration. However the study of externalizing behaviour problems is beyond the scope of the current research program and will not be discussed here (for a review of literature on externalizing behaviour problems see Sourander et al., 2007a). Instead the focus will be on the relationship between bullying behaviour and internalizing problems. Research looking at the association between internalizing problems and bullying and victimization has primarily focused on the two most common mental health problems, depression and anxiety.

Bullying Behaviour as a Predictor of Poor Well-being

Predominantly taking the form of cross-sectional methodology, many studies have looked at the relationship between bullying behaviour and student well-being, and have shown that bullying perpetration and peer victimization uniquely contribute to

internalizing problems (Ttofi & Farrington, 2012). For example, looking at depression, Seals and Young (2003) explored depression in both victimized students and perpetrators of bullying amongst students in the seventh and eighth grade. The researchers found that while victimized student were more depressed than bully perpetrators (and students not involved in bullying), bully perpetrators also experienced significantly more depressive symptoms than students not involved in bullying.

The idea that the perpetrators of bullying may also be impacted by poor well-being has been a surprise to many researchers. However, this finding is consistent across a number of studies, with some researchers suggesting that depression is equally likely if not more likely to occur in the perpetrators of bullying behaviour (Roland, 2002b). One study suggested that suicidal ideation occurs most often among adolescents who are bullies (Kaltiala-Heino, Rimpelä, Marttunen, Rimpelä, & Rantanen, 1999). Moreover, while the repeated and frequent nature which characterises most bullying experiences is associated with a high risk of developing internalizing problems, infrequent involvement in bullying behaviour was also related to an increased risk of depression in one study, particularly among girls (Klomek, Marrocco, Kleinman, Schonfeld, & Gould, 2007).

Anxiety and the psychosomatic complaints that often accompany anxiety have also been demonstrated to be associated with bullying behaviour. Researchers have found that school children involved in bullying perpetration and peer victimization are significantly more anxious when compared to their uninvolved peers, and anxiety may be equally common among bullies and victims (Gini & Pozzoli, 2009; Kaltiala-Heino et al., 2000; Salmon et al., 1998).

Existing longitudinal research has predominantly sought to identify the relationship between well-being and school-based bullying, where bullying perpetration

and peer victimization are the predictors. Along these lines, Bond et al. (2001) measured peer victimization and well-being in Australian high school students and found that a history of peer victimization was strongly associated with the onset of self-reported anxiety or depression one year later. The researchers argued that these results demonstrate the potentially detrimental and independent impact of peer victimization, and suggested that preventative programs aimed at reducing peer victimization would also have a substantial impact on student well-being (Bond et al., 2001). Another study measured bullying behaviour in Korean high school students twice in a 10-month period and concluded that internalizing and externalizing behaviour problems were a consequence of involvement in bullying (Kim et al., 2006).

Other longitudinal studies have addressed the long-term well-being outcomes of exposure to bullying perpetration or peer victimization during childhood and adolescents. For example, one study reported that boys who described being a victim of school bullying at the age of 8 had significantly more depressive symptoms in adolescence (Haavisto et al., 2004). The researchers also measured a range of psychosocial factors including; the impact of family structure, help seeking behaviour, number of friends, and somatic health complaints at age 8. Having accounted for a range of psychosocial factors, this research highlights the high independent influence of victimization at school on well-being, and the necessity for early intervention.

The same longitudinal data set was used to identify the adult outcomes of school-based bullying perpetration and peer victimization (Sourander et al., 2007b). The study found that membership as a bully or victim predicted anxiety disorders in early adulthood and frequent bullying perpetration predicted depressive disorders in adulthood. However, given the all-male sample, this longitudinal data is unable to

provide an understanding of the relationships between bullying behaviour and well-being in females.

Poor Well-being as a Predictor of Bullying Behaviour

A fewer number of studies have also examined poor well-being as a predictor of bullying perpetration and peer victimization. For example, Espelage, Bosworth and Simon (2001) found that higher reported symptoms of depression was related to greater levels of bullying perpetration over a four month period. Another study found that children with depressive symptoms were significantly more likely to be victimized by their peers. The authors hypothesized that depressed or anxious behaviours make children 'easy targets' for peer victimization (Fekkes et al., 2005). Other studies have also demonstrated that internalizing problems contribute uniquely to becoming a victim (Boulton & Smith, 1994; Hodges & Perry, 1999). In fact, Hodges and Perry (1999) argued that poor well-being may be both a cause and consequence of peer victimization and suggested a 'vicious cycle' in which internalizing problems lead to the onset of being victimized *and* initial victimization contributes uniquely to later internalizing problems.

In light of these two lines of research student well-being and victimization are likely to form a reciprocal relationship. Along these lines, a recent meta-analysis of 18 prospective longitudinal studies concluded that internalizing problems function as a cause and consequence of peer victimization (Reijntjes, Kamphuis, Prinzie, & Telch, 2010). However, less work has focused on well-being as a cause of involvement in bullying perpetration.

Research looking at correlational and longitudinal relationships between well-being and bullying behaviour demonstrates that involvement in school-based bullying is of mental health significance. Nonetheless, a central limitation of this work has been a

lack of inclusion of other factors related to bullying (Gendron et al., 2011). Researchers have argued that understanding factors that can impact on bullying behaviours in school requires an examination of both the individual and the environment (Espelage & Swearer, 2003; Hong & Espelage, 2012). So while individual well-being factors have been shown to be important in understanding bullying behaviours, often other explanatory factors are not also examined in the same research design. Indeed, Rigby (1999) noted that other factors such as the level of social support available in the school needs to be considered in a comprehensive analysis of a behaviour which takes place within a social context. Yet, very little research has taken into account individual well-being and the school social environment. This is despite research which demonstrates the role of the school in understanding both adolescent well-being (Bizumic et al., 2009; Kuperminc et al., 2001), and bullying behaviour (Cullingford & Morrison, 1995; Ma, 2002).

In particular, there have been calls for further research that focuses on known antecedents or precursors to school bullying behaviour that may be malleable as a function of school-based interventions in order to shine light on the most effective targets for early intervention and prevention work in schools (Espelage & Swearer, 2003; Hong & Espelage, 2012). As such, more integrated analyses that include both well-being and school environment factors are needed to move forward in considering and creating evidence-based intervention and prevention programs. The current research program aims to overcome these limitations by examining a number of key factors that explain variance in physical and verbal bullying behaviours, including two factors of a supportive school climate (group support and academic support), school identification (i.e. students' self-definition as a school member) and individual well-being (anxiety and depression). A review of the literature that supports the understanding of bullying

behaviour as a function of school social context is outlined next. Equally, as will be seen, this research is also limited by a lack of integration of individual psychological or well-being factors.

The School Social Environment

School Climate

Reflecting the internal nature or life of a school, a large body of work has demonstrated the significant and independent influence of the climate of a school on a range of student outcomes (Cohen & Geier, 2010). Current school climate literature generally aims to measure many facets of the school environment, incorporating perceptions of the procedural, disciplinary and interpersonal dimensions of the school. This includes the nature of interactions between staff and students (i.e. meaningful teacher-student and student-student interactions), fairness and inclusion in policy and rule processes, the consistency of disciplinary processes, the emphasis on learning, and parental involvement in school (Bibou-Nakou, Tsiantis, Assimopoulos, Chatzilambou, & Giannakopoulou, 2012; Kasen et al., 2004; Lee & Song, 2012; Ma, 2002; Olweus, 1993; Reis, Trockel, & Mulhall, 2007; Waasdorp, Bradshaw, & Leaf, 2012). These factors have been shown to be negatively associated with bullying behaviour at school. In fact, an environment characterised by teacher intimidation, little emphasis on learning, and a general lack of school organisation may actually condone and promote aggressive interactions amongst peers (Kasen et al., 2004). A recent meta-analysis of 36 studies found a moderate negative effect size between school climate and school violence (including peer aggression and bullying), and advocated that school violence can be reduced by modifying the school environment (Steffgen, Recchia, & Viechtbauer, 2013).

Most research within this domain attempts to capture the complexity of school climate by including a range of sub-factors into an overall general construct of school climate. While informative, this research leaves space to question whether specific elements of school climate should be the focus of intervention with respect to students involved in bullying perpetration and peer victimization. Indeed, there are a few research examples that suggest certain sub-factors may be particularly important in understanding bullying behaviour.

Along these lines, Harel-Fisch et al. (2011) measured 17 school climate items using a cross-sectional design and found that student-teacher relationships were one of the strongest predictors of being a perpetrator of bullying. Using a longitudinal design, another study also emphasized the social-emotional aspects of the school climate, arguing that interventions should target interpersonal aspects of the school such as perceived respect from teachers to reduce school-based bullying (Gendron et al., 2011). However, other cross-sectional and longitudinal research has demonstrated that academic failure can predict involvement in bullying and these researchers suggested that the provision of additional academic support may be most beneficial in helping to reduce incidences of bullying perpetration at school (Hemphill et al., 2012; Reis et al., 2007).

The idea that the climate of a school may encourage or hinder school-based bullying behaviour should provide optimism for school policy makers who are trying to generate attitude and behaviour change. Yet there is very little research that has assessed the long-term effects of constructs like school climate on bullying behaviours (Mitchell & Borg, 2013). It also remains unclear whether interventions aimed at particular aspects of the school environment would be most efficacious for targeting bully perpetrators and victimized students. The current research program includes two

sub-factor measures of school climate, designed to measure the academic or learning focus of the school (termed academic support) and the social-emotional atmosphere of the school (termed group support).

School Connectedness

Within the school social environment literature there is also a growing body of research with an interest in students' sense of connection or belonging with the school (and often using terms such as connectedness, belonging, bonding and engagement synonymously). In 2003 the Wingspread Declaration on School Connections was conducted based on a detailed review of this new generation of research as well as in-depth discussions with leaders in the health and education fields. Defined as students' belief that "adults in the school care about their learning as well as them as individuals" (Wingspread declaration on school connections, 2004, p. 233), this construct is seen to measure the psychological experience of the individual within their school. The review demonstrated the critical role of feeling connected to the school on a range student school outcomes and student well-being, arguing that a high sense of connection to school is associated with lower school-based aggression, less risk-taking behaviour, less emotional distress and improvements in academic outcomes, to name a few (Wingspread declaration on school connections, 2004).

But there is confusion about the school connectedness construct itself and whether it should be viewed, for example, as a component of school climate (Libbey, 2004). Most researchers with an interest in this construct have focused solely on the relationship between school connectedness and student outcomes (Bosworth, Espelage, & Simon, 1999; Cunningham, 2007; Eisenberg, Neumark-Sztainer, & Perry, 2003; Espelage et al., 2001; O'Brennan & Furlong, 2010; You et al., 2008). In contrast, a number of studies have attempted to include a sub-factor or a single item to assess

student connectedness within their general measure of school climate (Giovazolias, Kourkoutas, Mitsopoulou, & Georgiadi, 2010; Harel-Fisch et al., 2011).

There are also a few research examples that have considered both school climate and school connectedness within the one research design. For example, using a mediation analysis, Loukas, Suzuki, and Horton (2006) found that school connectedness mediated the relationship between three school climate constructs (perceived cohesion, perceived friction, and overall satisfaction with classes) and conduct problems.

Additionally, Wilson (2004) showed that the amount of connectedness experienced by students consistently predicted a lower likelihood of involvement in bullying behaviour, despite fluctuations in students' perceptions of the climate of the school. Wilson (2004) concluded that additional research was needed in order to understand the mechanisms or processes through which these school environment variables serve to reduce school problem behaviours (Wilson, 2004). The conceptual and methodological overlap between school climate and school connectedness remains unclear, but this research suggests that they may be related but distinct constructs.

There is also confusion about whether school connectedness is actually an individual psychological experience or whether this construct should be conceptualized as a social psychological phenomenon. Along these lines, researchers have suggested that effective strategies for increasing student connectedness include, amongst other factors, approaches that foster positive and purposeful peer groups and peer norms (Blum, 2005; Wingspread declaration on school connections, 2004). That is, while school connectedness is seen to assess the psychological experience of the individual within the school, some research is suggesting that the development of connectedness to the school may actually be related to the psychology of being a group member within the school.

Recent research has suggested that the inclusion of social psychology theory and research may be beneficial in understanding the role of connectedness or belonging with the school. That is, staff and students self-definition as school (group) members and associated belonging (school identification) may be important. For example, Bizumic et al. (2009) found that students' sense of social identification (self-definition as a group member) with the school fully mediated the relationship between school climate and a range of school outcomes in high school students.

Another study looked at the association between school climate, school identification and individual academic achievement (Reynolds et al., 2015). Similarly, this study found that the association between school climate and academic achievement was partially mediated by school identification. Drawing on social identity and self-categorization theories (Tajfel & Turner, 1979; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987; Turner & Reynolds, 2012) the researchers argued that while the school climate is seen to make up the internal characteristics or life of the school, student social identification may be a potentially critical psychological process involved in making the school climate meaningful for the individual.

One of the implications of this research is that it suggests that school identification (self definition as a school member), and its relationship to school climate, also needs to be considered more explicitly in research on bullying behaviour. Simply creating a positive school climate may not always result in a reduction in bullying behaviours if students do not experience a sense of identification with their school.

So while the conceptual and methodological overlap between school climate and school connectedness remains difficult, the social identity perspective provides a different lens through which to understand school (social) identification, which may

have implications for constructs such as school connectedness and belonging. School identification is considered to be a group process and not the outcome of individual or interpersonal factors. As a result, the current research not only considers the role of individual well-being and different aspects of a supportive school climate, but also investigates the role of social identification with the school in understanding the relationship between school climate and individual bullying behaviours. The social identity framework and its relevance to bullying behaviour is outlined in the next section.

The Effect of School Identification: The Social Identity Approach

How or Why Does School Climate Impact on School Bullying?

According to Social Identity Theory (SIT; Tajfel & Turner, 1979) and Self-Categorization Theory (SCT; Turner et al., 1987), referred to as the social identity perspective, individuals' perceptions of themselves and others are based on abstract social categories, which are then internalized to form part of the self-concept (Turner & Oakes, 1989, 1997). Social identification refers to the process of locating oneself, or others, within a sub-group of possible categories (Turner, 1982).

The theory implies that there are two levels of identification that sit along an interpersonal to intergroup continuum; a personal identity that includes our individual or personal characteristics (i.e. individual distinctiveness), and a social identity which is derived from shared similarities with members of meaningful social categories in comparison to others (e.g. Australian, female, high-school student; Turner, Oakes, Haslam, & McGarty, 1994). A person's social identity, then, is the knowledge that they belong to a particular social group (e.g. a member of the school), and that the group membership has value, meaning and significance for the individual (Tajfel, 1972). This theory stresses that the identity expressed (personal or social) at any given time is a

function of the context in which a particular interaction takes place and the social context is therefore paramount in understanding individual interactions (Oakes, Haslam, & Turner, 1998).

The social identity perspective proposes that when individuals categorize themselves as belonging to a particular social group, the group can begin to exert a powerful influence over cognition, affect, and behaviour previously viewed as under the control of the individual (Nesdale & Scarlett, 2004; Tajfel & Turner, 1986). That is, according to the self-categorization process, one's distinctiveness from others must be defined, at least in part, by the significant or relevant ingroup one shares with those others (Turner et al., 1987). As a result, individuals are not only characterizing others, but also self stereotyping on the basis of their attributes as a group member (Brown & Turner, 1981). Consequently, those aspects of the individual typically thought of as stable and enduring, are in part, the product of a comparative and variable social process (Reynolds & Oakes, 2000; Reynolds & Turner, 2006).

When a person's social identity is psychologically salient, individuals come to see other ingroup members as part of the self ("we" rather than "I") and the norms, values and beliefs that define the group are internalized and influence the attitudes and behaviour of individual group members (Brown & Turner, 1981). The categorization process suggests that identification (sense of connection or belonging as a group member) with a group can reorient a person's understanding of the social environment by outlining the shared norms, goals, and needs of the group (Brown & Turner, 1981).

What this means is that when students feel a sense of identification (self definition and belonging) with their school, they are more motivated to behave in accordance with the norms, values, and attitudes of other school members. Specifically, belonging to a meaningful social group (having a sense of social identity) not only clarifies group

behaviour but also prescribes appropriate behaviour for those individuals. If the school norms clearly oppose and address bullying then identification with the school should reduce individual bullying behaviour. In line with this, a number of social psychological researchers have proposed that involvement in bullying behaviours may be motivated by social identity processes such as level of identification and adherence to group norms (Jones, Manstead, & Livingstone, 2011; Nesdale, 2007; Reynolds et al., 2007).

Existing literature has already demonstrated that group-level processes are involved in individual bullying behaviour (Gini, 2006; Jones, Manstead, & Livingstone, 2014; Nesdale, 2007; Salmivalli, Lagerspetz, Björkqvist, Osterman, & Kaukiainen, 1996). Along these lines, Perkins, Craig and Perkins (2011) found that students will conform to the perceived group (school) norms regarding bullying behaviour. That is, students' perceptions of the attitudes and social norms regarding bullying at their school were significantly associated with individual bullying perpetration. The researchers created a social norm intervention by placing posters around five schools regarding students' accurate norms and attitudes towards bullying (for example, posters reported 9 out of 10 students at this school would not exclude someone from the group to make them feel bad). Homogenization to these accurate norm descriptions was demonstrated when students reported a significant reduction in perceptions of bullying and individual and incidents of bullying and victimization one year later (Perkins et al., 2011).

Likewise, the idea that meaningful group membership (i.e. group identification) can influence individual bullying behaviour has been highlighted by a number of experimental studies. Ojala and Nesdale (2004) manipulated group membership (group identification) and the in-group norms (i.e. to bully or to treat others fairly). The researchers found support for the social identity perspective by demonstrating that students were more likely to retain liking for individuals within their in-group as long as

they acted in accordance with the group norm, even if this was to bully. Equally, children's intentions to engage in bullying also increased when they belonged to a group that held a norm of out-group dislike (Nesdale, Durkin, Maass, Kiesner, & Griffiths, 2008).

Similarly, Duffy and Nesdale (2009) found that incidences of bullying increased in children belonging to groups with a norm supporting bullying in comparison to children belonging to a group with an anti-bullying norm. Moreover, rates of bullying increased to the degree that in-group members were representative (prototypical) or more strongly identified with the group. The form of bullying (e.g. verbal, physical, relational) was also comparable between group members in this study and several others, highlighting that fact that group members do resemble each other in terms of their involvement in bullying (Espelage, Holt, & Henkel, 2003; Salmivalli, Huttunen, & Lagerspetz, 1997; Salmivalli, Lappalainen, & Lagerspetz, 1998).

Jones, Haslam, York, and Ryan (2008) also manipulated the degree to which students identified with the in-group they were assigned to. The researchers argued that by manipulating the degree of social identification with the group, investigators are better able to conclude that social identity processes are influencing participants' actions. In accordance with Ojala and Nesdale (2004), the researchers found that the acceptability of bullying behaviour was dependent on groups norms. In addition, higher in-group identification (when bullying was not the norm) was associated with a significantly less favourable view of the bully and a belief that the member who bullied should be punished as their behaviour threatened their group norms and shared social identity.

These studies demonstrate that the acceptability of bullying behaviour is not only dependent on the group norms and attitudes (which often are prescribed by the school

climate) but also the extent to which that group membership is significant and meaningful for the individual. When students identify with the school they are motivated to act in accordance with the school's attitudes and norms in order to maintain their status and membership in the group. The school climate may be fundamental in advocating how students should treat each other, while students' sense of identification with their school may be crucial for students to take meaningful action against bullying behaviour. The term school identification, then, relates to a psychological connection to the school as a community or group and is a process through which the group can impact on individual group members.

Overall, the research outlined supports the application of the social identity framework to individual behaviour and outcomes in school, and suggests that school identification may be central in understanding the significant and influential role of the school climate. While both school climate and group identification (social identity processes) have been shown to be of significant interest in understanding individual bullying behaviour, to our knowledge, no previous research has concurrently measured these two distinct yet meaningful variables and their impact on school-based physical and verbal bullying perpetration and peer victimization. It is also the case that a range of other factors that are predictive of bullying behaviours such as student mental health and well-being (anxiety and depression) have not been investigated within these social identity models.

The Current Research Program

The current research program investigates relations between a number of individual-psychological and school social environment variables in understanding physical and verbal bullying perpetration and peer victimization behaviours. Despite calls for further research that addresses multiple precursors of school bullying

behaviour, most research to date has focused on either individual-psychological or school social environment variables in explaining bullying behaviour (Espelage & Swearer, 2003; Mitchell & Borg, 2013). Furthermore social environment factors have only recently incorporated a systematic analysis of group psychology and group processes which are adding value in understanding school outcomes. School climate and school identification (as conceptualised within the social identity perspective) are both investigated in this research.

Literature has also predominantly focused on the mental health outcomes associated with being involved in bullying. For example, that being involved in bullying or victimization results in internalizing problems such as depression and anxiety. But there is also some research that suggests a reciprocal relationship between well-being and bullying behaviour, primarily for the victimized students who often are viewed as easy targets (Hodges & Perry, 1999; Reijntjes et al., 2010). The current research program focuses on well-being as well as school factors, including two sub-factors of school climate (and not one general factor) and students' sense of identification with their school, as precursors to bullying and victimization. Focusing on factors that can predict or change bullying behaviour within the school can inform our understanding of the best targets for early intervention and prevention work in schools. When possible the alternative (reverse) models have been computed, where bullying and victimization impact on the other variables of interest.

The first study of this research program investigates whether changes in depression and anxiety, two school climate sub-factors, and school identification are related to changes in physical and verbal bullying perpetration and peer victimization across three years. Given the longitudinal design, this study will advance our understanding of the relationships between each of these factors and bullying behaviour.

Furthermore, comparison of the strengths of these relationships can provide insight into which factors should be a focus for early intervention and prevention work in schools.

The second study of this research program has a particular focus on advancing our understanding of the distinct and critical role of social identity processes, by examining the mediating role of identification with the school in understanding the relationship between two school climate sub-factors and bullying behaviours (or peer aggression and victimization). Social identification with the school may provide one explanation of how the school environment comes to influence individual outcomes. Moreover, these relationships are considered in a study that also accounts for individual well-being. To our knowledge, no previous research on bullying behaviour has measured school climate and individual psychological factors in the one research designs (especially using a longitudinal design), furthermore, including different school climate sub-factors and social identification.

Aims of the Current Research Program

To summarize, the objective of the current research program is to extend previous research by exploring the contributions of a number of individual-psychological and school social environment variables on physical and verbal bullying behaviours in high school students. The specific aims of the research are:

- 1) To investigate the contributions of poor individual well-being (depression and anxiety), two school climate sub-factors (group support and academic support), and school identification (self definition as a group member) in understanding bullying perpetration and peer victimization behaviours in the one research design (Study 1 and 2);
- 2) To answer calls for longitudinal research (Espelage & Swearer, 2003; Rigby, 1999) which measures individual and school social environment

variables that can produce change in incidences of bullying behaviours across time, in order to establish the most appropriate targets for early intervention and prevention work in schools (Study 1); and

- 3) To advance our understanding of the mechanisms or processes through which the school environment comes to influence school bullying behaviours (Wilson, 2004). This was done through the inclusions of the social identify framework and assessing the mediating role of social identification in explaining the relationship between school climate and bullying behaviours (Study 2).

It is hoped that this research will help to further elucidate factors contributing to involvement in physical and verbal school-based bullying behaviours and improve our understanding of those elements that should be the focus of multidimensional early intervention and prevention programs at school.

Chapter 2

Well-Being, School Climate and the Social Identity Process: A Latent Growth

Model Study of Bullying Perpetration and Peer Victimization

Background to Study One

There is a wealth of literature that focuses on the concurrent association between poor social, emotional, behavioural and academic functioning and being involved in bullying at school. In terms of student well-being, emerging literature also suggests a reciprocal relationship between involvement in bullying behaviour and mental health problems, particularly for victims. In contrast, there is less research that has looked at the long-term impact of school social environment variables on bullying and victimization (Mitchell & Borg, 2013). Moreover, the main criticism of this work has been that researchers often study either the individual or the environment in which the behaviour takes place (Gendron et al., 2011). There is also confusion in relation to the school climate construct itself and its relationship to other factors such as school connectedness or belonging (Wilson, 2004). In light of this, there have been calls for longitudinal research designs that address multiple predictors of bullying and victimization to shed light on the most effective targets for early intervention (Espelage & Swearer, 2003; Hong & Espelage, 2012). Given these issues, the first study aimed to extend previous research by answering calls for longitudinal research that measures the influence of a number of individual-psychological and school social environment variables in the one research design.

This study was accepted for publication on the 16th June 2014 in a special issue on school climate, aggression, peer victimization, and bullying perpetration in *School Psychology Quarterly*. It is noteworthy that this study was accepted for publication without concern being raised by reviewers about the terminology of “bullying” and “victimization” being used based on the measurement tool chosen. For thoroughness, the published paper is presented here in full. The introduction of the paper reiterates key points presented in the introduction of the dissertation (Chapter 1). The reference for

this paper is: Turner, I., Reynolds, K. J., Lee, E., Subasic, E., & Bromhead, D. (2014). Well-being, school climate and the social identity process: A latent growth model study of bullying perpetration and peer victimization. *School Psychology Quarterly*, 29(3), 320-335. doi: 10.1037/spq0000074

Abstract

The present study concerns longitudinal research on bullying perpetration and peer victimization. A focus is on school factors of school climate (academic support, group support) and school identification (connectedness or belonging), which are conceptualized as related but distinct constructs. Analysis of change on these factors as well as individual well-being across time contributes to understanding bullying behaviour. Latent growth modelling was employed to examine the predictors of anxiety, depression, two school climate factors and school identification in understanding change in physical and verbal bullying behaviour. The sample included 492 Australian school students (means age 15 years, 53.5% male) in grades 7 to 10 who completed measures over three years. Academic support and group support were the strongest predictors of change in bullying and victimization. Positive change in school identification also predicted a decrease in bullying behaviour over time. An increase in depression or anxiety across time predicted an increase in rates of both bullying and victimization over time. Future research should continue to understand the complex relationship between individual-psychological and social-psychological variables in impacting on incidence of school-based bullying. On a practical note, school-based intervention programs may benefit from an approach that aims to target the school climate, social identity with the school, and promote individual psychological well-being.

Introduction

Growing worldwide concern about school-based bullying and its effect on school children has generated much activity among scholars and policy makers who are trying to understand the extent of the problem, and what can be done about it. Individual mental health such as depression and anxiety is significantly associated with involvement in bullying, as a perpetrator or victim (Kaltiala-Heino, Rimpelä, Rantanen, & Rimpelä, 2000; Roland, 2002a). However, research has evolved from understanding bullies and victims solely on the basis of their individual characteristics. Mounting literature suggests that school-based bullying also has to be understood in terms of the context in which it takes place – the school (Kasen, Berenson, Cohen, & Johnson, 2004). Although it is recognized that school climate is important in reducing bullying, clarity is needed regarding the particular school climate constructs that make a difference. It may be that bullies and their victims are impacted in different ways by particular school climate factors. Much of this work on bullying is cross-sectional leading to repeated calls for longitudinal research incorporating both individual and school climate factors. Without such evidence it is difficult to gain insight into those factors that should be the target of intervention and prevention.

There is also confusion in relation to the school climate construct itself and its relationship to other factors such as school connectedness, belonging and student engagement (Wilson, 2004). Recent work has examined the construct of school climate embedded within a social psychology framework. In particular, social identity theory (Tajfel & Turner, 1979) and self-categorization theory (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987) argue that school climate *and* students' psychological connection are related but distinct constructs (Bizumic, Reynolds, Turner, Bromhead, & Subasic, 2009; Reynolds, Lee, Turner, Bromhead, & Subasic, 2014). From this social

psychological perspective, when people identify with a group they internalize the norms, values and beliefs that define the group. What this means for the school context is that school norms that champion respect and care along with an individual's psychological connection to the school should impact on bullying behaviour (Bizumic et al., 2009; Duffy & Nesdale, 2009; Jones, Haslam, York, & Ryan, 2008).

Given these issues, the present study aims to extend previous research in a number of important ways. These include (a) measuring the influence of a number of individual-psychological and social-psychological variables in the one research design, (b) providing conceptual clarity regarding the distinction between school climate and school identification (students sense of connection to the school) using the social identity framework, and (c) answering calls for longitudinal research, which can shed light on those factors that can produce change in incidence of bullying behaviour across time.

Depression, Anxiety, and Bullying Behaviour

Cross-sectional research has demonstrated that bullies and victims show significantly higher rates of depression and anxiety when compared to students not involved in bullying (Kaltiala-Heino et al., 2000; Menesini, Modena, & Tani, 2009; Seals & Young, 2003), and these symptoms may be most detrimental for female students (Roland, 2002a). However, being mostly cross-sectional, this research cannot infer whether psychological factors are a cause, consequence or perhaps a concomitant correlate of involvement in bullying behaviours.

Longitudinal research has attempted to identify the relationship between mental health and bullying behaviour where the focus is on explaining student well-being. For example, involvement in bully perpetration or peer victimization in primary school has been associated with poorer mental health outcomes in older-adolescence and adulthood

(Haavisto et al., 2004; Kumpulainen & Räsänen, 2000). In an Australian study it was found that being bullied at age 13 was associated with the onset of symptoms of anxiety and depression one year later (Bond, Carlin, Thomas, Rubin, & Patton, 2001). There are also a few examples of research that has looked at negative well-being as a precursor to bullying behaviour. For example, Espelage, Bosworth and Simon (2001) found that higher reported symptoms of depression was associated with greater levels of bully perpetration over a four month period.

Despite the research conducted to date there remains mixed evidence regarding the relationship between bullying and well-being, with some researchers arguing that mental health may be both a cause and a consequence of bullying perpetration and peer victimization. For example, Hodges and Perry (1999) suggested a 'vicious cycle' in which internalizing problems lead to the onset of being victimized *and* initial victimization contributed uniquely to later internalizing problems. Additional longitudinal research is needed, particularly research which can identify factors that can predict or explain bullying behaviour and therefore shine light on potential targets for intervention.

A further limitation of existing research has been a lack of inclusion of other factors related to bullying (Gendron, Williams, & Guerra, 2011). Researchers have called for longitudinal analyses that consider multiple variables such as gender, internalizing problems, environmental or familial factors, or attributes of the school (Espelage & Swearer, 2003). Indeed, very little research has taken into account individual well-being and school factors such as social climate. So while individual psychological factors have been shown to be important in understanding bullying behaviour, often other explanatory factors such as school climate are not also examined in the same research design. The current research seeks to overcome this limitation.

Before describing the current study in detail, though, it is useful to outline relevant research that demonstrates the relationship between school variables such as school climate and bullying behaviour.

School Social Environment Effects

There is little doubt the school context is important in understanding adolescent development. One central construct used to understand the school context is school climate, which includes whether within a school there is a shared mission and common purpose, involvement in decision-making, consistency with which rules and policies are implemented, parental involvement, supportive and meaningful student-teacher and student-to-student interactions and an emphasis on learning (Kasen et al., 2004; Ma, 2002; Reis, Trockel, & Mulhall, 2007). These factors have been shown to be negatively associated with bullying behaviour at school.

While this research is informative, there is a focus on school climate as a general factor. This approach leaves open the question of whether it is specific elements of school climate that are of particular interest with respect to bullying and victimization. There are a few research examples that suggest certain sub-factors may be particularly important in understanding bullying behaviour. Along these lines, Harel-Fisch et al. (2011) measured 17 school climate items using a cross-sectional design and found that student-teacher relationships were one of the strongest predictors of being a perpetrator of bullying. Using a longitudinal methodology, one study found that academic failure predicted involvement in bullying and suggested that providing these students with additional academic support may help reduce such incidences (Hemphill et al., 2012). However another longitudinal study emphasized the social-emotional aspects of the school climate, arguing that interventions should target the “distal contextual aspects”

of the school such as perceived respect from teachers to reduce bullying (Gendron et al., 2011, p.162).

In addition, researchers have called for conceptual clarity surrounding the constructs of school climate and students' sense of connectedness or belonging with the school (Wilson, 2004). It has been demonstrated that students who feel a high sense of connection or belonging with their school and its academic goals engage in less risk taking behaviour, their academic performance improves, and school-based aggression is reduced (Wingspread declaration on school connections, 2004). While some researchers see school connectedness as a component of school climate (Giovazolias, Kourkoutas, Mitsopoulou, & Georgiadi, 2010; Harel-Fisch et al., 2011), others measure students' sense of connection or belonging with the school, making no mention of school climate (Bosworth, Espelage, & Simon, 1999; O'Brennan & Furlong, 2010; You et al., 2008). However, it has been suggested that school climate and school connectedness or belonging should be viewed as distinct yet significant aspects of the school social environment (Bizumic et al., 2009).

Indeed, evidence indicates that measures of school climate and students connectedness do not always correspond (Wilson, 2004). Recently it has been argued that while the school climate may define the characteristics of the school, students' sense of connectedness with the school may be a potentially critical psychological process through which the school comes to influence individuals. In support of this idea, Bizumic et al., (2009) found that students' sense of connection with the school mediated the relationship between school climate and positive well-being outcomes. Drawing on social identity and self-categorization theories (Tajfel & Turner, 1979; Turner et al., 1987; Turner & Reynolds, 2012) these researchers make the case that school climate and a sense of connectedness are related but distinct constructs. In order

to understand the relevance of this construct and associated social psychological theory and research to the educational domain the social identity framework is outlined in the next section.

Why is Student Belonging and Connectedness Important? The Social Identity Framework

Building bonds and social connections with others is part of human nature. One way this has been demonstrated in social psychology is through the concept of social identity. In both social identity (Tajfel & Turner, 1979) and self-categorization theories (Turner et al., 1987) one's social identity is the knowledge that one belongs to a particular social group, and that the group membership has value and significance for the individual (Tajfel, 1972). When individuals categorize themselves as belonging to a particular social group, they self-stereotype in terms of the norms, values and beliefs that define the group. In this way the defining features of the group become internalized and shape group members' own self-definition (Turner, 1991).

These ideas are of direct relevance to school-based bullying. Belonging to a meaningful social group (having a sense of social identity) not only shapes self-definition but also prescribes appropriate behaviour for those individuals. As such, when students feel a high sense of identification (connectedness or belonging) with their school, they become motivated to behave in accordance with the norms, values, and attitudes of other school members (Bizumic et al., 2009; Turner & Reynolds, 2012). If the school norms clearly oppose and address bullying then identification with the school should impact on individual bullying behaviour.

Along these lines, Perkins, Craig and Perkins (2011) found that students' perceptions of the school norms regarding bullying were significantly associated with bullying behaviour. When provided with accurate norms towards bullying (for example,

posters reported 9 out of 10 students at this school would not exclude someone from the group to make them feel bad) students reported a significant reduction in bullying behaviour one year later. This research demonstrates an association between perceptions of the group (school) norms and attitudes, and students' motivation to act in accordance with those norms.

The idea that meaningful school membership can influence individual bullying behaviour has also been highlighted by a number of experimental studies. Several studies have manipulated group identification and the in-groups norms (to bully or to treat others kindly). Duffy and Nesdale (2009) found that incidences of bullying increased in children belonging to groups with a norm supporting bullying in comparison to children belonging to a group with an anti-bullying norm. Rates of bullying also increased the more group members were representative of the group (prototypical) or the more strongly identified with the group they were. Jones et al. (2008) found that higher in-group identification (when bullying was not the norm) was associated with a significantly less favourable view of the bully and a belief that the member who bullied should be punished as their behaviour threatened their group norms and shared social identity.

While both school climate and social identification have been shown to be of significant interest in understanding individual bullying behaviour, to our knowledge, the longitudinal relationship between social identity processes (school identification) and bullying behaviour in an existing school sample has not previously been studied. As described in more detail below, in the current study relationships between two school climate factors and school identification as well as individual well-being (anxiety and depression) and bullying behaviour are examined across time.

The Current Study

The present study explores school-based bullying behaviour over time using a 3-year longitudinal design. The study investigates whether change in depression and anxiety, two school climate factors, and school identification are related to changes in physical and verbal bully perpetration and peer victimization across three phases. Given the longitudinal design, this study will advance understanding of the relationships between each of these factors and bullying behaviour. Furthermore, comparison of the strengths of these relationships can provide insight into which factors should be a focus for intervention.

Translating previous, and mostly cross-sectional and experimental, findings to a longitudinal design, it was expected that both change in depression and anxiety would positively predict increased rates of bullying behaviour over time, so that an increase in internalizing problems would predict an increase in bully perpetration and peer victimization. The social psychological environment was also examined to test whether positive change in perceptions of the two school climate factors (academic support and group support) would predict a decrease in bullying behaviour over time. Further, the social identity framework suggests that positive change in students' sense of identification with school should predict a decrease in rates of both bullying perpetration and peer victimization over time. Because gender and age effects have been reported in previous research (Dake, Price, & Telljohann, 2003; Putallaz et al., 2007; Xie, Swift, Cairns, & Cairns, 2002), these variables were controlled for in the current study.

Method

The data used in the present study was collected as part of an ongoing longitudinal research project (Reynolds, Bizumic, Subasic, Melsom, & McGregor,

2007). Responses from three phases (in 2009, 2010 and 2011) were used to explore relationships between variables of interest.

Participants and Procedures

On an annual basis, students from four Australian high schools in grades 7 to 10 were asked to provide written informed consent to participate in the research and to complete a survey booklet. Two of the schools were high school only (Grades 7-10) while two schools enrolled students from pre-school to grade 10 (Grades P-10). This convenience sample was from schools that volunteered to participate in the grand project from a district with a population of approximately 350,000. School size and socio-economic status (SES) of this sample roughly covered the range of school distributions in the district. The total enrolments in the two grade 7-10 high schools were 387 and 783 and for the P-10 schools enrolments were 437 and 1500. SES ranged from 996 to 1121 for the Australian Index of Community Socio-Educational Advantage (ICSEA, standardized with a 1,000 mean with a 100 standardized deviation; Australian Bureau of Statistics (ABS), 2009). Language spoken at home other than English ranged from 17% to 28% for these schools while the overall Australian mean percentage is 18.1% (ABS, 2013).

From the annual survey conducted at each school, students who had completed the survey on three consecutive occasions were selected for the current study. For some students it was not possible to match responses across all three phases (e.g., they had changed schools, were absent on any of the survey days). The final sample consisted of 492 students from a possible pool of 968 students. The mean age of the students in the sample was 15.01 years old in phase 3 (SD = 0.90, ranged from 13 to 17). A slight majority of students reported their gender as male (N = 263, 53.5%).

Measures

The survey booklet included various standard demographic questions including students' age, gender, and number of years at the school. The measures used to assess key constructs were as follows;

Bullying and Victimization. A 9-item aggression scale and 10-item victimization scale based on Orpinas and Frankowski (2001) were used to assess the frequency of physical and verbal bullying perpetration and peer victimization. Students responded on a scale from 0 (*0 times*) to 6 (*6 or more times*), how many times in the last 7 days they engaged in physical or verbal bullying (e.g. "*I pushed or shoved other students*", "*I called other students bad names*") and were the targets of physical or verbal bullying (e.g. "*A student beat me up*", "*A student threatened to hurt me or hit me*"). These scales showed good internal consistency across the three years of measurement (bullying ranged from $\alpha = .87$ to $\alpha = .89$ across three phases; victimization ranged from $\alpha = .89$ to $\alpha = .91$).

Depression and Anxiety. Two of the subscales were used from the Australian adolescent version of a 30-item Mental Health Inventory (MHI; Heubeck & Neill, 2000; Veit & Ware, 1983). Participants responded on a scale from 1 (*none of the time*) to 6 (*all the time*) how often during the past month they have felt various feelings. The Depression scale included 5 items (e.g. "*Low or had very low spirits*", "*Depressed*"; scale reliability ranged from $\alpha = .87$ to $\alpha = .88$). The Anxiety scale (10 items, e.g. "*Anxious, worried*", "*Nervous or jumpy*") also demonstrated good internal consistency (ranged from $\alpha = .85$ to $\alpha = .87$).

School Climate. A school climate measure was developed by Bizumic et al. (2012) as part of the Reynolds et al. (2007) project including 19 items and using a 1 (*disagree strongly*) to 7 (*agree strongly*) scale. Two factors of school climate were

analysed: Academic Support (5 items, e.g. “*I believe the school is focused on helping me learn*” and “*I believe that staff at this school follow things up*”) and Group Support (6 items, e.g. “*I believe that people at this school are mean to one another*” [reversed], and “*I feel that people at this school listen to one another*”). The reliability for Academic Support and Group Support ranged from $\alpha = .86$ to $\alpha = .87$ and $\alpha = .84$ to $\alpha = .86$ across three phases, respectively. The treatment of Academic Support and Group Support as sub-factors of a general school climate factor was supported by exploratory factor analysis and confirmatory factor analysis reported in detail elsewhere (Bizumic et al., 2012; Turner, Reynolds, Lee, Subasic, & Bromhead, 2015).

School Identification. A 4-item measure of school identification was included (“*Being part of this school is important to me*” and “*I feel a strong sense of connection with this school*”) using a scale from 1 (*disagree strongly*) to 7 (*agree strongly*). This scale showed good reliability over time ($\alpha = .89$ in all three phases). Previous CFA has also supported the use of this scale as distinct from the school climate factors (Reynolds et al., 2014; Turner et al., 2015).

Overview of Analyses

1) Attrition effects were examined to test for differences between the current sample and those students in the same year groups for whom three phases of data were not available.

2) Within the current sample, missing values analysis and imputation was conducted with SPSS 20 following examination of descriptive statistics.

3) For the longitudinal analysis, unconditional Latent Growth Models (LGMs) were conducted prior to conducting conditional LGMs using Mplus V.6 (Muthén & Muthén, 2010). As a random effects model which estimates individual differences in growth trajectories from a sample, a growth curve is represented by two latent factors;

1) an intercept factor, which represents the start point of the growth trajectory at phase 1 of data collection or base line; and 2) a slope factor, which represents the shape of the growth trajectory over time (MacKinnon, 2008). The current study modelled the simplest form of the LGC slope factor representing linear change across time with the time points fixed at 0, 1, 2 to estimate the slope.² The unconditional LGM investigates variance in the intercept and slope with significant results indicating that individuals are substantially different in their baseline level and change rate for the predictor variables.

4) To test study hypotheses, conditional LGMs of bullying and victimization were regressed upon parallel LGMs (Muthén & Curran, 1997) of each predictor. Age and gender were included as covariates in the whole model which included the predictor parallel growth factors.

Therefore, using conditional parallel LGMs it was examined whether changes in bullying and victimization were predicted by changes in individual-psychological and social-psychological factors including school identification, two school climate factors (group support and academic support), anxiety, and depression across three phases. In total, ten conditional parallel LGMs (2 outcome variables X 5 predictors) were tested.

The model fit indices used to evaluate LGMs for continuous variables were Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) with the greater than or close to .95 criteria; and maximum likelihood (ML)-based standardized root mean squared residual (SRMR) and the root mean squared error of approximation (RMSEA) both with the less than or close to .08 criteria (Hu & Bentler, 1999; Ullman & Bentler, 2012).

² More complicated forms of logistic, quadratic or cubic shaped growth are available to examine the chronic trajectories in a variable, however these were beyond the current study interests and require more than a three-phase data structure.

However, change in bullying and victimization was measured and analysed as counts. Count dependent variables are usually modelled assuming the Poisson Distribution with equal mean and variance (Atkins, Baldwin, Zheng, Gallop, & Neighbors, 2012), however due to overdispersion in the current data the Negative Binomial (NB) link function was used (Atkins et al., 2012). Therefore the usual model fit indices such as CFI or RMSEA could not be computed for the NB LGMs. Thus alternatively a nested-model comparison procedure was used (Tomarken & Waller, 2005) as a manual method of computing model fit indices (Muthén & Muthén, 2005). The comparison procedure contrasted the log-likelihood statistics of a theoretical model and a nested model. In the theoretical models the slope of bullying or victimization over time was regressed upon the slope of the predictors, while in the nested models the relations (path) from the slope of the predictors to the slope of bullying or victimization were constrained at zero (Bentler & Bonett, 1980). A significant log likelihood difference indicates that the theoretical models (see Figure 1 and 2) show a better fit of the data than the nested models (Settoon, Bennett, & Liden, 1996).

Results

Data Distributions, Attrition and Missing Analysis

Overall, students reported between 0 and 54 counts of bullying behaviour in the “last week” and between 0 and 60 counts of victimization over the “last week” across the three years. Students reporting no bullying perpetration ranged from 17.1% (phase 1) to 14.2% (phase 3). Similarly, 17.1% of students at phase 1 to 23.2% at phase 3 reported no victimization.³

³ Considering the number of zero counts zero inflation models were examined for all the analyses but did not show any significant results.

To examine possible sampling bias based on attrition effects the phase 1 responses for students in the current sample were compared with the phase 1 responses for students where three phases of responses were unavailable. It appears as if those students included in the current sample reported less bullying ($M = 9.15$ vs 11.59 times in the past 7 days, $b = -0.274$, $p < .01$) and victimization ($M = 9.64$ vs 11.71 times in the past 7 days, $b = -.16$, $p < .05$) at phase 1 than the unavailable students. The current sample of participants also perceived significantly more academic support ($M = 4.61$ vs 4.46) and school identification ($M = 4.76$ vs 4.51) than the excluded students, but no differences were found in perceptions of group support. For wellbeing the current sample of participants experienced significantly less anxiety ($M = 2.16$ vs 2.36) and depression ($M = 2.02$ vs 2.27) compared to the students for whom data was unavailable. These results indicate that students for whom it is possible to collect three phases of longitudinal data (compared to a sample when this is not the case) are less likely to get involved in bullying and victimization, more likely to experience positive school climate and school identification along with better reported well-being. The findings reported below need to be interpreted in light of these sample characteristics. However, it is still the case that within the current sample over 75% of students were reporting bullying and victimization.

Means, standard deviations and correlations between variables are available as supplementary material online. Using SPSS 20, Little's MCAR test (Little & Rubin, 2002) showed that data were missing at random for the school social environment variables. The mental health, bullying and victimization variables were also found to have data missing at random (using student's t-test because of extreme positive skewness). Based on these analyses all missing values were imputed with the Expectation Maximization (EM) method for the main analysis while the demographic

missing cases were excluded. The normality assumption of multivariate statistics was not met for the study variables, therefore the Maximum Likelihood estimator with robust standard errors (MLR) estimator was employed (Muthén & Muthén, 2010) for all models.

Changes in Variables Over Three Phases: Unconditional LGM

To inform the LGM for the main analysis unconditional LGM was conducted to examine whether there were significant changes in each variable (bullying and victimization counts, academic support and group support, school identification, and anxiety and depression levels) and whether the slope variance was significant or not. Results indicated that over the three phases, there were significant increases for bullying ($\Delta LL = 15125.12, p < .01; \beta = 0.18, p < .01$), depression ($\chi^2(1,492) = 0.24, p = 0.62; \beta = 0.11, p < .01$), and group support ($\chi^2(1,492) = 0.07, p = 0.78; \beta = 0.13, p < .01$), as indicated by the slope β s.

With respect to slope variance, for all variables except victimization, individual students were significantly different in their rate of change. The results of the unconditional LGMs are available as supplementary material online. One of the strengths of LGM, as a random effects model, is the ability to analyse longitudinal change when individuals substantially differ (MacKinnon, 2008). Therefore this preliminary analysis of slope variance, showing significant results for most variables, supported the use of LGM for the main analyses.

Main Analyses: Conditional Parallel LGM

In each conditional parallel LGM, the intercept of the outcome variable was regressed on the intercept of a predictor variable; controlling for age and gender. Meanwhile the slope of the outcome variable was regressed on both the intercept and

slope of the predictor variable⁴ This is illustrated in Figure 1, in which two sets of growth factors were modelled in a parallel growth process, including school identification scores and bullying perpetration counts over three phases. All the estimated coefficients of the conditional parallel LGMs are standardized, which means that the relative effect of change in each predictor variable can be compared with one-another. These comparisons are informative for intervention strategies to address bullying perpetration.

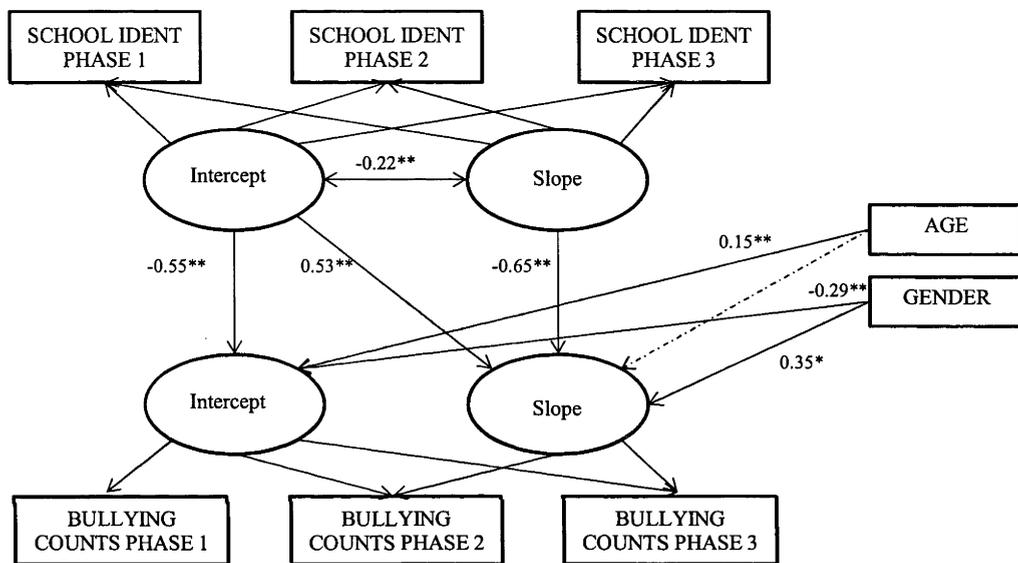


Figure 1. Conditional parallel LGMs depicting change in bullying perpetration over time regressed on change in school identification over time. Coefficients are standardized; * $p < .05$; ** $p < .01$; Male students coded as 1 and female students coded as 2; School Ident: School identification; for all figures error terms and their intercorrelations have been omitted for simplicity.

Predicting Change in Bullying Perpetration

Table 1 presents the results for change in bullying perpetration over three phases regressed on change in the predictor variables. At phase 1, as described by the bullying

⁴ In all conditional parallel LGMs, the covariance between the outcome variable slopes and the predictor growth factors were fixed at zero to improve the model testing. This process means that the prediction errors of the outcome variable slopes were not modeled due to estimation convergence issues (Muthén & Muthén, 2010).

intercept β s, age and gender showed significant effects for all the models suggesting that older students and males were more likely to be involved in bullying. The baseline level of anxiety and depression positively predicted bullying others at phase 1. Meanwhile both academic and group support and school identification negatively predicted bullying perpetration at baseline.

Table 1
Selected Significant Standardized Coefficients of Negative Binomial Conditional Parallel LGMs of Bullying Perpetration in the Last 7 Days Regressed on Change in Predictors

Predictors	Predictor Growth Factors	Bullying Growth Factors	β	Log Likelihood (LL)/ Δ LL
Mental Health				
Anxiety	Intercept	Intercept	0.45**	-6306.74a
	Slope	Slope	0.68**	52.15** b
Age		Intercept	0.16**	
	Gender		Intercept	-0.38**
			Slope	0.45*
Depression	Intercept	Slope	0.41**	-6619.96a
		Slope	-0.46*	50.32**b
	Slope	Slope	0.62**	
Age		Intercept	0.16**	
	Gender		Intercept	-0.39**
			Slope	0.39*
School Climate				
Group Support	Intercept	Intercept	-0.47**	-6637.72a
	Slope	Slope	-0.76**	70.86**b
Age		Intercept	0.19**	
	Gender		Intercept	-0.33**
			Slope	0.38*
Academic Support	Intercept	Intercept	-0.57**	-6705.91a
	Slope	Slope	-0.84**	142.84**b
Age		Intercept	0.16**	
	Gender		Intercept	-0.30**
			Slope	0.26*
Identification				
School Identification	Intercept	Intercept	-0.55**	-6655.27a
		Slope	0.53**	109.77**b
	Slope	Slope	-0.65**	
Age		Intercept	0.15**	
	Gender		Intercept	-0.29**
			Slope	0.35*

Note. Non-significant coefficient paths have been omitted; Male students coded as 1 and female students coded as 2; a: *Log Likelihood* ; b: Δ *Log likelihood (LL): chi-square test of the Log likelihood difference.*

* $p < .05$. ** $p < .01$.

The results most relevant to our hypotheses concern the relationship between the predictor slope and change in the slope of the outcome variable across time as described

by the bullying slope β s. The results support hypotheses showing that the coefficients from the slopes of anxiety or depression to the slope of bullying perpetration was significant and positive, indicating that negative well-being predicted an increase in bullying perpetration over time. In addition, the coefficients from the slopes of both school climate factors to the slope of bullying perpetration was significantly negative demonstrating that, over time, positive perceptions of school climate reduced rates of bullying perpetration. Likewise, the coefficient from the slope of school identification to the slope of bullying perpetration was significant and negative. This indicates that an increase in school identification, over time, predicted reduced bullying perpetration over time.

Predicting Change in Peer Victimization

Table 2 provides the results of all five negative binomial conditional parallel LGMs for victimization over three phases. As described by the victimization intercept β s, at phase 1 for all models, gender predicted the baseline victimization level but age did not, with males being more likely to be victimized. Both anxiety and depression demonstrated a significant positive association with victimization at the baseline (see Figure 2). Further, positive perception of both school climate factors and school identification predicted less peer victimization at phase 1.

Looking at change across time again there is support for the hypotheses, as described by the victimization slope β s. The coefficients from the slopes of anxiety or depression to the slope of peer victimization was significant and positive, indicating that negative well-being predicted an increase in rates of peer victimization over time. Moreover, the coefficients from the slopes of academic support, group support, and school identification to the slope of peer victimization were significant and negative,

indicating that a positive increase in perceptions of these factors, over time, predicted reduced victimization over time.

Table 2

Selected Significant Standardized Coefficients of Negative Binomial Conditional Parallel LGMs of Peer Victimization in the Last 7 Days Regressed on Change in Predictors

Predictors	Predictor Growth Factors	Victimization Growth Factors	β	Log Likelihood (LL)/ Δ LL
Mental Health				
Anxiety	Intercept	Intercept	0.66**	-6191.65 _a
		Slope	-0.38*	120.60** _b
	Slope	Slope	0.77**	
Gender	Intercept	Intercept	-0.32**	
		Slope	-0.40**	113.96** _b
Depression	Intercept	Intercept	0.66**	-6509.72 _a
		Slope	-0.40**	113.96** _b
	Slope	Slope	0.76**	
		Intercept	-0.34**	
School Climate				
Group Support	Intercept	Intercept	-0.58**	-6529.22 _a
		Slope	-0.94**	118.81** _b
	Slope	Slope	-0.27**	
Gender	Intercept	Intercept	-0.27**	
		Slope	-0.46**	-6635.12 _a
Academic Support	Intercept	Intercept	-0.46**	-6635.12 _a
		Slope	-1.06**	92.36** _b
	Slope	Slope	-1.06**	92.36** _b
		Intercept	-0.28**	
Identification				
School Identification	Intercept	Intercept	-0.38**	-6585.76 _a
		Slope	-0.91**	67.33** _b
	Slope	Slope	-0.91**	67.33** _b
		Intercept	-0.27**	

Note. Non-significant coefficient paths have been omitted; Male students coded as 1 and female students coded as 2; a: *Log Likelihood* ; b: Δ *Log likelihood (LL): chi-square test of the Log likelihood difference.*

* $p < .05$. ** $p < .01$.

Comparison of Effects of the Predictors

These results support the hypotheses for both the outcome variables of bullying perpetration and peer victimization. When looking at the strength of the standardized estimated coefficients it appears the two school climate sub-factors were the strongest predictors of change in bullying behaviour, with the slope of academic support demonstrating the strongest prediction of change in bullying and victimization. The slopes of school identification, anxiety, and depression appeared to be of comparable importance in predicting change in bullying perpetration over time.

For victimization, results suggest that an increase in school identification appeared to be of comparable importance to both school climate sub-factors in predicting change in peer victimization over time. These social psychological factors were stronger predictors than the slopes of the individual well-being (depression and anxiety) factors.

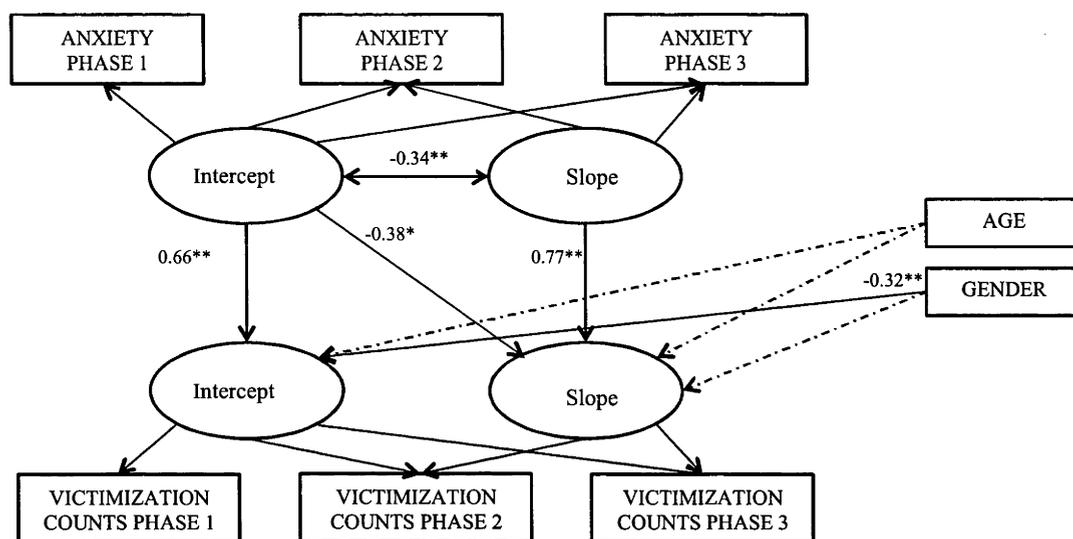


Figure 2. Conditional parallel LGM of change in peer victimization over time regressed on change in anxiety over time. Coefficients are standardized; Male students coded as 1 and female students coded as 2; * $p < .05$; ** $p < .01$.

Discussion

Using a longitudinal three-phase student sample this study aimed to investigate the influence of a number of individual-psychological and social-psychological variables in predicting change (increase or decrease) in bullying behaviour over time. Of particular interest was the inclusion of different sub-factors of school climate – academic support and group support – as well as a measure of school social identification that assesses one’s psychological investment in the school. This research also aimed to provide conceptual clarity regarding the distinction between school climate and school identification using the social identity framework.

Support was found for each of the study hypotheses. Change in depression and anxiety did positively predict change rates in bullying behaviour over time, so that an increase in internalizing problems predicted an increase in rates of bully perpetration and peer victimization over time. These results support the idea that well-being may be one potential precursor to involvement in bullying behaviour (Espelage et al., 2001). Given other longitudinal work which demonstrates the potentially detrimental long-term adult mental health outcomes associated with bullying and victimization during adolescents (Haavisto et al., 2004; Kumpulainen & Räsänen, 2000), the provision of programs to promote psychological well-being and reduce school-based bullying is important.

It was also expected and found that positive change in perceptions of the two school climate factors (academic support and group support) was related to decreased rates of bullying perpetration over time. The same relationships held for peer victimization, so that an increase in perceptions of support over time predicted a decrease in victimization over time. Interestingly, both school climate factors were of comparable importance for bullies and their victims, suggesting that interventions aimed at fostering a positive school climate need to promote meaningful academic engagement (Hemphill et al., 2012) and focus on the social-emotional aspects of the school such as perceived respect from teachers (Gendron et al., 2011).

In line with predictions based on social identity and self-categorization theories, it was found that an increase in school identification over time was significantly related to a decreased rate of both bullying perpetration and peer victimization over time. Empirical support for the positive role of school identification in understanding bullying behaviour predominantly comes from cross-sectional and experimental studies (Bizumic et al., 2009; Duffy & Nesdale, 2009; Jones et al., 2008). In this longitudinal

analysis, identification with the school was of similar importance to the school climate factors and it was a stronger predictor of change in peer victimization when compared to internalizing symptoms (anxiety and depression). These results concerning school identification provide support for the translation of the social identity framework to schools (Reynolds et al., 2007) and suggest that individual bullying behaviour is also related to the extent that students feel a psychological connection with the school and its members.

These findings support the idea of addressing bullying and victimization through programs that serve to clarify the norms of the school community with respect to bullying and build a psychological connection to the community. In the current research program between phase 1 and completion of subsequent surveys, specific interventions (based on the Ascertaining Social Personal Identity Resources or ASPIRe model; Haslam, Egging, & Reynolds, 2003) were designed and implemented to strengthen positive school climate and school identification amongst school members. One common intervention across the four target schools between Phase 1 and subsequent phases involved use of the ASPIRe process to clarify and consensualize the defining features of the school community – who ‘we’ are and what ‘we’ do as a school. In order to build consensus and shared understanding of “us” as members of the school; staff, students, parents and community members (as subgroups) were involved in a process where the vision, purpose, and ideal behaviours for staff and students and the key characteristics students should develop while at the school (know-how, knowledge, character) and within a particular school were identified. Once collated, each group was invited back to provide feedback on which of the beliefs, behaviours, and characteristics should be prioritized. The feedback was integrated into a mission statement that defined common purpose and behavioural expectations.

A whole range of school activities and functions were reformed in line with the shared mission (e.g., professional development, codifying shared practices, celebration of achievements, and championing individuals who exemplify the school's mission). The process ensures procedural fairness and voice amongst meaningful sub-groups that make up school life, increases ownership of decisions and ensures all members of the school community feel respected and valued (e.g. Tyler & Blader, 2000). It is also possible to connect the values and beliefs that define the school to a school-wide positive behavioural support program (SWPBIS) which is particularly focused on establishing a new positive behaviour reinforcement system (e.g., 'Caught in the act' where staff issued slips when students are observed acting in line with the school mission; Luiselli, Putnam, & Handler, 2005). SWPBIS also often incorporates data gathering on challenging behaviour so that students and the contexts where the behaviour occurs can be closely monitored and specific interventions developed. Bradshaw, Waasdorp, and Leaf (2012), in a rare example of experimental work in schools, compared schools trained in SWPBIS to those without and concluded a significant impact on behaviour problems, social-emotional functioning, and pro-social behaviour in schools.

Limitations and Future Directions

The attrition analysis concerning our current sample suggested that there may have been a sampling bias towards students who were less likely to be involved in challenging behaviours and more likely to have positive perceptions of school climate, school identification, and individual well-being. Therefore the current findings may not be applicable to those students who exhibit more extreme problem behaviours. Relying on attendance at school on a given day as the basis for data collection, especially in a longitudinal design, means it is more likely those students with lower attendance rates

will be missed. To the degree low attendance is related to other variables of interest (e.g., engagement, school climate, achievement, bullying, depression) then the sample risks not being representative of the student population as a whole. Other methods of data collection may be needed to examine students with low attendance such as conducting focus groups.

With a larger sample involving students from more schools it would have been possible to conduct multi-level modelling which can address the nested nature of the design where there is the possibility that students within one school may be more similar and dependent on each other than students from another school. However, the number of participating schools is only four which is insufficient for multi-level analysis and the cluster option for complex survey data analysis (Asparouhov & Muthén, 2005; Muthén & Satorra, 1995; Stapleton, 2006). The current uni-level modeling of the nested student data means the findings should be interpreted with caution. It is possible that the dependency in the data has heightened the risk of making a Type I error (rejecting the null hypothesis when it is true; Thomas & Heck, 2001). A larger sample would have also been beneficial because all the predictor variables could be included in the same LGMs to account for shared variance between the variables. These issues represent opportunities for further research.

The focus in the current research was on school-based bullying behaviour as the outcome variable of interest. It is also possible that bully perpetration and experiences of peer victimization over time are related to changes in well-being, perceptions of a positive school climate and school identification. Indeed these relationships may form a reciprocal cycle (Hodges & Perry, 1999). In an attempt to shed light on the likely causal directions of these relationships supplementary analyses were conducted reversing the variable order. For changes in bullying perpetration there was no evidence to support

reciprocal relationships. With respect to victimization, though, change in victimization across time appeared to affect change in anxiety ($\beta = .83, p < .01$), depression ($\beta = .89, p < .05$), and group support ($\beta = -0.83, p < .01$).

These reciprocal relationships between victimization and well-being are consistent with Hodges and Perry's (1999) notion that victims fall into a "vicious cycle". With respect to school climate, there is little longitudinal work that can be used to make sense of these relationships. However one study suggested that these relationships are complex, finding that students with emotional and behavioural problems do not simply evaluate school climate in a more negative way (Kuperminc, Leadbeater, & Blatt, 2001). Nonetheless, this research demonstrates several potentially important variables in understanding change in bullying behaviour over time, and future research should continue to work from an approach that aims to understand the complex relationship between individual-psychological and social-psychological variables in impacting on incidences of school-based bullying.

In this research the focus has been on verbal and physical bullying behaviour but other forms of bullying also exist. Some research suggests that relational bullying may have the most detrimental long-term psychological consequences (particularly for females), and cyber bullying is also topical (Berger, 2007). However these forms of bullying were not assessed in the current research project. Similarly, bully-victims (students who are both the perpetrators and victims of bullying) have been defined as a significantly smaller but distinct group of at-risk youths (Menesini et al., 2009). A specific focus on bully-victims was not possible due to the sample size. Future research would benefit from addressing additional forms of bullying behaviour and bully-victims.

With respect to the development of anxiety and depression, these results indicate

that there may also be a case that mental health support should move from being more external to the school (external professionals and resources) to being internal.

Addressing bullying and victimization quickly and efficiently may benefit from a three-pronged approach through the integration of mental health services and interventions to strengthen school climate and school identification.

Conclusions

This research answers calls for longitudinal research in understanding bullying perpetration and peer victimization. Across three measurement phases there is evidence that many of the key constructs observed in previous research – well-being (depression, anxiety), school climate (academic support, group support) and psychological connection to school life – are related to change in bullying and victimization. In terms of relative importance it was found that school climate and school identification factors often are more strongly related to change than well-being measures. Such findings serve to focus attention on the school environment as an important site for analysis and intervention. The social identity framework helps explain why this is the case. Working effectively on what defines “us” with regard to respectful and caring relationships will affect what ‘we’ do.

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Online Supplementary Material

Online supplementary Table 1
Correlations with Bullying Perpetration and Peer Victimization Counts for all Study Measures

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
Phase One																										
1. BUL01	9.15	10.95	1																							
2. VIC01	9.64	11.81	.53**	1																						
3. Agg01	13.01	0.95	.10*	-0.07	1																					
4. Gender01	1.46 ^a	0.49	-0.29**	-0.23**	-0.09	1																				
5. ANX01	2.16	0.78	.21**	.27**	0.02	-0.01	1																			
6. DEP01	2.02	0.95	.21**	.26**	0.03	0.02	.76**	1																		
7. AS01	4.61	1.18	-.33**	-.28**	-0.05	.12**	-.25**	-.21**	1																	
8. GS01	4.19	1.12	-.24**	-.36**	0.01	.13**	-.21**	-.25**	.67**	1																
9. SID01	4.76	1.15	-.29**	-.18**	-.10*	.15**	-.22**	-.19**	.58**	.47**	1															
Phase Two																										
10. BUL02	9.62	10.84	.59**	.33**	0.08	-.22**	.24**	.19**	-.25**	-.18**	-.23**	1														
11. VIC02	8.83	11.79	.42**	.53**	-0.02	-.21**	.27**	.23**	-.24**	-.23**	-.14**	.65**	1													
12. ANX02	2.19	0.85	.12**	.33**	-0.08	0.05	.37**	.35**	-.18**	-.25**	-.13**	.21**	.38**	1												
13. DEP02	2.13	1.05	.10*	.29**	-0.06	0.08	.32**	.38**	-.17**	-.27**	-.11*	.16**	.35**	.77**	1											
14. AS02	4.6	1.15	-.29**	-.22**	0.01	.11*	-.13**	-.10*	.52**	.41**	.40**	-.35**	-.32**	-.31**	-.30**	1										
15. GS02	4.33	1.07	-.21**	-.30**	.10*	0.02	-.19**	-.21**	.39**	.51**	.33**	-.26**	-.33**	-.40**	-.40**	.65**	1									
16. SID02	4.73	1.11	-.23**	-.17**	0.03	.15**	-.14**	-.16**	.41**	.36**	.47**	-.35**	-.27**	-.21**	-.21**	.58**	.54**	1								
Phase Three																										
17. BUL03	9.51	10.41	.35**	.21**	.11*	-.19**	.15**	0.07	-.14**	-.13**	-.13**	.41**	.23**	.10*	0.04	-.13**	-.09*	-.14**	1							
18. VIC03	8.22	10.81	.28**	.37**	0.08	-.17**	.13**	.12**	-.15**	-.16**	-.18**	.28**	.37**	.23**	.18**	-.16**	-.18**	-.16**	.56**	1						
19. ANX03	2.27	0.86	0.01	.14**	0.01	.10*	.24**	.24**	-.13**	-.16**	-.10*	0.07	.21**	.43**	.42**	-.17**	-.23**	-.19**	.13**	.25**	1					
20. DEP03	2.27	1.09	0.01	.11*	0.01	.15**	.16**	.26**	-.11*	-.11*	-0.07	0.07	.16**	.34**	.42**	-.13**	-.19**	-.15**	.09*	.24**	.77**	1				
21. AS03	4.65	1.12	-.22**	-.16**	0.01	.11*	-.12**	-0.07	.33**	.27**	.30**	-.24**	-.26**	-.15**	.47**	.36**	.36**	.32**	-.28**	-.36**	-.24**	.1				
22. GS03	4.46	1.04	-.17**	-.20**	0.07	0.05	-.13**	-.12**	.31**	.34**	.28**	-.20**	-.26**	-.21**	-.19**	.36**	.46**	.38**	-.26**	-.25**	-.34**	-.25**	.68**	1		
23. SID03	4.83	1.11	-.24**	-.17**	-0.01	.21**	-.10*	-0.07	.33**	.29**	.39**	-.27**	-.28**	-.14**	.47**	.36**	.59**	.29**	-.28**	-.30**	-.19**	.64**	.57**	1		

Note. N = 492. BUL: Bullying counts; VIC: Victimization counts; ANX: Anxiety; DEP: Depression; AS: Academic support; GS: Group support; SID: School identification; 01: Phase 1; 02: Phase 2; 03: Phase 3; a: Male students coded as 1 and female students coded as 2.
* p < .05. ** p < .01 (2-tailed).

Online supplementary Table 2

Standardized Coefficients of Negative Binomial Unconditional LGMs of Change in Study Variables Over Three Phases

Study Variables	Growth Factors	Coefficients	Variance	Log Likelihood/ ΔLL /Model fit χ^2
Bullying Behavior				
Bullying Perpetration	Intercept	1.62**	1.61**	-4679.68a
	Slope	0.18**	0.11*	15125.12**b
Peer Victimization	Intercept	1.69**	1.50**	-4579.22a
	Slope	0.03	0.09	15624.09**b
Mental Health				
Anxiety	Intercept	2.17**	0.39**	χ^2 0.89
	Slope	0.04	0.12**	
Depression	Intercept	2.03**	0.58**	χ^2 0.24
	Slope	0.11**	0.16**	
School Climate				
Group support	Intercept	4.20**	0.86**	χ^2 0.07
	Slope	0.13**	0.15**	
Academic support	Intercept	4.60**	1.01**	χ^2 0.11
	Slope	0.01	0.21**	
Identification				
School identification	Intercept	4.74**	0.71**	χ^2 2.75
	Slope	0.03	0.18**	

Note. a: *Log Likelihood* ; b: Δ *Log likelihood (LL): chi-square test of the Log likelihood difference*; χ^2 : model fit for continuous study variables.

* $p < .05$. ** $p < .01$.

Chapter 3

Understanding Peer Aggression and Victimization: A Mediation Study of School Climate, School Identification and Student Well-Being

Background to Study Two

The first study of this dissertation supported the inclusion of both individual well-being variables and school social environment variables in creating interventions to reduce school-based bullying over time. Additionally, comparison of the strengths of the effects also placed school identification as an important construct in understanding bullying behaviours longitudinally. Emerging research looking at other student outcomes has suggested that students' psychological connection to the school (and the social identity perspective) may explain how the school climate comes to influence individual behaviour (Bizumic et al., 2009; Reynolds et al., 2015; Wilson, 2004). In other words, the school climate may be fundamental in advocating how students should treat each other, while students' sense of identification with their school may be crucial for students to make meaningful changes to their behaviour.

With this in mind, the second study had a particular focus on advancing our understanding of the distinct and critical role of students' psychological connection to the school. This study aimed to answer calls for research that explores the mechanisms or processes through which the school environment comes to influence school bullying behaviours (Wilson, 2004) using the social identity perspective. This was done by assessing whether students' sense of identification with the school mediated the relationship between the supportive school climate factors (group support and academic support) and bullying behaviours, while accounting for individual well-being.

This study is currently in submission to a peer-reviewed journal. For thoroughness, the submitted paper is presented here in full. The introduction of the paper reiterates key points presented in the introduction of the dissertation (Chapter 1). The reference for this paper is: Turner, I., Reynolds, K. J., Lee, E., Subasic, E., & Bromhead, D. (2015). *Understanding peer aggression and victimization: A mediation*

study of school climate, school identification and student well-being. Manuscript submitted for publication⁵.

⁵ Because the measure of bullying behaviour used in the current research program does not measure the perception of a power imbalance between peers reviewers requested the use of the terminology 'peer aggression' for acceptance of this paper for publication.

Abstract

The current study examines how the supportive climate of a school (group support and academic support) and student well-being impact on school-based aggression. School identification (i.e. a person's self definition as a school member) is investigated as one mechanism that explains how the supportive climate of a school may come to affect peer aggression and victimization using a mediation analysis. Using Structural Equation Modelling (grades 7 – 10 Australian students, N =1809) the results showed that school identification negatively predicted peer aggression and partially mediated the impact of group support (but not academic support) on peer aggression when well-being, age, gender, and years at the school were controlled. For the well-being predictors, when both depression and anxiety were included in the model with the supportive climate factor the latter was the strongest predictor of peer aggression. Examined separately, though, depression or anxiety were also strong predictors of peer aggression. Reversing the model direction, there was also evidence that peer aggression significantly explained student well-being as an outcome. Such findings suggest possible reciprocal causal relationships between well-being and peer aggression. The current empirical findings suggest that in addressing school-based aggression, building and strengthening a supportive climate and school identification will be fruitful.

Introduction

Attempts to understand school-based aggression and bullying behaviour have increased significantly over the last decade. This surge in interest is coupled with evidence of the potentially detrimental relationship between involvement in peer-based aggression and poor well-being (Fekkes, Pijpers, & Verloove-Vanhorick, 2005; Menesini, Modena, & Tani, 2009; Reijntjes, Kamphuis, Prinzie, & Telch, 2010; Roland, 2002a; Ttofi & Farrington, 2012). This evidence of harm has focused attention on policies and programs that enhance the emotional and physical safety of schools (Kasen, Berenson, Cohen, & Johnson, 2004; Ma, 2002). Much of this work investigates the overarching climate of the school but there are indications that particular components of a supportive school climate (emotional (group) support, academic support) may impact students involved in peer aggression and victimization in different ways (Harel-Fisch et al., 2011; Hemphill et al., 2012).

Concurrently, a somewhat separate area of literature has sought to describe the psychological mechanisms that help explain how it is that the climate of the school has these impacts on student behaviour. Experimental and field studies based on a social psychological perspective, that incorporates social identity theory (Tajfel & Turner, 1979) and self-categorization theory (Turner, Hogg, Oakes, Reicher & Wetherell, 1987), have demonstrated the significant role of students' sense of psychological connection (i.e. self definition as a school member) with the school (Bizumic, Reynolds, Turner, Bromhead, & Subasic, 2009; Duffy & Nesdale, 2009; Ojala & Nesdale, 2004). In fact a range of constructs that are widely researched in the educational literature such as school connectedness, school belonging, student engagement and school climate may take on new meaning when understood through the lens of group psychology and social identity processes.

The current research makes a novel and important contribution through examining a number of key factors that explain variance in peer aggression and victimization including school climate, school identification and well-being. In addition, though, the role of school identification as a mediator in models that incorporate the other central predictors is also investigated. It is important to recognise that these models are theoretically grounded in an analysis of group psychology and are informed by previous cross-sectional and longitudinal research (Bizumic et al., 2009; Turner et al., 2014).

At the outset, it is also useful to consider definition and measurement of peer aggression and bullying. The word bullying is widely used to describe a multifaceted form of peer aggression. The World Health Organization (2002), for example, recognizes bullying behaviour as the intentional and repeated use of physical or emotional force or power (threatened or actual) by an individual or group which results in or has a high likelihood of resulting in injury or harm towards one or more persons. Despite growing consensus regarding the definition of bullying, there remains debate among scholars as to whether all the elements of bullying (e.g. aggressive behaviour, repetition, perception of a power imbalance) need to be assessed in order to define an incident as bullying (Hamburger et al., 2011; Vessey, Strout, DiFazio, & Walker, 2014).

Indeed, the measurement of bullying has been conceptualized and operationalized in many ways (Espelage & Swearer, 2003; Smorti, Menesini, & Smith, 2003). Given that the measures used in this study clearly capture the frequency or severity of specific physical and verbal behaviours experienced during episodes of bullying (including name-calling, threats, and hitting, punching or kicking; Orpinas & Frankowski, 2001), but do not assess other elements of bullying such as the perception of a power imbalance, the terms peer aggression and peer victimization are used. In the sections

below relevant theory and research concerning this and other key constructs are outlined in more detail.

Well-Being and School-Based Aggression

Research conducted across diverse populations has consistently found a concurrent association between internalizing problems and involvement in school-based aggression and bullying. Students involved in school-based bullying and aggression experience elevated rates of depression and anxiety compared with students not involved in bullying (Carney & Merrell, 2001; Klomek, Marrocco, Kleinman, Schonfeld, & Gould, 2007; Menesini et al., 2009; Roland, 2002a, 2002b; Salmon, James, & Smith, 1998). Many studies have looked at bullying behaviours as a predictor of student well-being, and have shown that involvement in bullying perpetration and peer victimization uniquely contributes to internalizing problems (Ttofi & Farrington, 2012).

Researchers have also examined poor well-being as a predictor of involvement in bullying behaviours (Espelage, Bosworth and Simon, 2001; Fekkes, et al., 2005 Turner et al., 2014). One study found that while peer victimization also predicted negative well-being, there was no evidence of a reciprocal relationship for bullying perpetration over three years (Turner et al., 2014). In light of these two lines of research it has been suggested that student well-being and peer victimization form a reciprocal relationship (Hodges & Perry, 1999; Reijntjes et al., 2010).

This literature provides support for the proposition that peer bullying and aggression is of mental health significance. But there has been a tendency to focus solely on individual psychological factors despite research which demonstrates the role of the school in understanding bullying behaviours (Berger, 2007; Ma, 2002).

Researchers have argued that understanding factors that can predict and therefore

impact on school-based aggression requires an examination of both the individual and the environment (Hong & Espelage, 2012). Yet there remain very few research examples that consider both individual well-being and the school social environment. So while individual well-being factors have been shown to be important in understanding school-based bullying and aggression, often other explanatory factors are not examined in the same research design.

School Social Environment and School-Based Aggression

Current school climate literature generally aims to measure many facets of the school environment, incorporating perceptions of the procedural, disciplinary and interpersonal dimensions of the school (such as the nature of interactions between staff and students, the perceived fairness and consistency of discipline, and an environment that fosters and emphasizes learning) into a general construct of school climate. These factors have been shown to be negatively associated with bullying and peer aggression (Bibou-Nakou, Tsiantis, Assimopoulos, Chatzilambou, & Giannakopoulou, 2012; Kasen et al., 2004; Lee & Song, 2012). While informative, this research does not address whether specific elements of a supportive school climate should be the focus of intervention with respect to those students involved in peer aggression and victimization. Indeed, some cross-sectional research that has focused on specific factors of the school environment has suggested that the social-emotional aspects of the school such as student-teacher relationships may be particularly important in shifting involvement in bullying behaviour (Gendron, Williams, & Guerra, 2011; Harel-Fisch et al., 2011). Other cross-sectional and longitudinal designs have suggested that the provision of additional academic support may be particularly helpful to reduce incidence of bullying perpetration (Hemphill et al., 2012; Ma, 2002; Reis, Trockel, & Mulhall, 2007).

Recently, a longitudinal study measured two sub-factors of a supportive school climate (termed academic support and group support) and found that both sub-factors were of comparable importance in reducing bullying perpetration and peer victimization over time (Turner et al., 2014). However, there was no evidence that the reverse was true. Involvement in bullying perpetration over time did not predict perceptions of school climate or school identification. These findings suggest that these factors were better understood as predictors rather than outcomes of bullying. It is on this basis that in the current research these variables are included as predictors. While these findings demonstrate the importance of the school environment, it remains unclear whether interventions aimed at particular aspects of the school should be the target for students involved in peer aggression as opposed to peer victimization.

Within the school social environment literature there is also growing research interest in students' sense of connection or belonging with the school. A sense of connectedness at school can reduce the risk of negative outcomes including school-based aggression and risk-taking behaviour, and facilitate improvements in academic performance (Wingspread declaration on school connections, 2004). Defined as students' belief that "adults in the school care about their learning as well as them as individuals" (Wingspread declaration on school connections, 2004, p. 233), this construct is seen to capture the psychological experience of the individual within their school.

There is confusion, however, about the school connectedness construct itself and whether it should be viewed, for example, as a component of school climate (Libbey, 2004). While most researchers with an interest in this construct (and using terms such as connectedness, belonging, bonding and engagement synonymously) have focused solely on the relationship between school connectedness and student outcomes (Bosworth,

Espelage, & Simon, 1999; Cunningham, 2007; Eisenberg, Neumark-Sztainer, & Perry, 2003; Espelage et al., 2001; O'Brennan & Furlong, 2010; You et al., 2008), some studies have attempted to include a sub-factor or a single item to assess student connectedness within their general measure of school climate (Giovazolias, Kourkoutas, Mitsopoulou, & Georgiadi, 2010; Harel-Fisch et al., 2011).

But there are a number of studies now that indicate that school climate and school connectedness are distinct constructs (Loukas, Suzuki, & Horton, 2006). For example, Wilson (2004) showed that school connectedness consistently contributed to the decreased likelihood of involvement in bullying and victimization, despite fluctuations in the climate of the school. Wilson (2004) concluded that additional research was needed to understand the mechanisms or processes through which these school environment variables operate in order to advance our efforts to reduce school problem behaviours.

There is also confusion about whether school connectedness is actually an individual psychological experience or whether this construct should be conceptualized as a social psychological phenomenon. Along these lines, it has been suggested that effective strategies for increasing student connectedness include approaches that foster positive peer groups and peer norms (Blum, 2005; Wingspread declaration on school connections, 2004). If school connectedness is affected by group relations and group norms, then the psychology of being a group member may be particularly important. Along these lines, recently social psychologists have argued that while the school climate may capture perceptions of school functioning, students' self definition as a group member within the school may be a potentially critical psychological process involved in transforming these perceptions in ways that impact on individual attitudes and behaviours (Bizumic et al., 2009; Reynolds et al., 2015; Turner et al., 2014). In the

next section a social psychological perspective relevant to group psychology and group processes and its relevance for school-based aggression is outlined in more detail.

How Does School Climate Impact on School-Based Aggression?

According to the social identity perspective, which incorporates both social identity theory (SIT; Tajfel & Turner, 1979) and self-categorization theory (SCT; Turner et al., 1987), individuals' perceptions of themselves and others are based on abstract social categories, which are then internalized to form part of the self-concept (Turner & Oakes, 1989). One's social identity, then, is the knowledge that one belongs to a particular social group (e.g. a member of the school), and that the group membership has value and meaning for the individual (Tajfel, 1972). When individuals categorize themselves as belonging to a particular social group (i.e. male, high school student), they come to see other ingroup members as part of the self ("we" rather than "I") and the norms, values and beliefs that define the group are internalized and influence the attitudes and behaviour of individual group members (Turner & Oakes, 1989).

A handful of experimental studies have demonstrated the relevance of meaningful categorization as a group member to peer aggression and bullying behaviour (Gini, 2006; Jones, Haslam, York, & Ryan, 2008; Ojala & Nesdale, 2004). For example, Duffy and Nesdale (2009) found that in groups with a norm supporting bullying, rates of bullying increased as the degree of identification with the group increased. Conversely, Jones et al. (2008) found that when groups held an anti-bullying norm, higher ingroup identification was associated with a significantly less favourable view of the bully and a belief that the member who bullied should be disciplined because their behaviour threatened the group norms and shared social identity.

These experimental studies highlight the relevance of the self-categorization process as a group member to understanding school-based aggression and bullying. Meaningful identification with a group can influence cognition, affect, and behaviour previously thought of as under the control of the individual—prescribing appropriate social behaviour for the individual within the school (Bizumic et al., 2009; Turner & Reynolds, 2012). That is, while the school climate may define the internal characteristics of the school, students' sense of identification (connectedness to the school as a group member) with the school may be a potentially critical psychological process that explains how the school climate comes to influence individual behaviours.

When students feel a sense of identification (connectedness or belonging) with their school, they are motivated to behave in accordance with the norms, values, and attitudes of other school members to protect their sense of shared social identity. However, if students do not feel a sense of connection or bond with the school, interventions aimed at fostering a positive or supportive school climate that, say, opposes peer aggression may be unsuccessful. The term school identification, then, relates to a psychological connection to the school as a community or group and is a process through which the group can impact on individual group members. The social identity perspective provides a possible process through which perceived school functioning comes to influence individual students' attitudes and behaviours. It points to investigating the mediating role of social identification with the school in understanding the relationship between school climate and individual physical and verbal peer aggression.

The Current Study

It is the case that individual well-being and school social environment factors are rarely investigated in the one research design, reducing knowledge about their

respective roles in peer-aggression. The current study overcomes this issue. It focuses on well-being as well as school factors, including a supportive school climate and students sense of identification with their school, as precursors to peer aggression and victimization. Importantly, in addition, though, the present research explores school-based aggression by investigating whether students' sense of identification with the school mediates the relationship between two factors of a supportive school climate (academic support and group support) and student reported prevalence of physical and verbal peer aggression and victimization. These relationships are considered in a study that also measures individual well-being (depression and anxiety, see Figure 1). The demographic factors of age, gender, and years at school were also controlled for in the current study based on previous findings (Batsche & Knoff, 1994; Dake, Price, & Telljohann, 2003; Eslea & Rees, 2001; Forero, McLellan, Rissel, & Bauman, 1999; Pellegrini & Long, 2002).

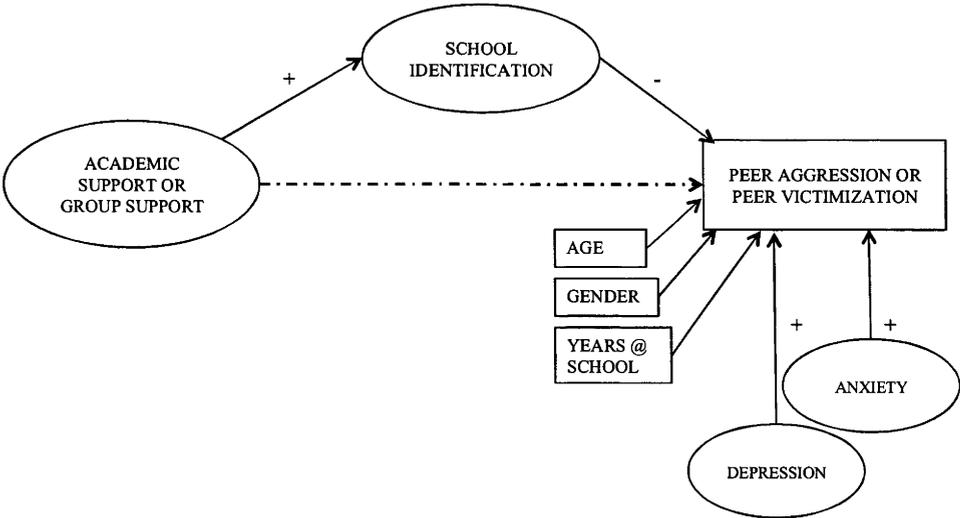


Figure 1. Theoretical mediation model depicting hypothesized relationships between well-being, school climate, school identification, and school-based aggression (peer aggression/peer victimization). + : significant positive relationship hypothesized; - : significant negative relationship hypothesized; broken line: indicates non significant relationship due to complete mediation by school identification.

Based on extant cross-sectional and longitudinal research and the social identity perspective it was expected that:

- 1) School identification (e.g. self definition as a school group member) would mediate the relationship between the supportive school climate factors and school-based aggression, such that positive perceptions of school climate and a sense of identification with the school would negatively predict peer aggression and victimization.
- 2) The individual well-being factors were expected to remain significant positive predictors of school-based aggression having accounted for the supportive school climate factors and school identification in the model.

Additionally, based on increasing evidence of a reciprocal relationship between student well-being and school-based aggression the model direction was also reversed in a supplementary analysis, such that well-being was explored as an outcome of peer aggression.

Method

The data presented in this study was collected as part of the *Understanding the school as an intergroup system: Implications for school reform and improving student and staff outcomes* project (Reynolds, Bizumic, Subasic, Melsom, & McGregor, 2007). Responses to the survey in 2009 were analysed.

Participants

The participants in this study were 1809 students in grades 7 to 10 from four Australian schools. It was a convenience sample comprised of students from schools that volunteered to participate in the project from a school district with a general population of approximately 350,000. School size (N ranged from 205 to 783 students in year 7 -10) and socio-economic status (SES) of this sample roughly covered the

range of school distributions in the district. SES ranged from 996 to 1121 for the Australian Index of Community Socio-Educational Advantage (ICSEA, standardized with a 1,000 mean with a 100 standardized deviation; Australian Bureau of Statistics (ABS), 2009). Language spoken at home other than English⁶ ranged from 17% to 28% for these schools while the overall Australian mean percentage is 18.1% (ABS, 2013).

The mean age of students in the sample was 13.76 (SD = 1.26) and the range was from 11 to 17 years old. A very slight majority of students reported their gender as male (N = 896; 49.5%). 41 students (2.3%) did not report their gender and were therefore excluded from the analyses. The time students had spent at their school ranged from 1 to 5 years and the mean number of years at school was 2.39 (SD = 0.97).

Material and Procedure

All present students on the survey day were invited to complete the survey, with 95% of the 1912 students enrolled at the four schools participating. They provided written informed consent to participate in the research and to complete a survey booklet during scheduled class time.⁷ Construct validity of the measures was examined with measurement models in the main analysis using Structural Equation Modelling (SEM) except for the count variables of peer aggression and victimization. All the relevant measures from the questionnaire are outlined below:

Physical and Verbal Peer Aggression and Peer Victimization. Orpinas and Frankowski's (2001) 9-item aggression scale ($\alpha = .89$) and a 10-item victimization scale ($\alpha = .90$) was used to assess the frequency of core physical and verbal aggressive behaviours involved in school-based aggression. Both the aggression and victimization

⁶ Language spoken at home other than English is the standard description of ethnic diversity in Australia. Higher order categories such as Hispanic or African American are neither used nor applicable in Australia due to the highly multicultural nature of Australian society. Other languages does provide information about the diversity of the sample

⁷ Given the low risk nature of the research and the age of the students the need for parental/guardian consent was waved by the relevant authorities.

scales included a similar number of items to assess physical and verbal acts of aggressive behaviour. The use of these two scales has been widely validated with school children (McMahon & Watts, 2002; Escobar-Chaves, Tortolero, Markham, Kelder, & Kapadia, 2009; Espelage, Holt, & Henkel, 2003). Students responded on a scale from 0 (0 times) to 6 (6 or more times), how many times in the last 7 days they engaged in physical or verbal acts of aggression (e.g. “I pushed or shoved other students”, “I called other students bad names”) and were the targets of physical or verbal aggression (e.g. “A student beat me up”, “A student threatened to hurt me or hit me”). The count responses to the individual items were summed up to form the count measures of peer aggression and peer victimization, respectively.

Depression and Anxiety. Two of the subscales were used from the Australian adolescent version of a 30-item Mental Health Inventory (MHI; Heubeck & Neill, 2000; Veit & Ware, 1983). Participants responded on a scale from 1 (*none of the time*) to 6 (*all the time*) how often during the past month they have felt various feelings. The reliability of the Depression (5 items, $\alpha = .88$; e.g. “Low or had very low spirits”, “Depressed”) and Anxiety (10 items, $\alpha = .85$; e.g. “Anxious, worried”, “Nervous or jumpy”) scales were acceptable.

School Climate. Two sub-scales of a school climate measure (Bizumic et al., 2012) were used; Academic Support (5 items, $\alpha = .86$; e.g. “I believe the school is focused on helping me learn” and “I believe the school sets high standards for work”) and Group Support (6 items, $\alpha = .84$; e.g. “I believe people trust each other at this school” and “I feel that people at this school listen to one another”). Students responded on a scaled from 1 (*disagree strongly*) to 7 (*agree strongly*).

School Identification. A 4-item ($\alpha = .89$) measure of school identification (Reynolds et al., 2015) was included (“Being part of this school is important to me”

and “*I feel a strong sense of connection with this school*”) using a scale from 1 (*disagree strongly*) to 7 (*agree strongly*). Both the school climate and school identification measures have been validated in previous research (Bizumic et al., 2009; Bizumic et al., 2012; Reynolds, Lee Subasic, & Bromhead, 2015; Turner et al., 2014). The measurement models in the main SEMs also provided confirmatory factor analysis (CFA) factor loadings for the school climate and school identification measures.

Analytical Overview

1) Descriptive statistics were examined with SPSS 20 as the first step of the analysis.

2) In order to proceed to the main mediation analysis investigating social identification as a mediating variable, preliminary SEM was employed to examine the relations of the study variables with school-based aggression and school identification. The models examined whether the supportive school climate factors and the well-being factors would significantly explain peer aggression and victimization when school identification was also a simultaneous predictor in the model. That is, only when both the predictor variable and school identification were significant in predicting peer aggression and victimization (i.e. a significant partial correlation), a mediation model would be tested in the main analysis. This strategy is in line with the core purpose and hypotheses of the current research (to investigate mediation of school identification).

3) The main analysis examined the mediating role of school identification in understanding the relationship between the significant factor(s) of a supportive school climate (group support or academic support) and physical and verbal peer aggression or victimization while accounting for the individual well-being factors of anxiety and depression and controlling for three covariates (age, gender, and years at school; see MacKinnon, 2008).

The first mediation analysis included both of the well-being factors in a single SEM (Figure 2) in order to control for comorbidity between these variables. This was then followed by two separate SEMs in which each well-being factor (depression or anxiety) was taken into account separately in the model (Figure 3 and 4). The separate well-being factor models were expected to provide more realistic practical implications for school interventions because while the first model (Figure 2) embraces the statistical comorbidity between these two factors it would only demonstrate a significant effect for students reporting ‘pure’ depression having accounted for ‘pure’ anxiety, or visa versa. The strategy of separate models is in line with the existing literature where most studies have 1) only measured one mental health factor, 2) considered an overall ‘depression and anxiety symptoms’ measure rather than assessing the two separate factors, or 3) measured the impact of each disorder or condition in turn (e.g. Kaltiala-Heino, Rimpelä, Rantanen, & Rimpelä, 2000; Klomek et al., 2001; Roland, 2002a, 2002b; Salmon et al., 1998).

The central outcome variables of interest in this study, peer aggression and victimization, were count variables (i.e. integers arise from counting the frequency of a behaviour rather than ranking it). Count variables are usually modelled assuming the Poisson Distribution with an equal mean and variance (Atkins, Baldwin, Zheng, Gallop, & Neighbors, 2012). However in the current data, school-based aggression demonstrated overdispersion (e.g. greater variances than means). When there is overdispersion in count variables it is recommended that the negative binomial link function be used (negative binomial regression, NBR; Atkins et al., 2012; Cox, West, & Aiken, 2009), which was done for the current analyses.

In a negative binomial model, a change in the predictor variable (X; for example, depression) is multiplicative, not additive, so that “a one-unit increase in X

increases the expected counts of the outcome variable [peer aggression] (Y) by a multiplicative factor of $\exp(\beta)$, which can be interpreted as an incident rate ratio” (Cornell, Gregory, Huang, & Fan, 2012, p.6). The results are presented as standardized SEM negative binomial regression coefficients (β), along with their exponentiated incident rate ratios (IRR) and an interpretation of their effect size (i.e. the percentage of change in peer aggression counts predicted by one standard deviation change in each predictor variable).

A zero-inflated term was also included to account for the large number of students scoring zero counts of school-based aggression. This strategy is recommended practice for count variables with a substantive number of zero responses (Muthén & Muthén, 2010). The inclusion of this term yields a logistic regression for the zeros in the data and NBR for the counts, allowing for interpretation of the differences between those students involved in peer aggression and peer victimization and those students who have not engaged in such behaviours (Atkins et al., 2012). Estimated coefficients for these logistic zero-inflation models were exponentiated to be interpreted as odds ratios (Cohen, Cohen, West, & Aiken, 2013). An odds ratio describes the likelihood of reporting no aggression/victimization (i.e. termed ‘no incidents of peer aggression or peer victimization’ in tables). A standard interpretation of odds ratios applies, such that values above 1 signify an increased likelihood of reporting no incidents of aggression/victimization, given scores on the predictor variables.⁸ In summary, scores pertaining to ‘peer aggression’ or ‘peer victimization’ involve any students who reported one or more incidents of aggressive behaviour (i.e. name-calling, threats, and hitting, punching or kicking), while scores pertaining to ‘no incidents’ of peer

⁸ Interested readers should consult Coxe et al. (2009) for more details regarding NBR models and Atkins et al. (2012) regarding the addition of a zero-inflated model.

aggression or peer victimization are based on students who reported zero incidents of physical or verbal aggression or victimization.

Due to the link functions used (i.e. NBR), conventional model fit indices could not be computed (Muthén & Muthén, 2010). To provide model fit for the mediation models, a nested-model comparison procedure was used (Tomarken & Waller, 2005). This is a manual version of computing a model fit index. The comparison procedure contrasted the theoretical models containing a mediation path in which the supportive school climate factor was mediated by school identification and a nested model, which constrained the mediation path at zero. When the model with the mediation path (the current theoretical models) produces a significant log-likelihood difference score when compared with the nested (non-mediation) model, the results suggest that the model containing school identification as a mediating variable significantly improves the model fit. The significance of the mediation effect was also obtained by testing for significance of indirect effects (Frazier, Tix, & Barron, 2004).⁹

4) Finally, while the focus of the current study is on factors that can be used for early intervention and prevention of peer aggression within the school, supplementary analyses were also conducted in which peer aggression was examined as an antecedent variable. These opposite (reversed direction) models assessed whether aggression predicted poor individual well-being. These analysis are informative in light of previous research showing a reciprocal relationship between individual well-being and involvement in bullying behaviours (Reijntjes et al., 2010). Conventional model fit information was used to assess the supplementary models, i.e. Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) with the greater than or close to .95 criteria; and

⁹ Due to the use of a NBR, the ordinary command of 'indirect' in Mplus was not available. Instead model constraint codes were used to estimate the standard error of the indirect effects and their significance (Muthén & Muthén, 2010).

maximum likelihood (ML)-based standardized root mean squared residual (SRMR) and the root mean squared error of approximation (RMSEA) both with the less than or close to .08 criteria (Hu & Bentler, 1999; Ullman & Bentler, 2012).

Results

Descriptive Statistics and Measurement Information

The average percentage of missing data was 3.5% and Little's MCAR test (Little & Rubin, 2002) showed that data were missing completely at random for the school social environment variables. The mental health, peer aggression and victimization variables were also found to have data missing at random (using student's t-test because of extreme positive skewness). Taking into account the advantages of list-wise deletion for data missing completely at random (Allison, 2002; MacDonald, 2002), the current sample was analysed with the Mplus 'listwise on' coding for all the variables.

Correlations, means and standard deviations for study variables are presented in Table 1. Students reported between 0 and 54 counts of peer aggression in the 'last week' and between 0 and 60 counts of peer victimization in the 'last week'. 12.5% of students reported 0 counts of peer aggression and 16.7% of students reported no peer victimization, demonstrating a large proportion of observations at zero. Given skewness and kurtosis, the normality assumption of multivariate SEM appeared to be violated for most variables. Therefore the Maximum Likelihood estimator with robust standard errors (MLR) was selected for parameter estimation (Muthén & Muthén, 2010).

All the study measures were examined through measurement models, i.e. using embedded confirmatory factor analysis (CFA) in the main SEMs. As outlined above, due to the link functions used (i.e. NBR) conventional model fit indices could not be computed; instead model fit for the SEM is based on the log-likelihood difference statistic. The six item indicators of Group Support showed factor loadings ranged from

.457 to .759. The five item indicators of Academic Support showed factor loadings ranged from .631 to .861. The four item indicators of School Identification showed factor loadings ranged from .760 to .909. Including five indicators, the Depression factor loadings ranged 0.657 to 0.869. The ten item indicators of Anxiety showed factor loadings ranged from .463 to .717. These results confirmed the construct validity of each measure with the used items.

Table 1.
Correlations Between Measures for Peer Aggression and Peer Victimization Counts

Measures	Mean	SD	N	1	2	3	4	5	6	7	8	9	10
1. Peer Aggression	10.8	11.7	1783	1									
2. Peer Victimization	10.1	12.1	1780	.59**	1								
3. Age	13.8	1.26	1740	.07**	-.07**	1							
4. Gender	1.49	0.5	1768	-.30**	-.25**	-0	1						
5. Years at School	2.39	0.97	1641	.09**	.06*	.41**	0.03	1					
6. Depression	2.24	1.1	1693	.13**	.21**	.08**	.13**	.07**	1				
7. Anxiety	2.3	0.86	1696	.16**	.25**	.05†	.09**	0.04	.77**	1			
8. Academic Support	4.59	1.21	1728	-.30**	-.21**	-0	.08**	-.09**	-.17**	-.21**	1		
9. Group Support	4.25	1.11	1719	-.21**	-.29**	.06**	.07**	-0	-.27**	-.29**	.64**	1	
10. School Identification	4.66	1.19	1794	-.25**	-.16**	-0	.09**	-.06**	-.21**	.22**	.59**	.52**	1

Note. Males were coded as 1 and females were coded as 2;
† p is marginal, i.e., .06 < p < .05. * p < .05. ** p < .01 (2-tailed).

Preliminary Analysis: The Intercorrelations of Supportive School Climate and Well-Being Variables with Peer Aggression and Victimization When School Identification is Considered

Prior to conducting the hypothesized mediation models, significant intercorrelations between the variables were examined. That is, a series of preliminary SEMs were conducted to assess whether the supportive school climate factors and well-

being factors would significantly explain peer aggression and victimization when school identification was also a predictor. As shown in Table 2, peer aggression counts were significantly explained by depression ($\beta = 0.29, p < .01, IRR = 1.34$), anxiety ($\beta = 0.34, p < .01, IRR = 1.40$), and group support ($\beta = -0.37, p < .01, IRR = 0.69$), when the significant impact of school identification (β ranged from $= -0.32$ to $-0.48, p < .01, IRR$ ranged from $= 0.61$ to 0.72) and the demographic covariates were taken into account. These three significant associations suggest a school identification mediation model with depression, anxiety, and group support in explaining peer aggression. School identification was not a significant predictor in models for academic support.

Table 2.

Negative Binomial and Logistic Coefficients of Supportive School Climate Factors and Well-being Factors: Partial Correlations with Peer Aggression Counts when School Identification and Demographics were Taken into Account

Dependent Variable	Predictors							
	DEP β	% Change per Count	ANX β	% Change per Count	GS β	% Change per Count	AS β	% Change per Count
Peer Aggression	0.29**	33.90%	0.34**	40.20%	-0.37**	-30.90%	-0.58**	-44.30%
No Incidents of Peer Aggression	-0.78**	-	-0.70*	-	0.15ns	-	0.45**	-
Covariates (β regressed on peer aggression)								
SID	-0.47**	-37.60%	-0.48**	-38.40%	-0.32**	-27.50%	-0.13	ns
Age	0.09	ns	0.07	ns	0.11	ns	0.11	ns
Gender	-0.77**	-53.60%	-0.74**	-52.20%	-0.75**	-52.60%	-0.70**	-50.20%
Years at School	0.15*	14.60%	0.16*	17.00%	0.16*	17.10%	0.13*	14.50%

Note. The coefficients of SID, Age, Gender, Years at school are the estimates of the peer aggression count models. The zero-inflation model imbedded in the NBR was omitted for clarity of presentation of the partial correlations. Males were coded as 1 and females were coded as 2; DEP: Depression; ANX: Anxiety; GS: Group support; SID: School identification; % change per count: change in peer aggression count associated with 1 SD change in independent variable; ns: non-significant; - : no results applicable.

* $p < .05$. ** $p < .01$.

For victimization counts, the results are provided in Table 3. Peer victimization counts were significantly explained by depression ($\beta = 0.55, p < .01, IRR = 1.73$) and anxiety ($\beta = 0.62, p < .01, IRR = 1.86$) when the impact of school identification ($\beta = -0.21$ and -0.20 respectively, $p < .01, IRR = 0.81$) and the demographic covariates were taken into account. School identification was not a significant predictor of peer victimization when the impact of group support or academic support was also assessed. Accordingly, mediation models were not examined further for academic support or peer victimization.

Table 3.
Negative Binomial and Logistic Coefficients of Supportive School Climate Factors and Well-being Factors: Partial Correlations with Peer Victimization Counts when School Identification and Demographics were Taken into Account

	Predictors							
	DEP β	% Change per Count	ANX β	% Change per Count	GS β	% Change per Count	AS β	% Change per Count
Dependent Variables								
Peer Victimization	0.55**	73.30%	0.62**	85.90%	-0.82**	55.90%	-0.50**	39.30%
No Incidents of Peer Victimization	-0.76**	-	-0.58**	-	0.33*	-	0.15	-
Covariates (β regressed on peer victimization)								
SID	-0.21*	-18.94%	-0.20**	-18.12%	0.15	ns	-0.07	ns
Age	-0.30**	-25.92%	-0.29**	-25.17%	-0.26**	22.90%	-0.34**	28.82%
Gender	-0.73**	-51.81%	-0.67**	-48.82%	-0.64**	47.27%	-0.77**	53.70%
Years at School	0.27*	40.00%	0.23**	25.86%	0.29**	33.64%	0.30**	34.99%

Note. The coefficients of SID, Age, Gender, Years at school are the estimates of the victimization count models. The zero-inflation model imbedded in the NBR was omitted for clarity of presentation of the partial correlations. Males were coded as 1 and females were coded as 2; DEP: Depression; ANX: Anxiety; GS: Group support; SID: School identification; % change per count: change in victimization count associated with 1 SD change in independent variable; ns: non-significant; - : no results applicable.

* $p < .05$. ** $p < .01$.

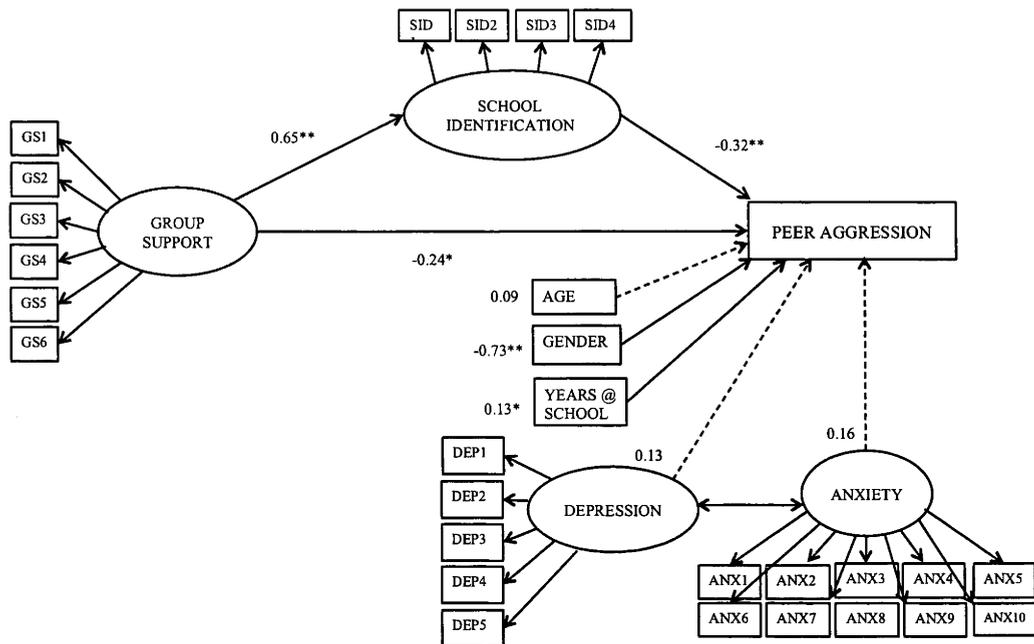


Figure 2. Diagram depicting first step analysis SEM theoretical mediation model of peer aggression regressed on school climate factor of Group Support and well-being factors of Anxiety and Depression (Model a). * $p < .05$, ** $p < .01$. Sig. partial mediation. Indirect effect = -0.21***. GS: Group support; SID: School identification; ANX: Anxiety; DEP: Depression. Most error terms and their intercorrelations have been omitted from figure for simplicity.

Main Analyses: SEMs of Peer Aggression Predicted by Group Support, Including Depression and Anxiety, and School Identification as Mediator

(a) Group support, depression, anxiety, and school identification predicting peer aggression

Following the preliminary analyses, a mediation model in which peer aggression was regressed upon depression, anxiety and group support with school identification as mediator, was conducted while controlling for the demographic covariates (Figure 2). This model controls for comorbidity of depression and anxiety in the one SEM, allowing an interpretation of whether depression symptoms were significantly associated with peer aggression, given students current level of anxiety, and vice versa. Table 4 provides a summary of the coefficients and model fit information.

The chi-square test of difference using the log-likelihood statistics showed that there was good model fit ($\chi^2 = 5.90, p < .01$). A one SD increase in perceptions of group support was associated with 21.4% decrease in counts of peer aggression, and a one SD increase in psychological identification with the school was associated with 27.3% decrease in counts of peer aggression. However, neither anxiety nor depression was significantly related to counts of peer aggression in this model.

Table 4.
Negative Binomial SEM Coefficients From First Step Mediation Model of Peer Aggression Regressed on School Climate Factor of Group Support and Depression and Anxiety

Model a) Peer Aggression, Group Support, Controlling for Depression and Anxiety					
Independent Variable / Path	Peer Aggression			No Incidents of Peer Aggression	
	β	IRR	% Change per Count	β	OR
Demographics					
Age	0.09	1.1	ns	-0.16	ns
Gender	-0.73**	0.48	-52.20%	0.17*	1.19
Years at school	0.13*	1.14	14.20%	-0.11	ns
Mental Health					
Depression	0.13	1.14	ns	-0.77	ns
Anxiety	0.16	1.17	ns	0.01	ns
School Climate					
GS	-0.24*	0.78	-21.40%	-0.02	ns
Identification					
SID	-0.32**	0.73	-27.30%	0.05	ns
Psychological Paths					
GS → SID	0.65**	-	-	0.65**	-
Indirect effect through SID	-0.21**	0.81	-18.70%	-	-
Model Information					
Log Likelihood				-62829.66	
<i>ALL</i>				5.90**	
Mediation Type				Partial	

Note. Males were coded as 1 and females were coded as 2; GS: Group support; SID: School identification; IRR: standardised incidence rate ratio, which is the exponentiated standardized SEM coefficient; % change per count: change in peer aggression count associated with 1 SD

change in independent variable; OR: odds ratio, which is the exponentiated standardized SEM coefficient; ΔLL : test of model fit using chi-square test of Log likelihood difference. * $p < .05$. ** $p < .01$.

The zero inflation term included in the models allows an interpretation of the impact of the predictor variables on students who reported no incidents of peer aggression. Looking at students who reported zero incidents of peer aggression, the zero-inflated negative binomial analysis showed that gender was the only factor that remained a significant predictor of non-involvement in peer aggression. Females were 1.19 times more likely to be uninvolved in physically or verbally peer aggression.

There was significant partial mediation of group support on peer aggression through school identification in this model. Computation of the indirect effect showed that every one SD increase in group support through school identification predicted an 18.7% decrease in counts of peer aggression ($\beta = -0.21, p < .01, IRR = 0.81$). Only partial mediation was achieved as the direct relationship between group support and peer aggression remained significant.

Two SEMs of Peer Aggression Predicted by Group Support and School Identification as Mediator for Depression or Anxiety

Two additional mediation models were then conducted in which each of the well-being factors were included in separate mediation models. While accounting for comorbidity between variables is important, the pure effect of depression or anxiety (measured in the above mediation analysis) is rarely measured because it does not reflect the reality of presentations in clinical practice. In line with previous research, the below models allow an analysis of whether symptoms of anxiety are predictive of peer aggression without partialling out the potential influence of depressive symptoms and vice versa.

(b) Group support, depression, and school identification predicting peer aggression

Figure 3 presents the final SEM in which peer aggression was regressed upon depression and group support with school identification as mediator, while controlling for the demographic covariates. Table 5 provides a summary of the coefficients and model fit information. The chi-square test of difference using the log-likelihood statistic showed that there was good model fit ($\chi^2 = 605.05, p < .01$). A one SD increase in depression predicted a 26.2% increase in counts of peer aggression ($\beta = 0.23, p < .01$, IRR = 1.26), while a one SD increase in perceptions of group support predicted a 24.5% decrease in counts of peer aggression ($\beta = -0.28, p < .01$, IRR = 0.75). Every one SD increase in psychological identification with the school predicted a 25.6% decrease in counts of peer aggression ($\beta = -0.30, p < .01$, IRR = 0.74).

Looking at the students who reported zero incidents of peer aggression, the zero-inflated negative binomial analysis showed that an increase in reported symptoms of depression predicted lower odds of reporting no incidents of peer aggression ($\beta = -0.82, p < .01$, OR = 0.44), while group support and school identification did not significantly predict odds of reporting no incidents of peer aggression.

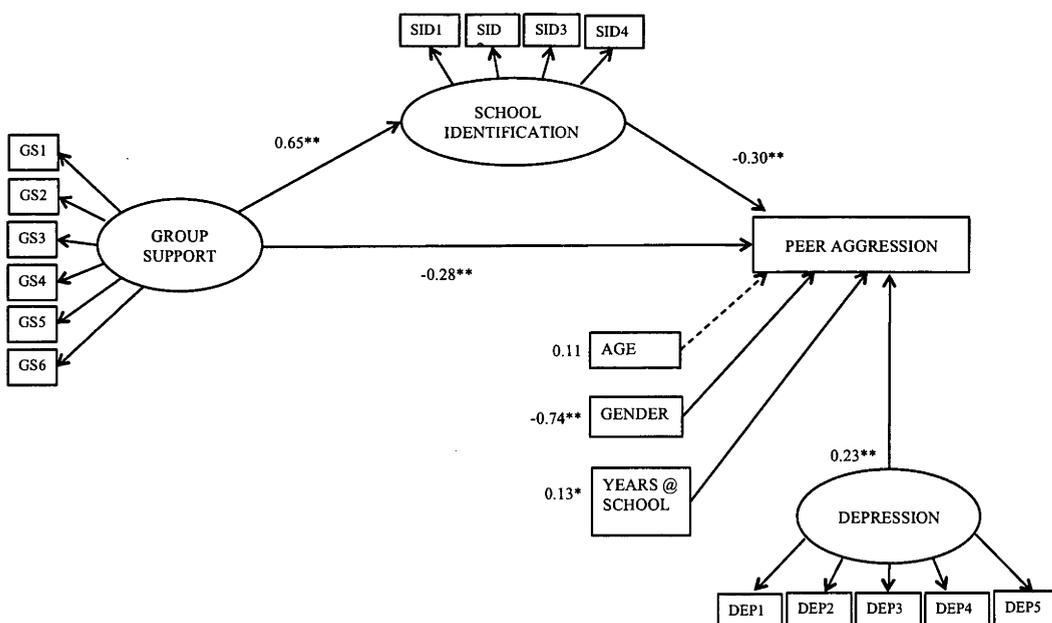


Figure 3. Diagram depicting theoretical mediation SEM of peer aggression including school climate factor group support and well-being factor depression (Model b). * $p < .05$, ** $p < .01$.

Sig. partial mediation. Indirect effect = -0.19**; Males were coded as 1 and females were coded as 2; GS: Group support; SID: School identification; DEP: Depression. Error terms and their intercorrelations have been omitted from figure for simplicity.

There was significant partial mediation of group support on peer aggression through school identification in this model. The indirect effect indicated that every one SD increase in group support through school identification predicted a 17.6% decrease in counts of peer aggression ($\beta = -0.19, p < .01, IRR = 0.82$). Partial mediation was achieved as the direct relationship between group support and peer aggression remained significant.

Table 5.

Negative Binomial SEM Coefficients From the Mediation Model of Peer Aggression Regressed on School Climate Factor Group Support and Depression

Independent Variable / Path	Peer Aggression			No Incidents of Peer Aggression	
	β	IRR	% Change per Count	β	OR
Model b) Peer Aggression, Depression, and Group Support					
Demographics					
Age	0.11	1.12	ns	-0.1	ns
Gender	-0.74**	0.47	-52.40%	0.14*	1.15
Years at school	0.13*	1.14	13.90%	-0.13	ns
Mental Health					
Depression	0.23**	1.26	26.20%	-0.82**	0.44
School Climate					
GS	-0.28**	0.75	-24.50%	-0.07	ns
Identification					
SID	-0.30**	0.74	-25.60%	0.09	ns
Psychological Paths					
GS → SID	0.65**	-	-	0.65**	-
Indirect effect through SID	-0.19**	0.82	-17.60%	-	-
Model Information					
Log Likelihood				-40786.23	
ΔLL				605.05**	
Mediation Type	Partial				

Note. Males were coded as 1 and females were coded as 2; GS: Group support; SID: School identification; IRR: standardized incidence rate ratio, which is the exponentiated standardized SEM coefficient; % change per count: change in peer aggression count associated with 1 SD change in independent variable; OR: odds ratio, which is the exponentiated standardized SEM coefficient; ΔLL : test of model fit using chi-square test

of Log likelihood difference; ns: non-significant; - : no results applicable.

* $p < .05$. ** $p < .01$.

(c) Group support, anxiety, and school identification predicting peer aggression

Figure 4 presents the final SEM in which peer aggression was regressed upon anxiety and group support with school identification as mediator, while controlling for the demographic covariates. Table 6 provides a summary of the coefficients and model fit information. The chi-square test of difference using the log-likelihood statistics showed that there was good model fit ($\chi^2 = 472.29, p < .01$). A one SD increase in anxiety predicted a 32.3% increase in counts of peer aggression ($\beta = 0.28, p < .01, IRR = 1.32$), while one SD increase in perceptions of group support predicted a 20.7% decrease in counts of peer aggression ($\beta = -0.23, p < .05, IRR = 0.79$). Every one SD increase in psychological identification with the school predicted a 28.6% decrease in counts of peer aggression ($\beta = -0.34, p < .01, IRR = 0.71$).

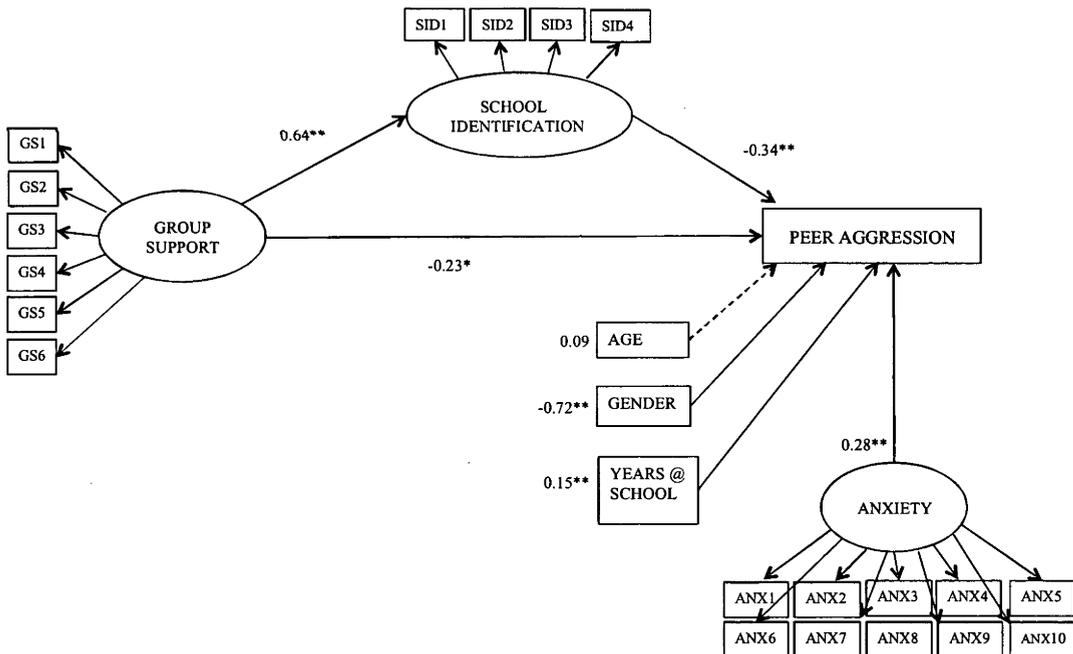


Figure 4. Diagram depicting theoretical mediation SEM of peer aggression including school climate factor group support and well-being factor anxiety (Model c). Note. * $p < .05$, ** $p < .01$. Sig. partial mediation. Indirect effect = -0.19**; Males were coded as 1 and females were coded as 2; GS: Group support; SID: School identification; ANX: Anxiety. Error terms and their intercorrelations have been omitted from figure for simplicity.

Table 6.

Negative Binomial SEM Coefficients From the Mediation Model of Peer Aggression Regressed on School Climate Factor Group Support and Anxiety

Independent Variable / Path	Peer Aggression			No Incidents of Peer Aggression	
	β	IRR	% Change per Count	β	OR
Demographics					
Age	0.09	1.1	ns	-0.28*	0.76
Gender	-0.72**	0.48	-51.50%	0.20*	1.22
Years at school	0.15*	1.16	16.20%	-0.09	ns
Mental Health					
Anxiety	0.28**	1.32	32.30%	-0.73*	0.48
School Climate					
GS	-0.23*	0.79	-20.70%	0.01	ns
Identification					
SID	-0.34**	0.71	-28.60%	-0.01	ns
Psychological Paths					
GS → SID	0.64**	-	-	0.64**	-
Indirect effect through SID	-0.21**	0.80	-19.60%	-	-
Model Information					
Log Likelihood			-52456.52		
<i>ALL</i>			472.29**		
Mediation Type			Partial		

Note. Males were coded as 1 and females were coded as 2; GS: Group support; SID: School identification; IRR: standardized incidence rate ratio, which is the exponentiated standardized SEM coefficient; % change per count: change in peer aggression count associated with 1 SD change in independent variable; OR: odds ratio, which is the exponentiated standardized SEM coefficient; *ALL*: test of model fit using chi-square test of Log likelihood difference; ns: non-significant; - : no results applicable.

* $p < .05$, ** $p < .01$.

According to the zero-inflated negative binomial analysis of students who reported no incidents of peer aggression, an increase in anxiety made students less likely to report no incidents of peer aggression ($\beta = -0.73$, $p < .05$, OR = 0.48). Group support and school identification did not significantly predict reporting no incidents of peer aggression.

There was also significant partial mediation of group support on peer aggression through school identification in this model. The indirect effect indicated that every one SD increase in group support through school identification predicted a 19.6% decrease in counts of peer aggression ($\beta = -0.21, p < .01, IRR = 0.80$). Again, partial mediation was achieved as the direct relationship between group support and peer aggression remained significant.

Supplementary Analyses: Physical and Verbal Peer Aggression as a Predictor

In a supplementary analysis looking at peer aggression as a predictor of well-being problems, physical and verbal peer aggression was related to an increase in anxiety ($\beta = 0.15, p < .01$ in model with group support as covariate and identification as mediator; CFI = 0.92, TLI = 0.90, SRMR = 0.10, RMSEA = 0.05) or depression ($\beta = 0.14, p < .01$ in model with group support as covariate and identification as mediator; CFI = 0.92, TLI = 0.90, SRMR = 0.12, RMSEA = 0.06).

These supplementary models suggest a reciprocal relationship between well-being and involvement in school-based aggression. Comparing the standardized coefficients (β) of peer aggression as a predictor of well-being with the standardized coefficients of well-being as a predictor of peer aggression, poor well-being in the form of depression or anxiety appeared to be a stronger precursor of peer aggression (β for well-being as predictor ranged from = 0.23 to 0.28) than it was an outcome (β for well-being as an outcome ranged from = 0.14 to 0.15) in these SEMs.

Discussion

The innovative and important aspects of the study include introducing group psychology and group processes into our understanding of school life. Through engagement with social psychological theory and research, school identification is understood as capturing one's self-definition as a school member (Bizumic et al., 2009;

Reynolds et al., 2007; Reynolds et al., 2015). Importantly, this analysis may help explain how a supportive school climate impacts on individual attitudes and behaviours, including peer aggression. It is this issue that was the focus of the current research, where the role of school identification as a mediator in explaining the relationship between school climate and peer aggression and victimization was investigated.

The research also extended previous research through the inclusion of two sub-factors of school climate (rather than one general factor) which may have different impacts for students affected by peer aggression and victimization (Harel-Fisch et al., 2011; Hemphill et al., 2012), and, within a model where individual well-being (anxiety and depression) was also assessed. While previous research has looked at the role of individual well-being, often it is the case that other factors that are predictive of school-based aggression, such as the school social environment, have not been investigated. Equally, previous school social environment research is also limited because individual psychological factors are rarely integrated into the analyses (Espelage & Swearer, 2003; Hong & Espelage, 2012).

Key Findings

When school climate, school identification and well-being are explored in the one research design there is clear evidence that the school climate factors of group support and academic support are strong and significant predictors of peer aggression and victimization. Such findings confirm previous research (that has incorporated less comprehensive designs; Gendron et al., 2011; Harel-Fisch et al., 2011; Hemphill et al., 2012; Ma, 2002; Reis et al., 2007) and reinforce the importance of focusing on both individual well-being and the school social environment in understanding school-based aggression.

Regarding the mediation of the supportive school climate factors (group support and academic support) by school identification, the findings provided mixed support for predictions. In partial support of the hypothesized mediation, there was evidence of significant partial mediation through school identification in explaining the relationship between group support and peer aggression, having accounted for individual well-being. Previous research suggests that students' psychological connection to the school may help explain how the school climate comes to influence individual behaviours such as academic achievement (Bizumic et al., 2009; Reynolds et al., 2015), and the current findings suggest that this may also be the case for school-based aggression. That is, there was partial support for the idea that while the school climate (group support) may describe aspects of school functioning from the students' perspective, students' sense of identification (self definition as a school member) with the school may be an important psychological process that strengthens the impact of the school on individual behaviours including peer aggression.

Counter to expectations, though, school identification could not be assessed as a mediator of the relationship between group support and peer victimization because identification was not a significant predictor of peer victimization when group support was considered. School identification was also not a significant predictor of peer aggression or peer victimization when the supportive climate factor of academic support was in the model. As a result, mediation of the relationship between academic support and school-based aggression through school identification was not tested.

Research measuring peer aggression and victimization as a social psychological phenomenon, and focusing on the role of social identity processing in understanding these school-based behaviours is still relatively new in its development, with many of these studies focusing on intention to bullying or reactions to bullying incidents within

the school (Jones et al., 2008; Duffy & Nesdale, 2009). Very little social psychology research has addressed the social identification processes involved in victimization, making interpretations of why school identification was not a mediator variable for peer victimization difficult. Additional research in this field is needed to understand how students experiencing victimization perceive their (psychological) group memberships within the school.

A review of related research may provide possible insights into the reasons academic support was not mediated by school identification. For example, some researchers have argued that there is a relationship between perceived competition in the classroom (lack of academic support) and poorer relationships with teachers and peers (Loukas et al., 2006). Additionally, Liu and Lu (2011) found that stress related to the interaction between the student and their teacher was the only significant predictor of academic decline when compared to stress due to school performance, peer pressure, future uncertainty, and school/leisure conflicts. It is possible that a sense of academic support is more closely associated with the interpersonal relationship between the teacher and student and therefore is less affected by the overall school climate and school identification process.

Along these lines, one study suggested a 'buffering effect' of student-teacher connectedness on the relationship between school bullying and academic achievement, such that better academic outcomes were related to a positive student-teacher relationship, and these students also reported less bullying (Konishi, Hymel, Zumbo, & Zhen Li, 2010). The inclusion of more specific measures concerning quality relationships with teachers may be informative in better understanding the impact of academic support in reducing conduct problems.

Additionally, to date many researchers have looked at factors such as academic competition, academic failure, or alienating modes of learning (rather than a supportive academic climate) as predictors of bullying and aggression and have supposed that promoting meaningful academic engagement at school may reduce school-based aggression (Hemphill et al., 2012; Yoneyama & Naito, 2003). The current study certainly supports this assertion, with academic support being the strongest predictor of peer aggression, but additional work to understand the psychological processes behind this relationship is still needed.

Interestingly, academic support demonstrated a stronger impact when compared to group support in reducing counts of peer aggression (Academic support $\beta = -0.58$, $p < .01$; Group support $\beta = -0.37$, $p < .05$), whereas for students reporting victimization, group support was associated with a significantly higher negative relationship with peer victimization (Group support $\beta = -0.81$, $p < .01$; Academic support $\beta = -0.50$, $p < .01$). Such findings reinforce the need to examine sub-factors of school climate and not necessarily one general factor. Previous longitudinal research found that these two sub-factors were of comparable importance in reducing rates of school-based aggression over time (Turner et al., 2014). Such findings again point to the need for further research, particularly to understand how (i.e. through what psychological mechanism) a meaningful and supportive academic environment discourages students from participating in peer aggression.

There was partial support for hypothesis two, which predicted that individual well-being factors would remain significant positive predictors of school-based aggression having accounted for the supportive school climate factors and school identification. When considered in isolation, both well-being factors were significant predictors of peer aggression having taken into account the impact of group support and

school identification. However, neither depression nor anxiety were significant predictors of peer aggression when they were both accounted for in the same model. This difference in results across the models is thought to reflect the fact that peer aggression is associated with comorbid symptoms of depression and anxiety rather than being independently associated with pure depression or pure anxiety (as measured in model a). What is clear is that in line with some previous research (Espelage, Bosworth and Simon, 2001; Fekkes, et al., 2005 Turner et al., 2014), well-being is a predictor of peer aggression.

Implications of the Current Research

There are a number of implications stemming from this work. Above all, the results suggest that both individual well-being and school social environment factors are important in understanding involvement in peer aggression. On a practical note, the relationship between well-being and the likelihood of being involved in peer aggression after accounting for the school environment factors suggests that the provision of programs to support student well-being by qualified school psychologists remains important (Swearer & Doll, 2001). As it currently stands, mental health and well-being work in schools are often marginalized as a secondary school support services (Kuperminc et al., 2001). The current research findings support the notion (e.g. Dowdy et al., 2014; Nastasi, 2004) that mental health services should move from being more external to the school (external professionals and resources) to being internal (i.e. increased availability of school psychologists, preventative models, use of well-being and resilience programs within classrooms) to provide early intervention strategies for managing peer relations and student well-being prior to the onset of more serious behavioural and emotional problems.

There are both practical and research implications to be considered regarding the impact of a supportive school climate on peer aggression. These results emphasize the importance of continuing to work from an intervention approach that focuses on multiple aspects or sub-factors of the school environment. However, schools also need to recognize that a standardized intervention may not be equally efficacious for students affected by peer aggression and victimization. Teachers may need to focus on supporting students involved in peer aggression to engage in meaningful academic work (Hemphill et al., 2012; Reis et al., 2007), while students involved in peer victimization may benefit further from strategies aimed at fostering the development of peer and teacher relationships (Harel-Fisch et al., 2011), for example, through introducing social and emotional skills training for students.

For researchers, these results suggest continued merit in investigating school climate sub-factors, with the aim of identifying school features that may be of particular importance to students experiencing school-based aggression. It is also necessary to consider students' social psychological group membership within the school. While much previous research has defined and measured students' connection (belonging, engagement, bonding, etc.) to the school as an individual psychological process that occurs within the school (Blum, 2005; Giovazolias, Kourkoutas, Mitsopoulou, & Georgiadi, 2010; Harel-Fisch et al., 2011; Wingspread declaration on school connections, 2004), the current findings suggest that it may also be related to group psychology and students' self-definition as a group member in the school.

There are also potential research implications for measuring and understanding the constructs of school connectedness and school belonging in general. For example, if it is the case that conceptually there is overlap with school identification then mounting research, including that provided in the current study, provides support for the notion

that factors such as school connectedness and belonging need to be understood as important and separate constructs to school climate (Bizumic et al., 2009; Reynolds et al., 2015; Turner et al., 2014, 2015; Wilson, 2004). However, more complicated than this is the conceptual overlap between school connectedness, belonging and bonding and school identification. It is theoretically plausible that students can experience an individual psychological connection to the school as well as experiencing significant and meaningful social psychological group membership. Additional research to understand the relationship between school connectedness and school identification more formally may be helpful.

Finally, at a practical level, this research suggests value in addressing peer aggression through programs that serve to clarify the norms of the school community or group with respect to peer aggression and bullying behaviours as well as building a psychological connection to the community. In other words, reducing school-based aggression needs to focus on building a sense of social identification (i.e. “we” rather than “I”; Haslam, Eggins, & Reynolds, 2003; Reynolds et al., 2007) with the group (i.e. the school) in addition to establishing clear anti-bullying norms (often prescribed by the school climate), and this may particularly impact on the students involved in peer aggression.

Strengths, Limitations, and Future Directions

A major strength of the current research was the analysis of peer aggression and victimization as count variables. Many researchers dichotomize their results into students involved or uninvolved in bullying by determining an arbitrary cut off (e.g. all students who indicate three incidents or more in the last week are defined as bullies). By upholding their original form as count variables and incorporating statistical precision through the inclusion of a zero-inflated term, this study was able to provide an

understanding of these relationships based on the frequency of peer aggression as well as students reporting no peer aggression.

Despite its strengths, this study cannot draw conclusions about causality due to its cross-sectional nature. Just as emotional problems and a negative perception of the school environment may promote school-based aggression, the degree to which a student is exposed to peer aggression may also mean that their well-being suffers and they become more disconnected from school (disidentification). Previous work suggests that these relationships are not simple. Some research has demonstrated that students with emotional and behavioural problems do not simply evaluate their school climate in a more negative way (Kuperminc, Leadbeater, & Blatt, 2001), while others have suggested that negative well-being may actually impede the development of students' connection to their school (Loukas, Ripperger-Suhler, & Herrera, 2012). However, a longitudinal study found limited support for a reciprocal relationship between supportive school climate factors, school identification and bullying perpetration when assessed over three years (Turner et al., 2014).

There is more consistent evidence to suggest a reciprocal relationship between well-being and school-based aggression, particularly for peer victimization (Hodges & Perry, 1999; Reijntjes et al., 2010; Turner et al., 2014). In line with this, the supplementary analyses conducted in this study supported the idea that peer aggression also acts as a precursor to poorer well-being. Still, of note is the fact that depression or anxiety showed stronger standardized coefficients when analyzed as a precursor to peer aggression (β for well-being as predictor ranged from 0.23 to 0.28) than when analyzed as an outcome variable (β for well-being as an outcome ranged from 0.14 to 0.15). Longitudinal mediation models with larger samples are needed to assess the reciprocity of these relationships over time.

It is recognised that multi-level modelling or the cluster option for complex survey data analysis in Mplus may be viewed as an appropriate method of analysis for examining school-level variables, given that students within one school may be more similar than students from another school. However this was not feasible given the current study only included four schools (Asparouhov & Muthén, 2005; Muthén & Satorra, 1995; Stapleton, 2006). These issues represent opportunities for future research.

Finally, this research focused on outcomes for students involved in physical and verbal peer aggression and victimization. However other modes of attack such as relational or cyber bullying have been identified (Bauman & Del Rio, 2006). Other elements of bullying behaviour such as the perception of a power imbalance were also not measured in the current design. Similarly, this research cannot draw conclusions about students who engage in both aggression and victimization at the same time, defined as a significantly smaller but distinct group of at-risk youths (Menesini et al., 2009). Future research would benefit from including additional modes and elements of bullying behaviour.

Conclusions

This work answers calls to assess individual well-being and the school social context in understanding physical and verbal school-based aggression, and investigates one possible social psychological mechanism through which supportive school climate factors may come to impact on physical and verbal peer aggression. This study highlights merit in investigating different factors of a supportive school climate and additional research is still needed, particularly to understand how (i.e. through what psychological mechanism) a meaningful and supportive academic environment discourages students from participating in peer aggression. This research shows how new insights can be gained through cross-disciplinary work that draws on educational,

clinical, and social psychology. The present study suggests that school-based interventions may benefit from addressing individual characteristics such as student well-being, and contextual aspects of the school including school climate *and* students sense of social identity within the school.

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Chapter 4

Discussion: Learning, Implications and Limitations

Learning, Implications and Limitations

There were three broad objectives of this research program. In the first instance, it aimed to investigate the contributions of a number of individual-psychological and school social environment variables related to physical and verbal bullying and victimization in the one research design. Additionally, this work sought to answer calls for longitudinal research (e.g. Espelage & Swearer, 2003; Rigby, 1999), that measures individual and school social environment variables that can produce change in incidence of bullying behaviours across time. The provision of longitudinal work can highlight factors that are important in early intervention and prevention programs. The third aim was focused on advancing our understanding of the mechanisms or processes through which the school environment comes to influence school bullying behaviour (e.g. Wilson, 2004). This was done by assessing the mediating role of social identification in explaining the relationship between a supportive school climate and bullying behaviour. The inclusion of the social identity framework offers one possible explanation of the processes through which the school environment impacts on individuals. It also introduces group psychology and group processes in understanding life in schools. Through engagement with social psychology theory and research, school identification is understood as being about one's self-definition as a school member and as having an important, distinctive role (Bizumic et al., 2009; Reynolds et al., 2007; Reynolds et al., 2015).

This chapter provides a recapitulation of the main findings of the two studies included in the dissertation and links these results to existing work. Practical and research implications of the dissertation are then discussed. Finally, broader strengths, limitations and future directions of the dissertation are provided, as well as

recapitulating strengths and limitations that are specific to each of the two research studies.

Recapitulation of Study One Findings

Overall, the results of the Latent Growth Model study outlined in Chapter 2 provided support for the important contributions of individual well-being (depression and anxiety), two supportive school climate sub-factors (group support and academic support), and students' sense of social identification with the school, in understanding change in rates of bullying perpetration and peer victimization over time. Using a longitudinal three-phase student sample, the first study found that change in each of these factors predicted change in self-reported rates of bullying perpetration and peer victimization in high school students over three years.

Additionally, comparison of the strengths of the relationships provided insight into factors that could be the focus for intervention and prevention work. The two school climate sub-factors were the strongest predictors of change in bullying behaviour, with academic support demonstrating the strongest prediction of change in bullying and victimization. School identification, anxiety, and depression appeared to be of similar importance in predicting change in bullying perpetration over time. However, for peer victimization, an increase in school identification appeared to be of comparable importance to both school climate sub-factors in predicting change in victimization over time. Overall, the school social-psychological factors were stronger predictors than the individual well-being (depression and anxiety) factors in this study.

The findings of study one help to refine our understanding of factors that need to be considered in school-based intervention work. For example, previous work measuring academic failure has postulated that additional academic support may reduce incidences of bullying perpetration (Hemphill et al., 2012; Reis et al., 2007) but the

current study provides direct evidence that academic support predicted reductions in bullying perpetration and peer victimization over three years. In fact, there is very little work looking at the long-term impact of school climate factors on bullying behaviour (Mitchell & Borg, 2013), however comparisons of the strengths of the effects in this study suggested that the two school climate variables were the strongest predictors of change in bullying behaviour over time.

In terms of advancing our understanding of the relationship between well-being and bullying behaviour, previous well-being research has predominantly focused on internalizing problems as a predictor of peer victimization (e.g. Reijntjes et al., 2010). The current findings provide longitudinal support for the suggestion that internalizing problems are also an important predictor of bullying perpetration across time (Espelage et al., 2001). Additionally, according to the supplementary analysis there was no evidence to support a reciprocal relationship between well-being and bullying perpetration. However, with respect to victimization, change in victimization across time appeared to affect change in well-being (depression or anxiety). So in this research it appeared that well-being is a stronger predictor of involvement in bullying perpetration than it is an outcome of involvement in bullying.

There are a number of plausible reasons children who are anxious or depressed may be more likely to be involved in bullying and victimisation. For example, with regard to victims, it has been suggested that the relationship between victimization and mental health problems is due to the fact that children with such problems are convenient and rewarding targets for bullies (Arseneault, et al., 2010). This argument is based on the idea that the observation of a victim demonstrating correlates of emotional dysregulation, such as the expression of fear or anxiety during a bullying incident, reinforces the bully's belief that they are powerful and superior.

While less research has initially focused on the impact for the bully, the research outlined above highlights the need to include bully perpetrators in any analysis of well-being, with these students reporting correspondingly high rates of mental health complaints. It may be that bullies engage in aggressive behaviour at school due to their insecurities and low emotional well-being. Conversely, involvement in bullying perpetration may lead to emotional distress. Again, these ideas have been relatively under conceptualized, particularly from the perspective of the bully (Meland, et al., 2010).

Moreover, empirical support for the role of social identification in understanding bullying behaviour predominantly comes from cross-sectional and experimental studies. These studies have demonstrated the importance of group psychology and group processes in understanding bullying by demonstrating the impact of social norms and social identity processes on intention to bully (Nesdale et al., 2008), rate of bullying (Duffy & Nesdale, 2009; Perkins et al., 2011), and reactions to bullying incidents (Jones et al., 2008; Jones et al., 2011; Jones, Manstead, & Livingstone, 2012; Ojala & Nesdale, 2004). However, this research program includes the first paper that addresses change over time in school identification (and its impact on bullying perpetration and peer victimization), providing a fundamentally important extension of existing social psychological research.

Recapitulation of Study Two Findings

The second study of this research program went on to assess the role of social identification in mediating the relationship between two supportive school climate sub-factors and bullying behaviour. Previous research suggests that students' psychological connection to the school as a group member (and the social identity perspective) may help explain how the school climate comes to influence individual behaviours such as

student well-being and academic achievement (Bizumic et al., 2009; Reynolds et al., 2015), and the current findings suggest that this may also be the case for school-based bullying.

That is, these findings provided partial support for the idea that while the school climate (group support) may describe aspects of the internal functioning of a school, students' sense of identification (self-definition as a school member) with the school may be an important psychological process that strengthens the impact of school environmental factors on individual behaviours including bullying behaviours. In particular, there was evidence of significant partial mediation through school identification in explaining the relationship between group support and bullying behaviours, having taken into account individual well-being and other demographic characteristics.

Notably, negative school identification also had a stronger association with bullying when compared to the individual well-being measures included in this study. These results further highlight the emerging significance of the social identity construct in the school setting as having an important and distinctive role (Bizumic et al., 2009; Reynolds et al., 2007), by demonstrating that a sense of identification with the school remained an important predictor of bullying behaviours after accounting for the school climate factor of group support and individual well-being.

An unexpected finding of study two, though, was that school identification could not be assessed as a mediator of the relationship between group support and peer victimization because identification was not a significant predictor of victimization when group support was considered. School identification was also not a significant predictor of bullying behaviours when the supportive climate factor of academic support was considered. As a result, mediation models of the relationship between academic

support and bullying behaviour (bullying or victimization) through school identification were not tested.

In regard to the fact that school identification did not mediate the relationship between group support and victimization, there is very little social psychology research that has addressed the social identification processes involved in victimization, making interpretations of why school identification was not a mediator variable for peer victimization difficult. However, one possible explanation is the fact that unlike bullies, victims have very little control over whether or not they are victimized. That is, while bullying is a purposeful violation of others, victimization is a consequence of another person's actions. Consequently, it may be that while volitional acts of aggression can be understood through psychological processes, being victimized isn't necessarily driven by one's own psychology. Thus, school climate may predict what you (the respondent) do to others via your sense of identification, but predicts what others do to you more directly.

A review of extant research may also provide possible insights into the reasons academic support was not mediated by school identification. For example, Loukas et al. (2006) suggested that there is a relationship between perceived competition in the classroom (lack of academic support) and poorer relationships with teachers and peers. Additionally, Liu and Lu (2011) found that stress related to the interaction between the student and their teacher was the only significant predictor of academic decline when compared to stress due to school performance, peer pressure, future uncertainty, and school/leisure conflicts. It could be hypothesized that a sense of academic support is more closely associated with the interpersonal relationship between the teacher and student and, therefore, is less affected by the overall school climate and school identification processes. Along these lines, Konishi, Hymel, Zumbo, and Zhen Li

(2010) suggested a 'buffering effect' of student-teacher connectedness on the relationship between school bullying and academic achievement, such that better academic outcomes were related to a positive student-teacher relationship, and these students also reported less bullying. So, while an environment characterized by bullying typically leads to poorer academic performance, for these students, engagement with their academic work remained consistent regardless of bullying within the school due to their connection with their classroom teacher.

Much additional work has focused on factors such as academic competition, academic failure, or alienating modes of learning (rather than a supportive academic climate) as predictors of involvement in bullying and has postulated that promoting meaningful academic engagement at school may reduce bullying (Hemphill et al., 2012; Yoneyama & Naito, 2003). The current research certainly supports this assertion, with academic support being the strongest predictor of bullying perpetration (study one and two) and peer victimization (study one), but additional work to understand the psychological processes behind this relationship is still needed. Additional discussion of future research that could assist in our understanding of the unique relationship between academic support and bullying behaviour is outlined further under strengths and limitations of study two.

In addition, there was partial support for the prediction that individual well-being factors would remain significant positive predictors of school-based aggression having accounted for the supportive school climate factors and school identification. When considered in isolation, depression or anxiety were significant predictors of bullying perpetration having taken into account the meaningful impact of group support and school identification. Whereas, neither well-being factor was a significant predictor of bullying behaviours when they were both accounted for in the same model. This

difference in results across the models was thought to reflect the fact that bullying is associated with comorbid symptoms of depression and anxiety (Aina & Susman, 2006; Gorman, 1996) rather than being independently associated with either pure depression or pure anxiety. Overall, though, the results of the second study further support the conclusion that when individual and school factors are considered together, often it is the school environment that is having most impact on bullying behaviours.

Implications of the Current Research Program

There are a number of implications of the findings of this research program. Most importantly, this research suggests that both individual well-being and school-social environment factors are important in understanding involvement in bullying behaviour and, therefore, need to be considered in creating evidence-based prevention and intervention programs at school. Practice and research implications related to each of the predictors of well-being, a supportive school climate, and school identification on bullying perpetration and peer victimization are discussed in the sections below.

Implications for Student Well-being

At a practical level, this research points to a potential avenue for intervention in terms of reducing school-based bullying. Anxiety or depression remained significant predictors of bullying perpetration and peer victimization having accounted for the school environment variables. The significant relationship between well-being (depression and anxiety) and the likelihood of being involved in bullying behaviour suggests that the provisions of programs to support student well-being by qualified school psychologists remains important to reduce rates of school bullying (Swearer & Doll, 2001) in addition to managing the climate or culture of the school.

Given longitudinal work that demonstrates the potentially detrimental short- and long-term mental health concerns associated with bullying and victimization during

childhood and adolescents (Sourander et al., 2007a; Sourander et al., 2007b), the school needs to be well-resourced for early intervention. However, as it currently stands, mental health and well-being work in schools are often marginalized as a secondary school support service (Kuperminc et al., 2001); focused on children identified as having problems and typically involving crisis management, assessment, diagnosis and appropriate referral outside of the school (Dowdy et al., 2014; Nastasi, 2004).

Prevention and early intervention programs that address the social and emotional well-being of students before they become more serious, are less common (Kuperminc et al., 2001).

The current research findings support the notion (e.g. Dowdy et al., 2014; Nastasi, 2004) that mental health services should move from being more external to the school (external professionals and resources) to being internal (i.e. increased availability of school psychologists, preventative models, use of well-being and resilience programs within classrooms) to provide early intervention strategies for managing peer relations and student well-being prior to the onset of more serious behavioural and emotional problems including bullying and victimization.

Cognitive-behavioural therapy (CBT) is currently the evidence-based treatment approach for anxiety and depression symptoms in children and adolescents (Compton et al., 2004). Therefore, opportunities for schools to implement general well-being programs based on a CBT model should be considered. Along these lines, several studies have demonstrated efficacy in school-based early intervention CBT programs, noting that a critical component of school-based interventions is that they extend the reach of efficacious programs to all students including disadvantaged populations within the school (Bernstein, Layne, Egan, & Tennison, 2005; Mifsud & Rapee, 2005). The results of the current research program would suggest that, over time, access to

these mental health and well-being programs may also reduce incidences of bullying and victimization within the school (as well as improving student well-being).

Schools that are implementing well-being programs should consider developing a research project that can take place alongside the implementation of their program. That is, while we know that positive well-being is important to reducing school-based bullying, we don't know exactly how these interventions have their effect. It could be that when students feel better in themselves they are less likely to behave aggressively towards other, suggesting a direct relationship between well-being and bullying behaviour. However, it could also be the case that when schools implement well-being programs, students may feel more cared for, increasing their sense of identification with the school.

Moreover, for researchers, this work highlights the notion that bullies and victims in many ways, are fellow sufferers (Espelage et al., 2001; Meland et al., 2010). A majority of research has focused on victimized students. However the current research emphasises the need to better understand the well-being of the perpetrators of bullying in order to better address the psychological needs of these students.

Implications for a Supportive School Climate

There are both practical and research implications to be considered regarding the impact of a supportive school climate on bullying behaviour. Interestingly, in terms of the role of the supportive school climate sub-factors of group support and academic support, there were inconsistencies between the two studies. Both school climate factors were of comparable importance for bullies and victims in the longitudinal study. Whereas, bullies reported more negative perceptions of academic support, while victims reported more negative perceptions of group support in the second research study. For research, these results highlight merit in the continued investigation of different factors

of a supportive school climate (e.g. Harel-Fisch et al., 2011; Hemphill et al., 2012; Reis et al., 2007). What this means is that researchers need to measure many of the factors already found to be important components of school climate (e.g. student-teacher relationship, parental involvement in the school, etc.), and analyses them as unique variables rather than analysing them as a global school climate construct. This type of research will enable comparison of constructs in order to identify the most critical factors to reducing school-based bullying.

On a practical note, schools should recognize that bullies and victims may view the climate of the school differently. While the current research program cannot conclude whether it is specific elements of school climate that are of particular interest with respect to bullying and victimization, a standardized intervention may not be equally effective for perpetrators and victims. Nonetheless, the results of both studies support research that encourages engagement in meaningful academic work (Hemphill et al., 2012; Reis et al., 2007), as well as strategies aimed at fostering the development of peer and teacher relationships (Harel-Fisch et al., 2011), for example, through introducing social and emotional skills training for students (Fox & Boulton, 2005).

Along these lines, social and emotional skills training programs often include conflict resolution, negotiation and problem solving skills, affect regulation or management skills, and pro-social skills building (Fox & Boulton, 2003b; Reid, Eddy, Fetrow, & Stoolmiller, 1999). These skills aim to promote social competence by teaching children how to interact more effectively with their peers and teachers. Importantly, the ability to establish positive social relationships with students and school personnel has been shown to make children less likely to be seen as an 'easy target' or be 'rejected' by peers, and encourages general pro-social development (Fox & Boulton, 2003a). There is already a growing body of work that describes programs

such as this as social emotional learning (SEL) and an increasing evidence-base suggests that these types of programs should be included in school curriculum. There is also evidence that classroom teachers can effectively implement these strategies (rather than specialised professionals), highlighting the need for teachers to receive specialised professional developmental pertaining to social skills development for children (Davies & Cooper, 2013).

Implications for Social Identification with the School

The research findings on the meaningful role of social identification have implications for both research into bullying and for practice within schools. In particular, the results of the current research program provide support for the translation of the social identity framework to schools (Reynolds et al., 2007), and suggest that individual bullying behaviour is also related to the extent that students feel a psychological connection to the school as a group member. That is, while much previous research has defined and measured students' connection (belonging, engagement, bonding, etc.) to the school as an individual psychological process that occurs within the school (Blum, 2005; Giovazolias, Kourkoutas, Mitsopoulou, & Georgiadi, 2010; Harel-Fisch et al., 2011; Wingspread declaration on school connections, 2004), the current findings suggest that it may also be related to group psychology and students' self-definition as a group member in the school.

For researchers, this highlights the notion that individual bullying behaviour can be conceptualized as a group process (Duffy & Nesdale, 2009; Jones et al., 2008; Nesdale et al., 2008; Ojala & Nesdale, 2004; Perkins et al., 2011). Individual outcomes and behaviours are not only related to the psychology of individuals but also the social psychological process of defining oneself as belonging within a group (i.e. "we" rather than "I").

There are also potential research implications for measuring and understanding the constructs of school connectedness and school belonging in general. For example, if it is the case that conceptually there is overlap with school identification then mounting research, including that provided in the current research program, provides support for the notion that factors such as school connectedness and belonging need to be understood as important and separate constructs to school climate (Bizumic et al., 2009; Reynolds et al., 2015; Turner et al., 2014, 2015; Wilson, 2004).

However, more complicated than this is the conceptual overlap between school connectedness, belonging and bonding and school identification. It is theoretically plausible that students can experience an individual psychological connection to the school as well as experiencing significant and meaningful social psychological group membership. Additional research to understand the relationship between school connectedness and school identification more formally may be helpful. There is growing research that suggests that identification may be a multidimensional construct, and perhaps a multi-component measure of identification may be a means of shedding light on the relationship between school identification and connectedness (Cameron, 2004; Leach et al., 2008). Nonetheless, what is important is that, whether student identification is similar or distinct from school connectedness, one's self-definition as a school member was significantly related to students' bullying outcomes and, at least in part, helped explain how group support impacts on bullying behaviour.

Finally, at a practical level, this research suggests value in addressing bullying and victimization through programs that serve to clarify the norms of the school community or group with respect to bullying as well as building a psychological connection to the community. In other words, reducing school-based bullying needs to focus on building a sense of social identification (i.e. "we" rather than "I") with the

group (i.e. the school) in addition to establishing clear anti-bullying norms (often prescribed by the school climate).

Along these lines, one common intervention of the larger ongoing research project (e.g. Reynolds et al., 2007) across the four target schools between Phase 1 and subsequent phases involved the use of the ASPIRe process to clarify and consensualize the defining features of the school community – who ‘we’ are and what ‘we’ do as a school (based on the Ascertaining Social Personal Identity Resources or ASPIRe model; Haslam, Eggin, & Reynolds, 2003). In order to build agreement and shared understanding of “us” as members of the school; staff, students, parents and community members (as subgroups) were involved in a process where the vision, purpose, and ideal behaviours for staff and students and the key characteristics students should develop while at the school (i.e. knowledge, character) and within a particular school were identified.

Once this information was gathered, each of the groups within the school was invited to provide feedback on the beliefs, behaviours, and characteristics they wanted to prioritize within their school. The feedback was integrated into a mission statement that defined the shared purpose and behavioural expectations of the school. A range of school activities and functions were also reformed in line with the shared mission (e.g., professional development, codifying shared practices, celebration of achievements, and championing individuals who exemplify the school’s mission). This process was designed to ensure procedural fairness and voice amongst meaningful sub-groups that make up school life, increase ownership of decisions and ensure all members of the school community see themselves as respected and valued group members (e.g. Tyler & Blader, 2000).

In another example, it is also possible to emphasize the values and beliefs that define a school community and build a connection between school members through a school-wide positive behavioural intervention and support (SWPBIS) program (Luiselli, Putnam, & Handler, 2005). The underlying premise of SWPBIS is to implement “positive behavioural interventions and systems to achieve socially important behaviour change” (Sugai et al., 2000, p. 133). Traditionally, positive behaviour support plans were developed for individual students, but more recently there has been support for the application of practices that target the whole school population (Horner & Sugai, 2000).

A critical component of SWPBIS is setting consensus-driven, specific behavioural expectations for students. That is, positive behaviour support programs are based on defining, for the group, what to do rather than what not to do (Horner & Sugai, 2000). Therefore, this form of intervention has the ability to clarify and strengthen the meaningful role of the group by identifying and defining what “we” do and how “we” treat each other. Once behavioural expectations, or the norms and values of the school members have been defined, a positive behavioural reinforcement system focused on reinforcing behaviours that demonstrate the values, attitudes and norms of the school group can be implemented.

In a rare school-wide example of this, Luiselli et al. (2005) designed a token reinforcement system, whereby teachers and administrators issued slips ('Caught in the act') to students demonstrating desirable behaviours including adhering to school rules and expectations, interacting cooperatively with peers, participating in appropriate conflict resolution practices, making academic progress, and showing exemplary classroom behaviours. Students who earned slips then became eligible for a weekly or monthly lottery, and students whose slips were drawn could receive school privileges or tangible prizes such as movie vouchers. Over several years of consultation and

implementation, the researchers found that student discipline problems decreased and academic performance improved using the SWPBIS approach (Luiselli et al., 2005).

In a recent experimental study, Bradshaw, Waasdorp, and Leaf (2012), compared schools trained in SWPBIS to those without (37 schools in total) in order to establish whether improvements in the school environment and school practices actually translated into reductions in bullying and peer rejection. The researchers found that there was less teacher-reported involvement in bullying, as a victim or bully. There was also a significant positive impact on general social-emotional functioning, and pro-social behaviour in the schools using SWPBIS. In sum, the social identity perspective provides a different lens through which to understand students within the school environment and understanding school-based bullying from this perspective opens new pathways for addressing bullying behaviour, not on the basis of individual or interpersonal factors, but through building on group processes.

Strengths and Limitations of Study One: A Latent Growth Model Study of Bullying Perpetration and Peer Victimization

Particular strengths and limitations for each of the studies are recapitulated first, followed by a number of general strengths and limitations in the following section. This longitudinal work adds value to our understanding of school-based bullying behaviour by not only assessing individual well-being and a supportive school climate, but measuring two different sub-factors of school climate – academic support and group support – as well as a measure of school social identification. A major strength of Latent Growth Modelling (LGM), as a random effects model, is the ability to analyse longitudinal change when individuals within the school substantially differ (MacKinnon, 2008).

However, in terms of limitations, the attrition analysis suggested that there may have been a sampling bias towards students who were less likely to be involved in challenging behaviours and more likely to have positive perceptions of school climate, school identification, and individual well-being. Therefore, it is important to acknowledge that the findings may not be applicable to those students who exhibit more extreme problem behaviours. Relying on attendance at school on a given day as the basis for data collection in a longitudinal design means it is more likely that those students with lower attendance rates will be missed. If low attendance is related to other variables of interest (e.g., engagement, school climate, achievement, bullying, depression), then there is a risk that the sample will not be representative of the student population as a whole. Other methods of data collection may need to be considered to examine students with low attendance rates, such as conducting focus groups.

A larger sample would have also meant that all the predictor variables could have been included in the same LGM to account for shared variance between the variables. One of the major strengths of this study was the analysis of count variables using negative binomial regression rather than dichotomizing students in ‘bullies’ or ‘victims’. However, the consequence of this was that the computational demand meant that no more than one predictor could be included in the same LGM. Indeed, these models were attempted and did not compute. These issues represent opportunities for further research.

Finally, while the focus of this study was on bullying perpetration and peer victimization as the outcome variable of interest. It is acknowledged that a supplementary analysis suggested a reciprocal relationship for victimization, such that change in anxiety, depression and group support was also affected by change in victimization. There was no evidence to support reciprocal relationships for bullying

perpetration. These reciprocal relationships between victimization and well-being are consistent with Hodges and Perry's (1999) notion that victims fall into a "vicious cycle", whereby internalizing problems lead to the onset of being victimized *and* initial victimization contributes uniquely to later internalizing problems.

With respect to school climate (group support), there is little longitudinal work that can be used to make sense of how repeated exposure to victimization may impact on an individual's perception of their school's climate over time. For example, one study found that children with internalizing or externalizing problems did not merely evaluate the school more negatively (Kuperminc et al., 2001). The authors argued that this relationship is complex, and additional research is needed to understand factors that impact on individual differences in perceptions of school climate. Nonetheless, Kuperminc et al. (2001) suggested that even students with emotional and behavioural problems can perceive a positive school climate and should, therefore, be able to benefit from interventions that aim to improve the school environment.

Strengths and Limitations of Study Two: A Mediation Study of a Supportive School Climate, School Identification and Student Well-being

The innovative and important aspects of the second study include the analysis of school identification as a construct that may help explain how or why a supportive school climate impacts on individual behaviour. While previous research has begun to establish a distinction between connectedness (belonging, engagement, etc.) and school climate, this study is one of the few research examples to provide a possible theoretical explanation of the mechanism or process through which these school environment variables operate with regard to bullying behaviour. This was done in a study that also considered two factors of school climate and accounted for individual well-being.

Despite its strengths, this study could not draw conclusions about causality due

to its cross-sectional nature. Indeed, counter to the supplementary analysis in study one, which demonstrated no reciprocal relationship for bullying perpetration, the supplementary analysis conducted in this study supported the idea that physical and verbal bullying perpetration also acts as a precursor to poor well-being. Therefore, the possible reciprocity of this relationship needs to be considered in understanding the high levels of internalizing problems reported by this population. Still, of note was the fact that depression or anxiety showed stronger standardized coefficients when analysed as a precursor to bullying behaviour than when analysed as an outcome variable. This finding again points to the importance of having access to evidence-based mental health programs in schools as part of a comprehensive preventative intervention program.

In addition, while the testing of reverse models in the supplementary analysis identified the possible reciprocal relationship between well-being and bullying behaviour, other mediation models may also be possible. For example, it is possible that a student who is depressed or anxious is less likely to feel sense of identification with the school, in turn, making them more likely to bully others (Loukas et al., 2012). To test for this relationship future research could consider a model in which well-being (rather than school climate) is mediated by school identification. Similarly, to date there is no empirical research that has identified whether perceptions of school climate could also mediate students' sense of identification with their school. Clearly these alternative mediation models are beyond the scope of the current research program. But future research that considers the complexity of these relationships is still needed before we can truly achieve a strong theoretical understanding of the impact of the school environment on individual students.

Finally, the discrepancy found between the two studies in regard to the role of the two supportive climate sub-factors suggests ongoing utility in investigating different

factors of a supportive school climate. In particular, work is needed to understand how (i.e. through what psychological mechanism) a meaningful and supportive academic environment discourages students from participating in bullying perpetration. Along these lines, the inclusion of more specific measures concerning quality relationships with teachers may be informative in better understanding the impact of academic support in reducing school problems such as bullying (e.g. Konishi et al., 2010; Liu & Lu, 2011; Loukas et al., 2006). In fact student-teacher relations often comprises a sub-factor of school climate so expanding the measure of school climate in future work may well assist in better understanding the findings in regard to academic support. It could also assist in understanding what teacher attributes or teaching methods are important in creating meaningful student-teacher relationships and, in turn, supporting students to engage in meaningful academic work.

Strengths, Limitations and Future Directions of the Research Program

A major strength of the current research program design was the analysis of bullying perpetration and peer victimization as count variables. Many researchers dichotomize their results into students involved or uninvolved in bullying by determining an arbitrary cut off (e.g. all students who indicate three incidents or more in the last week are defined as bullies). By upholding their original form as count variables and incorporating statistical precision with the addition of a zero-inflated model (in study two; Atkins, Baldwin, Zheng, Gallop, & Neighbors, 2012; Cox, West, & Aiken, 2009), this research was able to provide an understanding of these relationships based on the rate of bullying perpetration and peer victimization as well as students uninvolved in bullying behaviour.

Regarding limitations of the current research program, the nested nature of the data needs to be considered. It is recognized that multi-level modelling or the cluster

option for complex survey data analysis in Mplus may be viewed as an appropriate method of analysis for examining school-level variables, given that students within one school may be more similar than students from another school. However, the number of participating schools was only four, which is insufficient for multi-level analysis and the cluster option for complex survey data analysis (Asparouhov & Muthén, 2005; Muthén & Satorra, 1995; Stapleton, 2006). The current uni-level modelling of the nested student data means the findings should be interpreted with caution. It is possible that the dependency in the data has heightened the risk of making a Type I error (Thomas & Heck, 2001).

The use of a secondary existing data set (i.e. the use of data from an ongoing longitudinal research project) also needs to be considered in discussing the strengths and limitations of the current research program.¹⁰ For example, a major strength of using ongoing longitudinal data was that it allowed this research program to conduct analyses on a participant sample that would not otherwise have been feasible within a three-year clinical program. In particular, the use of this data set allowed for the analysis of change in bullying and victimization over three years. Moreover, the large sample of students within the cross-sectional study allowed complex models (that would not have terminated with a smaller sample) to be completed.

However, the use of an existing data set also provides the opportunity to discuss changes or additional measures that could be considered when measuring similar variables in future research. Along these lines, despite the widespread prevalence of bullying and an increasing field of literature aimed at understanding the problem, the measurement of bullying has remained challenging due to a lack of agreement on how

¹⁰ The current author participated in data collection for phases of the project that are included in this research program as well as data that will be used in future research manuscripts, thereby gaining understanding and valuable experience in the data collection process.

best to measure bullying behaviours (Vessey, Strout, DiFazio, & Walker, 2014). The measurement tool available to assess bullying perpetration and peer victimization in the current research program had a number of strengths. In particular, this scale assessed specific behaviours without labelling participants as “bullies” or “victims”. It has been argued that this form of questioning reduces stigma associated with being a bully or victim and, therefore, may yield more realistic estimates of bullying behaviours (Crothers & Levinson, 2004; Cullingford & Morrison, 1995; Orpinas & Horne, 2006). The psychometric properties of this scale, including test re-test reliability, also mean that this measure has been supported for use in longitudinal research designs (Orpinas & Frankowski, 2001). Moreover, as already noted, this measurement tool made it possible to quantify behaviours based on severity rather than dichotomizing students into bullies or victims based on an arbitrary number (e.g. such as only considering students who engage in 4 or more incidents as bullies).

It is also the case that there are a number of limitations of this measurement tool. In particular, this measure only assessed physical and verbal bullying behaviour. Yet other modes of attack such as relational or cyber bullying have been identified (Bauman & Del Rio, 2006). Other elements of bullying behaviour such as the perception of a power imbalance were also not assessed in the current measure of bullying perpetration and peer victimization (Olweus, 1993). Future research would benefit from including additional modes and elements of bullying behaviour in order to identify whether similar relationships between variables also hold for these types of bullying. However, establishing the most effective way of measuring bullying behaviour is not simple and ongoing research is needed to determine whether factors such as the use of the word “bully” significantly impact on student reports of bullying behaviour (Crothers & Levinson, 2004; Vessey et al., 2014).

Debate surrounding the use of self-report measures when assessing bullying and victimization also needs to be highlighted. As already outlined, there is huge variability in the way measures of bullying and victimization are operationalized and this is partly due to the fact that bullies and victims may underreport their involvement in school-based bullying for fear of getting in trouble or the stigma associated with being victimized (Berger, 2007). An alternative to managing this dilemma, which was not available within the current research design, is the use of peer-report measures. In the case of peer-report measures, researchers ask classmates to identify the “bullies” and “victims” within their school. However, research has indicated that peer-reports are not necessarily superior to self-report measures (Solberg & Olweus, 2003). Ideally this research would be replicated using a multi-informant research strategy (Pellegrini, 2001a), whereby several data collection methods are used to truly identify those children involved in bullying perpetration and peer victimization.

Other general measurement issues should also be noted. Depression and anxiety are the two most widely considered mental health or well-being variables when measuring bullying and victimization. However, other internalizing problems such as low self-esteem and suicidality (for which measures were not available in the current data set) have also been indicated as correlates of bullying behaviour in some research (Carney & Merrell, 2001; Salmon et al., 1998). Because suicidality and low self-worth are core elements of depression, it is possible that children with these symptoms were captured in the current measure of depression. Nonetheless it needs to be acknowledged that other correlates of well-being have been implicated in understanding bullying behaviour, and further investigation of these specific constructs in future research could help tailor school-based mental health promotion programs.

Along the same lines, there is also a field of literature that looks at externalizing mental health problems such as anger, conduct problems and criminality (Kim et al., 2006; Sourander et al., 2007a). Research suggests that these externalizing behaviours could be particularly relevant for bullies, who may experience both internalizing and externalizing problems (Menesini et al., 2009). The current research program highlights that bullies certainly report internalizing symptoms as well as victims, and that these symptoms uniquely impact on involvement in bullying perpetration and peer victimization even after accounting for the school social environment. However, because externalizing behaviour problems were not measured, the current research program cannot comment on whether these children would also benefit from complimentary evidence-based intervention strategies for externalizing behaviours. Future research would benefit from the inclusion of both internalizing and externalizing mental health measures to further direct the development of specific mental health skill building programs for bullies and victims.

In addition, the measure of depression and anxiety used in the current study, the Mental Health Inventory (Veit & Ware, 1983), is designed to screen the mental health of nonclinical samples. The use of subclinical indicators of depression or anxiety is common (e.g. Kaltiala-Heino et al., 2000; Roland, 2002a; Salmon et al., 1998) and entirely appropriate for the current nonclinical sample. However, other studies have also demonstrated these relationships using clinical measures such as the Beck Depression Inventory (e.g. Haavisto et al., 2004; Klomek et al., 2007; Seals & Young, 2003). Therefore, while there is extensive reliability and validity information available for the use of the MHI with adolescents (Heubeck & Neill, 2000), it may better represent signs of psychopathology pertaining to depression and anxiety rather than clinical diagnoses. Future research could consider using additional clinical measures or semi-structured

interviews with trained psychologists to determine whether bullying and victimization is reliably associated with clinical levels of psychopathology.

Finally, a number of school climate measures were included in the current data set, and the sub-factors chosen were based on existing research that has measured the academic or social-emotional aspects of the school environment in understanding bullying behaviour (Gendron et al., 2011; Harel-Fisch et al., 2011; Hemphill et al., 2012; Reis et al., 2007). The results of the current research program suggest utility in measuring sub-factors of school climate in order to identify specific targets for intervention. However, it is also important to note that many other factors, such as procedural and rule processes or parental involvement, have also been identified as significant in understanding bullying behaviour using global school climate constructs (Bibou-Nakou et al., 2012; Kasen et al., 2004; Lee & Song, 2012; Waasdorp et al., 2012). Taken together, future research should consider assessing other school climate factors as separate sub-factors within the one research design to further enhance our understanding of the elements of school climate that are critical to school-based bullying.

Conclusions

Overall, the results of this program of study highlight that both individual and group psychology are important in explaining behaviours, including bullying. The research also shows how new insights can be gained through cross-disciplinary work that draws on education, clinical, and social psychology. In relation to providing information that may be helpful to school principals and staff, it was found that the supportive school climate and school identification factors often were more strongly related to bullying behaviour than well-being measures. What this means is that addressing bullying and victimization through providing stronger student experiences of

academic and group support or building a sense of identification at school is likely to be impactful as well as providing individual counselling services. Having an eye to the social environment can go a long way in preventing bullying and, unlike individually-based interventions, such approaches are likely to benefit *all* members of the school making the learning experience a more positive one.

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Appendix 1 Research Practicum

**Managing Emotions and Managing Others: A Brief Pilot Group Intervention for
Managing Teasing and Bullying for Children with Autism Spectrum Disorder**

Preamble

The Research Practicum component of the Doctor of Psychology (Clinical) entails that the candidate will conduct applied research during one of their clinical placements that is demonstrably related to their main research thesis topic. This research practicum component is in addition to the requirements of the research thesis. Thus, the formal research report that is produced regarding the research practicum is incorporated as an appendix in the final submitted dissertation.

Examples of work that would be deemed appropriate for a research practicum include: refining and evaluating an intervention using a case series design; examining the sensitivity of an assessment tool to detect treatment change; or evaluating an intervention program instituted by an agency for a problem area relevant to the student's thesis research. The pilot group intervention outlined in the next section was deemed to be an adequate and appropriate research practicum by the Australian National University Research School of Psychology clinical committee in June 2014.

Abstract

Research suggests children and adolescents with Autism Spectrum Disorder (ASD) are victimized more often than typically developing peers. This pilot study focuses on the design and evaluation of a brief group-based intervention for children with ASD who have experienced peer victimization at school. The group program aimed to teach children to understand and manage teasing and bullying and build general emotion regulation skills. Five 9–12 year-old children participated in the 3-week pilot group. Parents attended the final 15-20 minutes of each session to receive information and handouts on the skills their child had been taught that session. Dropouts and missed group sessions meant that only two children completed all three group sessions. From pre- to post-treatment, these two children showed no significant change on reported emotional problems, pro-social behaviour, social threat thoughts or reported victimization. However, both children described the group as a) helpful and, b) that they would recommend it to a friend who was being bullied. While this study highlights some of the practical difficulties of conducting group research with children, participant feedback on the intervention was encouraging. Future studies with additional participants and control groups are needed to make conclusions about its efficacy.

Introduction

Being a victim of teasing or bullying is a common problem for children and adolescents during their school life. Prevalence estimates of bullying and victimization in Australia have indicated that up to 20% of children will be exposed to bullying behaviour during their schooling (Aluede, Adeleke, Omoike, & Afen-Akpaída, 2008). Often referred to as the pioneering researcher in the field, Olweus (1993, p.318), defined bullying behaviour as: “a student is being bullied or victimized when he or she is exposed repeatedly and over time, to negative actions on the part of one or more other students”. These negative actions are thought to be intentional, with the aim of inflicting physical or psychological harm or discomfort upon another (Borg, 1998).

A large amount of research has focused on children and adolescents attending mainstream or general education settings. These studies have highlighted the need for prevention and intervention work due to the increased rates of depression, anxiety, low self-esteem, and even suicidality associated with bullying perpetration and peer victimization (Kaltiala-Heino, Rimpelä, Marttunen, Rimpelä, & Rantanen, 1999; Klomek, Marrocco, Kleinman, Schonfeld, & Gould, 2007; Roland, 2002a; Salmon, James, & Smith, 1998; Seals & Young, 2003; Ttofi & Farrington, 2012).

As a consequence of these outcomes, much research has attempted to understand risk factors or causes of school-based bullying and victimization that can be targeted in intervention and prevention work. Many researchers have focused on distal and contextual factors such as the school environment. Along these lines, research demonstrates that children who have a more positive perception of their school climate and a strong sense of connectedness or belonging to their school are less likely to be involved in bullying perpetration or peer victimization (Kasen, Berenson, Cohen, & Johnson, 2004; Turner, Reynolds, Lee, Subasic, & Bromhead, 2014, 2015; Wilson, 2004).

Others have measured proximal characteristics of the individual such as behaviours exhibited by the child that may contribute to victimization from peers (Fox & Boulton, 2003). Fortunately, with more than a decade of research into school-based bullying, and greater public awareness of the detrimental consequences of bullying and victimization, a number of intervention programs have been developed for children who have experienced teasing and bullying.

However, there has been less work done to create group-based intervention programs for victimized students with special needs such as Autism Spectrum Disorder (ASD), who may be at greater risk of victimization in mainstream school settings (van Roekel, Scholte, & Didden, 2010). Research that supports the design of intervention programs targeted at working with the victim is outlined in the next session. Several current intervention programs for children with ASD are then summarized before providing a rationale for the current pilot intervention.

Interventions for Victims

Most intervention programs to date are based on the notion that the behaviour of the victim in some way contributes to his or her victimization. That is, there are characteristics of individuals or ways of responding to bullying behaviour, that can increase the likelihood that a child will continue to be victimized (Perry, Willard, & Perry, 1990; Schwarts, McFadyen-Ketchum, Dodge, Pettit, & Bates, 1999). Thus, if victimized children can change how they behave towards the bully (i.e. improve their interpersonal and coping skills), this will lead to a reduction in recurrent victimization.

Along these lines, non-verbal behaviours that imply concern or fear can reinforce or reward bullying behaviour (Hodges & Perry, 1999; Ross, 1996). Therefore, research suggests that by adopting a relaxed, confident stance, a child is less likely to be perceived as an 'easy target' (Fekkes, Pijpers, & Verloove-Vanhorick, 2005; Perry et al., 1990). Others have suggested that assertive responses should be encouraged over

aggressive responses such as fighting back. This is based on research that has demonstrated that aggressive responses to bullying can actually result in continued and more stable victimization over time (Kochenderfer & Ladd, 1997; Salmivalli, Karhunen, & Lagerspetz, 1996). Additionally, it has been recognized that socially accepted children commonly employ humour and assertion to manage incidences of teasing (Perry et al., 1990). Therefore, a child who is repetitively being victimized may benefit from instruction on how to employ an assertive and unaffected stance.

Based on this research, a range of programs for victims of bullying have been developed (for review of intervention programs for victims see; Fox & Boulton, 2003). Most of these programs focus on teaching the victim to engage in behaviours that are 'non-rewarding' to the bully. Typically, this involves behavioural rehearsal of verbal and non-verbal strategies (e.g. shrugging shoulders, rolling eyes) that demonstrate that the bully does not bother the child. Additionally, children are provided with emotion regulation or arousal reduction training in order to reduce those behaviours which signal that the child is an 'easy target' (e.g. being anxious or scared).

Teasing and Bullying in a Disability Population

The idea that the way an individual responds to victimization can increase or decrease the likelihood that a child will continue to be victimized may be particularly relevant to children and adolescents with developmental disabilities such as ASD. Research suggests that peer victimization is more prevalent in children and adolescents with special needs such as, but not limited to, ASD, language impairments, and learning disabilities (Cappadocia, Weiss, & Pepler, 2012; Rose, Monda-Amaya, & Espelage, 2011; van Roekel et al., 2010). This may be related to the poorer social skills (such as poor use of non-verbal cues; Mundy, Sigman, Ungerer, & Sherman, 1986) and increased difficulty regulating emotional problems often reported by this population (Kim, Szatmari, Bryson, Streiner, & Wilson, 2000; Scarpa & Reyes, 2011; White,

Oswald, Ollendick, & Scahill, 2009). Indeed, these children have been reported to respond to teasing and bullying by becoming angry, upset, or physically aggressive (Frankel & Myatt, 2003; Perry, Kusel, & Perry, 1988; Shantz, 1986).

A number of group programs that include lessons pertaining to managing teasing and bullying have been developed for children with developmental disabilities such as ASD. For example, Children's Friendship Training (CFT; Frankel & Myatt, 2003) is a 12 week social skills training group intervention for children aged 8 to 12 years that has been found to be efficacious with a number of populations including ASD and Attention Deficit Hyperactivity Disorder (ADHD). This intervention contains two sessions focused on resisting teasing and avoiding physical fights. Similarly, PEERS, an extension of CFT for adolescents, is a 14-week program that includes two sessions focused on managing physical and verbal bullying (Laugeson & Frankel, 2010).

Both of these intervention programs are designed as broad social skills programs, targeting a range of skills including starting a conversation, exiting a conversation, appropriate use of humor, and having a get together outside of school (Frankel & Myatt, 2003; Laugeson & Frankel, 2010). While these skills are extremely important for children with social skills difficulties such as in ASD, these programs are time consuming, running for 12-14 weeks, making them inaccessible to many families with varying commitments. Whereas, when treatment is brief and has a fixed end point, attendance rates have been demonstrated to be as much as 50% higher (Harvard Mental Health Letter, September 2005; 4). Moreover, many of the mainstream interventions specifically designed for the victims of bullying involve emotional regulation skills training to assist them in adopting a calm and confident stance, while these social skills interventions do not focus on this area. This is although researchers have argued that deficits regulating emotions or high levels of emotional arousal could, in turn, inhibit

the ability for these children to manage appropriate social interactions (Scarpa & Reyes, 2011; Spence, 2003).

Therefore, despite a wealth of group intervention programs that exist to support children who are victimized at school, a majority of these interventions are not targeted at children with developmental disabilities such as ASD. Moreover, those programs that are designed for children with ASD often adopt a broader social skills training approach rather than focusing on specific deficits that impact on the maintenance of bullying, such as emotional reactivity (Scarpa & Reyes, 2011).

The Current Study

A Group Intervention for Managing Teasing and Bullying for Children with ASD

The current pilot study focused on the design and evaluation of a brief group-based intervention for children with ASD who have experienced peer victimization at school. The intervention consisted of a 3-week (1.5 hour sessions) group program aimed at understanding and managing bullying, building general emotion regulation skills, and increasing awareness of ways to develop school connectedness.

This pilot group was conducted at a government-funded agency for people with developmental and intellectual disabilities. The primary objective of this pilot study was to investigate the efficacy of a short-term, targeted intervention to teach children with ASD strategies for dealing with teasing and bullying and regulating their emotions at school.

Method

Participants

The participants were 5 Australian school children (4 boys, 1 girl) ranging from 9 to 12 years old at intake with a diagnosis of ASD. Participants were all currently in late primary school, with their grades ranging from 4 to 6. In order to be eligible for the pilot study children had to be between the age of 8 and 15 years old and have a

diagnosis of a developmental disability without intellectual impairment or significant language impairment. They also needed to have experienced teasing or bullying at school.

One participant dropped out of the group after the first session while two other participants missed one or more sessions due to peripheral reasons to attending the group (e.g. broken arm, illness). Therefore, only two participants attended the program in its entirety and only their survey responses and comments about the group over time are reported.

Measures and Procedures

Eligibility for the group was determined by a brief phone interview with the parents of children on the waiting list for individual psychology intervention at a government-funded agency for children with developmental and intellectual disabilities. Any children who reported incidents of teasing, bullying or general difficulties at school on their psychology waitlist form were contacted to assess their eligibility and interest in attending the group.

Attending the group involved three 1.5 hour group appointments at a local government-funded agency. Participants and their parents were asked to provide written informed consent prior to the participants completing a survey about their experiences of teasing and bullying, general peer relations and their general emotional well-being. They were asked to complete this survey three times over the course of the intervention, 1) prior to commencing the intervention group, 2) at the end of the final group session, and 3) one month after completing the intervention group. The first two phases of data collection took place during scheduled time in the intervention therapy room so that

assessors could answer any questions as required¹¹. Children were encouraged to write general comments at the end of their post- and- follow-up surveys, however the following specific measures were also included:

A 10-item *victimization scale* was used to assess the frequency of core physical and verbal aggressive behaviours involved in school bullying based on Orpinas and Frankowski (2001; e.g. “A student teased me to make me angry”, “A student pushed or shoved me”).

The *emotional problems scale* items were taken from the Strengths and Difficulties Questionnaire (SDQ, self report; Goodman, 2001) in order to assess participants’ emotional problems. The scale consisted of 6 items including “I worry a lot”, and “I get very angry and often lose my temper”.

The *pro-social behaviour scale* items were taken from The Peer Relations Questionnaire (PRQ) For Children (Rigby & Slee, 1993) in order to assess participants’ general pro-social behaviour. Four items were included, such as “I like to help if people are being harassed” and “I like to make friends”.

The *social threat thoughts scale*, a scale designed to assess children’s automatic thoughts related to fear or threat in social situations, was taken from the Children’s Automatic Thoughts Scale – Negative/Positive (CATS-N/P; Schniering & Lyneham, 2007; Schniering & Rapee, 2002). Consisting of 10 items, questions included “I’m worried that I’m going to get teased” and “I’m going to look silly”. Participants responded on a scale from 1 (*strongly disagree*) to 5 (*strongly agree*) how much they agreed with each statement related to each of the four measures.

¹¹ The study was originally designed to include an experimental and delayed-treatment control group (i.e. the delayed-treatment control group would complete surveys at the same time-points as experimental group prior to receiving any intervention). However, due to the small sample size of eligible participants it was not possible to divide participants into two groups.

Practicalities of Running the Group

Facilitators. The intervention group had two facilitators who were registered psychologists, in order to maintain the structure of the sessions and complete role-plays as required. In terms of skills, both of the facilitators were experienced in group work with children with ASD and had some background knowledge of techniques for dealing with teasing and bullying.

Group size. A review of literature suggests that a group of 3-12 individuals is appropriate for a psychological skills building intervention (Merrell & Gimpel, 1998; Spence, 1995). In larger groups, children can be reluctant to engage in discussions and it can become difficult to give children individualized attention when needed (Schneider, 2000). Likewise, if the group is too small, children do not gain the benefits of interacting and sharing experiences with other similar age peers (Fox & Boulton, 2003; Merrell & Gimpel, 1998).

Age and gender considerations. Children aged 9 to 12 years were targeted for the intervention group due to research that suggests that there should not be a significant age gap or range in developmental level between the children (Merrell & Gimpel, 1998). A larger age range could mean that children have difficulty relating to each other, particularly if some children had been in primary school while others were in high school. However, the age range chosen was also related to the specific demand of children at the government agency reporting victimization. Incidences of bullying have also been found to peak during this age range (Carney & Merrell, 2001; Eslea & Rees, 2001), therefore this program aimed to intervene when issues are first emerging for children. Male and female children were included in the same group because most children are used to attending a mixed sex school and this makes the intervention more 'real-life like', which was hoped to facilitate generalization (Fox & Boulton, 2003; Merrell & Gimpel, 1998).

Length, time, and number of sessions. Each group session ran for an hour and half in order to meet the objectives of the group (i.e. providing skills to children and feedback to parents), while not being too long so as to lose the children's interest. The number of sessions was decided based on creating a brief and, therefore, theoretically more accessible intervention for families. Research also suggests that approximately two skills should be introduced per session (Merrell & Gimpel, 1998; Goldstein et al., 1995). Therefore, a 3-week course was designed to cover the required content. Session times were scheduled for the end of the school day so that children did not miss significant portions of school.

Intervention

On the basis of previous research and a review of existing programs for children with ASD a brief group intervention for victims of bullying and teasing was developed. The program aimed to target factors that may reduce the child's 'individual risk' of victimization. On the basis of the summarized research which suggests that emotional and behavioural characteristics of the individual can reward and encourage bullying, children were taught how to recognize and respond to teasing and bullying at school using the structured skills (or rules) outlined by an existing evidence-based program for children with ASD (see Frankel & Myatt, 2003; Laugeson & Frankel, 2010). A significant component of the group was also spent teaching children basic evidence-based Cognitive Behaviour Therapy (CBT) emotion regulation strategies in order to reduce those behaviours (e.g. scared/anxious) which signal that the child is an 'easy target' (Scarpa & Reyes, 2011; Spence, 2003; Stallard, 2005).

A new and novel aspect of this intervention program was the inclusion of discussions about school, and in particular, how children can become more connected at school. This was based on research that has demonstrated a relationship between positive student connectedness or belonging at school and less peer victimization.

Specifically, participation in extracurricular school activities has been shown to be one practical way to actually facilitate a sense of connection to school (Eccles, Barber, Stone, & Hunt, 2003; McNeely, Nonnemaker, & Blum, 2002) and build positive perceptions of school climate (Darling, Caldwell, & Smith, 2005). As a result, participants were engaged in a discussion about the positive aspects of their school and how they could become more engaged in their school life. For example, by participating in additional extra-curricular activities. Discussions about the participants' schools as well as opportunities to engage in extra-curricular activities not only promotes opportunities to improve connectedness but also encourages participants to generalize their new skills within the school environment and other social settings. For an overview of the three-week program, see Table 1.

Each week participants were provided with a session outline and content was delivered in a structured and predictable way so as to reduce any anxiety participants may have had about what would happen in the group. A number of strategies were used to enhance the participants' understanding of skills including therapist modelling, participant practice, and homework setting to encourage generalization of skills (Spence, 2003). These strategies have specifically been endorsed to support learning and development of skills in children with ASD (White, Keonig, & Scahill, 2007). During the last 15-20 minutes of each session, parents were provided with an overview of the skills that had been taught and comprehensive handouts on the material discussed. This was so that parents could encourage and reinforce practice of skills learnt in the group (White et al., 2007). Handouts are also a valuable way of helping children and their parents remember content and continue to use their skills after the group has finished. A copy of the intervention manual and session handouts is included as Appendix 2.

Table 1.

An Overview of the Three-Week Skills Training Pilot Intervention

Week	Focus	Strategies and Activities
		Introduction to group and ground rules
		Complete survey
Week 1	Session One: Understanding and Responding to Teasing and Bullying	What is teasing and bullying? Steps for managing teasing: 'manage-the-tease' Role play Group rehearsal Review with parents and set homework Homework review: practicing "manage-the-tease" with parents
Week 2	Session Two: Handling Physical Bullying and Introduction to Managing Emotions	Avoiding physical fights Introduction to managing emotions Breathing relaxation Getting more involved at school Review with parents and set homework Homework review: manage-the-tease, breathing relaxation, extracurricular activities
Week 3	Session Three: What you Think Affects how you Feel, Using Green Light Thinking	What you think affects how you feel: Green light and red light thoughts Green light, red light game Example of looking for more information: Why do children get bullied? Complete surveys Review with parents, encourage continued practice and certificates

Results**Comparison of Pre-Treatment and Post-Treatment Survey Scores**

A summary of the pre-and post-treatment survey scores as well as the difference score are presented in Table 2. It was not possible to measure statistically significant change in reported emotional problems, pro-social behaviour, threat related thinking, or incidences of victimization according to the survey over the course of the three-week group due to the small sample. However, the mean difference change scores suggest a slight decrease in emotional problems, pro-social behaviour, and social threat thoughts and an increase in peer victimization over the three-week period. The direction of the relationships was consistent for both participants. The two participants that attended all three sessions also provided a number of promising comments. For example, participant one reported that "it was helpful knowing that there are other people who get bullied",

while participant two reported, “the group helped me deal with teasing”. Both participants also commented that they would recommend the group to a friend who was being teased or bullied.

Table 2.
Pre and Post Treatment Survey Scale Scores

	Pre-Treatment Mean Scores	Post-Treatment Mean Scores	Mean Difference Score
Emotional Problems	3.42	3.34	-0.08
Pro-social Behaviour	4.25	3.87	-0.38
Social Threat Thoughts	3.60	3.30	-0.30
Peer Victimization	3.50	4.05	0.55

Note. Participants responded on a scale from 1 (strongly disagree) to 5 (strongly agree) how much they agreed with each statement related to each of the four measures.

Table 3.
Post-treatment and one-month follow up survey scores

	Post-Treatment Mean Score	One-Month Follow up Mean Score	Mean Difference Score
Emotional Problems	3.34	3.41	0.07
Pro-social Behaviour	3.87	4.25	0.38
Social Threat Thoughts	3.30	3.25	-0.05
Peer Victimization	4.05	3.55	-0.50

Note. Participants responded on a scale from 1 (strongly disagree) to 5 (strongly agree) how much they agreed with each statement related to each of the four measures.

Comparison of One-Month Follow Up Survey Scores

A summary of post-treatment and one month follow up scores as well as the difference score for these time points are presented in Table 3. Again, it was not possible to measure statistically significant change in symptoms based on responses from two participants. However, the mean difference change scores from post-treatment to one-month follow-up suggest a slight increase in emotional problems and pro-social behaviour one month following the group, and a slight decrease in social threat thoughts

and self-reported peer victimization one month following the group. Again the direction of the relationships was consistent for both participants.

Discussion

The current pilot study focused on the design and outcome of a brief group-based intervention for children with ASD who have experienced peer victimization at school; including content focused on skills for understanding and responding to teasing and bullying, emotion regulation training, and discussions around building positive connections at school. Despite a range of group-based intervention programs designed to support children who are victimized at school, a majority of these interventions are not targeted at children with developmental disabilities such as ASD (e.g. Fox & Boulton, 2003; Phillips, 1989; Ross, 1996). Moreover, those programs that are designed for children with ASD often adopt a broader social skills training approach (e.g. Frankel & Myatt, 2003; Laugeson & Frankel, 2010) rather than focusing on specific deficits that may impact on the maintenance of bullying, such as emotional reactivity (Scarpa & Reyes, 2011; Spence, 2003).

Overall, despite significant dropouts, this pilot study demonstrated promising results that would encourage further research. Along these lines, participants reported that a) they found the group helpful, b) the content was relevant, and c) they would recommend the group to a friend who was experiencing teasing and bullying. In particular, one participant noted that the group context was helpful in normalizing their experience of teasing and bullying.

Additionally, at one month follow-up one parent reported that their child had been “going much better using the skills [they] learnt in MEMO”, and that the skills taught to the group were “very effective and could be rolled out across a wider group”. Therefore, while prior empirical studies have focused on the use of social skills training in group formats for children with ASD, the current participant feedback suggests that

this population would also benefit from complementary emotion regulation skills training in the context of learning how to manage teasing and bullying at school.

Nonetheless, the findings are limited by the small sample size and variability in attendance rates. Dropouts or loss of clients poses a significant problem in the evaluation and delivery of children's psychology services (Howard, Krause, & Orlinsky, 1986). Literature suggests that, on average, 28% to 59% of children and families will drop out of therapy programs (Gould, Shaffer, & Kaplan, 1985; Wierzbicki & Pekarik, 1993). While this program was designed with the intention of being more accessible (i.e. only a three week commitment), additional factors to support group completion need to be considered in future designs. For example, encouraging schools to promote and run mental health and psychological skill building groups within school hours, or at least within the school grounds may make it even easier for children to attend. Indeed, it has been advocated that the use of preventative mental health care groups such as this intervention should be delivered within the school system (Berkovitz, 1989).

In conclusion, this pilot study focused on the design and evaluation of a brief group-based intervention for children with ASD who have experienced peer victimization at school at a local government funded agency. Despite significant dropouts, the remaining participants provided encouraging feedback regarding the utility of attending the group. The intervention would need to be replicated with a larger sample that could include a control group. A larger sample would also mean that more sophisticated measures and analyses could be included in order to control for initial group differences. In order to make recommendations regarding the efficacy of this brief pilot intervention for children with ASD who have experienced peer victimization additional research trials are needed.

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Appendix 2

Research Practicum Manual and Resources

MEMO: Managing Emotions and Managing Others

MEMO: Managing Emotions and Managing Others

Group Intervention Program Outline

Session One (pp.217 – 224):

- Introduction to group and ground rules (10 mins)
- Complete survey (10 mins)
- What is teasing and bullying? (15 mins)
- Steps for managing teasing: ‘manage-the-tease’ (15 mins)
- Role play (5 mins)
- Group rehearsal (15 mins)
- Review with parents and set homework (15 mins)

Session Two (pp.225 - 233):

- Homework review: practising “manage-the-tease” with parents (15 mins)
- Avoiding physical fights (10 mins)
- Introduction to managing emotions (15 mins)
- Breathing relaxation (15 mins)
- Getting more involved at school (10 mins)
- Review with parents and set homework (manage-the-tease, breathing relaxation, think about extracurricular activities, 15 mins)

Session Three (pp.234 - 239):

- Homework review: manage-the-tease, breathing relaxation, extracurricular activities (15 mins)
- What you think, affects how you feel: Green light and red light thoughts (20 mins)
- Green light, red light game (10 mins)
- Example of looking for more information: Why do children get bullied? (10 mins)
- Complete surveys (10 mins)
- Review with parents, encourage continued practice and hand out certificates (15 mins)

Session One: Understanding and Responding to Teasing and Bullying

→ Introduction to group and group rules (10 mins)

- Welcome everyone
- Introduce yourself and other facilitator
- Go around the room and have each child say
 - o Their name
 - o Their age and grade
 - o Something they are good at
 - o Two things they like about their school
- Explain: *There are rules for the group to ensure that everyone can participate, listen to each other, and enjoy attending the group* (write rules on board)
 - o *No talking when others are talking - listen to others*
 - o *Follow instructions given by the facilitators*
 - o *Raise your hand if you have something to say*
 - o *Be respectful of others in the group (i.e. no swearing or making mean comments)*
 - o *No touching (i.e. not hitting, kicking, pushing, hugging, etc.).*

→ Complete survey (10mins)

- o Handout participant information sheets and explains confidentiality. Make sure all children understand participation is voluntary before signing consent form.
- o Explain: *First thing I would like you all to do is complete a survey. We are interested in knowing what you think about school, teasing and bullying, and coping with emotions in general. You just need to circle how much you agree with each statement from 1 (disagree strongly) to 5 (agree strongly). If you need any help just put up your hand and one of us will come over.*

→ Explanation of the group and structure of sessions, say:

- o *This group is called MEMO, which is short for Managing Emotions and Managing Others (write on board with first letter of each word underlined), and that's exactly what this group is for.*
- o *We will be meeting at the same time for three weeks (including today) and we will be talking about and practicing ways of managing how we cope with other children at school and how we can manage our emotions in stressful or worrying situations, like when another child is teasing us.*
- o *In each session we will talk about new strategies and we will then practice them as a group. At the end of each session your parents will come into the room so we can tell them about what we did and then we will talk to you about practicing*

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your new strategies during the week. At the beginning of each session we will check in to see if you have been practicing your new skills.

- *You will all also have an action plan sitting on your desk (see p. 240). At different times throughout the sessions I will ask you to complete sections of this plan. The aim of this plan is that at the end of the three weeks you will have a personalised plan to remind you of some of the positives at school, what strategies you can use to cope with others and cope with emotions, and who you can go to for help. Right now I would just like you all to write at least two things you like about your school – it can be the two things you told the rest of the group. If you need help writing your answers raise your hand and one of us will help you.*

→ What is teasing and bullying? (15 mins)

- Explain:
 - *One of the main things we are going to be talking about in MEMO is how to manage when other children are teasing or bullying us. Before we can learn how to respond, we need to make sure we know when someone is teasing or bullying us and when they're not.*
 - *I would like to get ideas from you about what is teasing or bullying. We are not going to talk about specific mean things people have said or done to us, or how we feel about it. We all know that being teased or bullied is upsetting. Can you give me more general ideas about what behaviours mean someone is being teased or bullied?*
- Get ideas from group, some suggestions include:
 - Verbal (most common, most painful, and longest lasting impact - name calling, insults)
 - Threats
 - Physical (Punching, tripping, kicking)
 - Cyber instigated
 - Anti-social (Being left out, ignored, having rumours spread about you, non-verbal body language, gossip, belongings stolen or damaged)
 - Taking advantage of them (steal their homework, make them do things for them)
- Points to make to the group:
 - *We think of teasing as verbal attacks from peers that don't involve physical violence*
 - *Bullying can be quite obvious and aggressive (like kicking someone) or it can be subtle (like leaving someone out).*
 - *Most children have either been bullied, bully others or witnessed bullying at school.*

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- *Anyone can be bullied – it's a lot more common than people think.*
- *More than one in five children are bullied regularly at school*
- *It is not bullying when it only happens once, or it is an accident. For example, if another child accidentally knocks your bag over once is this bullying?*

→ Steps for managing teasing (15 mins)

- *Explain: Now that we understand what teasing and bullying are, we need to learn what we can do in situations where we are being teased. One thing that impacts on whether we are likely to be teased is how we react when someone is teasing us. Today we are going to learn how to make the teasing less fun for the teaser. You can do this by acting like what the person said didn't bother you or was kind of lame. We call this manage-the-tease, because you are going to learn to make fun of what the other person said. Importantly, we are not suggesting you tease the other person because this is likely to make the situation worse. You are going to tease what they said. Before we practice using manage-the-tease we need to know the rules for using it.¹²*
- *Present rules for manage-the-tease;*
 1. *The main thing you need to do is act like what they said didn't bother you. Even if what they said hurt your feelings you need to pretend that it didn't.*
 - a. *For girls – have an attitude – act like what they said was stupid or meaningless. For example, you could role your eyes.*
 - b. *For boys – act like you don't care – you can do this by acting like what they said was boring or uninteresting.*
 2. *The second rule is to make fun of what they said. A good way to show that what the person said didn't bother you is to act like what they said was silly or lame. Again, this does not mean you make fun of the other person because this is likely to get you into more trouble, or even worse, you might start to get a reputation as a bully.*
 3. *The best way to show that their teasing doesn't bother you is to use a brief comeback to manage-the-tease. There are three steps to using a brief comeback.*
 - a. *It has to be short – if you say too much they will think you care.*
 - b. *The comeback needs to give the impression that you don't care, and;*
 - c. *You are only making fun of what they said, not making fun of them*
 - *Say: Some examples of manage-the-tease are (write on the board);*

¹² Material and rules for manage-the-tease taken directly from Laugeson, E. A., & Frankel, F. (2010). *The peers treatment manual*. NY & London: Routledge, Taylor & Francis Group.

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- “Whatever”
 - “Anyway...”
 - “Big deal”
 - “So what”
 - “Who cares?”
 - “Yeah, and?”
 - “And your point is?”
 - “Tell me when you get to the funny part”
 - “Am I supposed to care”
 - “Is that supposed to be funny?”
 - “And why do I care?”
4. *The next rule is to do something that shows you don't care. Some examples of this would include rolling your eyes, shrugging your shoulders, or shaking your head and then walking away.*
- a. *It's always better to try and manage-the-tease, but if you find it difficult to use your words in these situations using your body language should be sufficient.*
5. *The next rule is do not stand there and wait to be teased more. Once you have managed-the-tease by showing that what they said didn't bother you, you need to casually look away and then walk away. What would be the problem with standing there and looking at the person after you've managed-the-tease?*
- Answer: *It's an invitation to keep teasing you.*
6. *Do not walk away until you have shown the teaser that what they said didn't bother you. It is very important that you show that you are not bothered before you walk away, why do you think this is?*
- Answer: *because you don't want the teaser to think you're running away because you're upset.*
7. *Do not use manage-the-tease with someone who is physically aggressive. This is because the point of manage-the-tease is that you kind of embarrass the teaser by acting like what they said was lame. How do people who are physically aggressive react to being embarrassed?*
- Answer: *people who are physically aggressive will often react to embarrassment with more aggression.*
 - Explain: *Next week we will be talking about how to handle this form of bullying. The way we handle physical aggression is very different from teasing.*

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8. *The final rule is never use manage-the-tease with parents, teachers or others adults. Why would it be a bad idea use manage-the-tease with adults?*

- Answer: *it's disrespectful and will get you into trouble.*

→ Role-play (5 mins).

- Two facilitators should demonstrate how to use manage-the-tease appropriately by following all the rules outlined above. During the role play a benign tease such as “your shoes are ugly” should be used. The same tease should be used when practicing with each child to ensure that the children do not take the comment personally.
- Example of appropriate role play;
 - Facilitator 1: “Your shoe’s are ugly!”
 - Facilitator 2: (rolls eyes) “Yeah, and?” (said with attitude, then looks away).
 - Facilitator 1: “Seriously, those are some ugly shoes!”
 - Facilitator 2: “Am I supposed to care” (shakes head, looks away).
 - Facilitator 1: “Well you should care because they are some really ugly shoes!”
 - Facilitator 2: “Whatever” (shrugs shoulders, shakes head and walks away)
- *Ok, so was the teasing fun for (insert facilitator name)?*
Answer: Not really
- *Do you think (insert facilitator name) is more or less likely to try and tease me again in the future?*
Answer: Less likely.

→ Group rehearsal (15 mins)

- Instruction for behavioural rehearsal:
 - Each child will have a turn at practicing manage-the-tease with the facilitator just like how they watched the two facilitators practice with each other.
 - This children need to pick three of the manage-the-tease comebacks from the list on the board.
 - The facilitator should use same benign comment “your shoes are ugly” for all children.
 - The facilitator will repeat the tease three times in succession (like in role play), allowing the child to practice using different manage-the-tease comebacks.

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- Give feedback to each child on their performance (i.e. “remember to also use your body language to show your not bothered”) as necessary and make sure each child can use the technique before moving around the group to the next child.

→ Review with parents and set homework (15 mins)

- Explain: *Today we talked about what is teasing and bullying and we worked on how to handle teasing. We call this manage-the-tease. The idea behind manage-the-tease is that if we can make the teasing less fun for the other person by acting like what they said didn't bother us and not giving them much of a reaction, they are less likely to tease us in the future.*
- *Importantly, manage-the-tease means teasing what the other person said, not teasing the person! Responses should be brief and simple in order to give the impression that you don't care. Can anyone give me some examples of the manage-the-tease comebacks? Hands up.*
 - Have children generate verbal and non-verbal answers based on list discussed in session. Be prepared to prompt if necessary.
 - Explain to parents that a summary of the rules for using manage-the-tease comebacks is provided in their session handout (p. 223-224).
 - Explain to the children and their parents that in order to be prepared and feel confident to use manage-the-tease they need to practice.
 - Instruct children to rehearse using manage-the-tease with their parents during the week just like they did in the role-play.
 - Explain to parents that children don't often make one comment and then stop so parents need to pick a benign comment and repeat this three times in succession, allowing the child to practice thinking on their feet and using different comebacks.
 - Explain to children that because teasing is quite common they may also have an opportunity to practice manage-the-tease on a peer at school or maybe even a sibling.
 - Tell children that they will be asked about how they went practicing manage-the-tease at the next session.

Session 1 handout: Steps for managing teasing

Today we learnt 8 rules for handling teasing. The aim of this strategy is to make the teasing less fun for the teaser so that they are less likely to want to tease you again in the future. You can do this by acting like what the person said didn't bother you or was kind of lame. We call this 'manage-the-tease' because you make fun of what the other person said. Importantly, we are not suggesting you tease the other person because this is likely to make the situation worse. You are going to tease what they said. When you practice using manage-the-tease make sure you follow the rules listed below.

Rule 1: The main thing you need to do is act like what they said didn't bother you. Even if what they said hurt your feelings you need to pretend that it didn't.

- For girls – have an attitude – act like what they said was stupid or meaningless. For example, you could role your eyes.
- For boys – act like you don't care – you can do this by acting like what they said was boring or uninteresting.

Rule 2: The second rule is to make fun of what they said. A good way to show that what the person said didn't bother you is to act like what they said was silly or lame.

- Again, this does not mean you make fun of the other person because this is likely to get you into more trouble, or even worse, you might start to get a reputation as a bully.

Rule 3: The best way to show that their teasing doesn't bother you is to use a brief comeback to manage-the-tease. There are three steps to using a brief comeback.

9. It has to be short – if you say too much they will think you care.
10. The comeback needs to give the impression that you don't care, and;
11. You are only making fun of what they said, not making fun of them

Some examples of manage-the-tease comebacks that you can practice at home are:

- "Whatever"
- "Anyway..."
- "Big deal"
- "So what"
- "Who cares?"
- "Yeah, and?"
- "And your point is?"
- "Tell me when you get to the funny part"
- "Am I supposed to care"
- "Is that supposed to be funny?"
- "And why do I care?"

Rule 4: The next rule is to do something that shows you don't care.

Some examples of this include:

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- Rolling your eyes;
- Shrugging your shoulders;
- Shaking your head;
- Looking away;
- Followed by walking away.

Note: It's always better to try and manage-the-tease, but if you find it difficult to use your words in these situations using your body language should be sufficient.

Rule 5: Do not stand there and wait to be teased more. Once you have managed-the-tease by showing that what they said didn't bother you, you need to casually look away and then walk away. If you just keep standing there, it might look like an invitation to keep teasing you.

Rule 6: Do not walk away until you have shown the teaser that what they said didn't bother you. It is very important that you show that you are not bothered before you walk away, because you don't want the teaser to think you're running away.

Rule 7: Do not use manage-the-tease with someone who is physically aggressive. This is because the point of manage-the-tease is that you kind of embarrass the teaser by acting like what they said was kind of lame. But people who are physically aggressive will often react to embarrassment with more aggression. [Next week we will be talking about how to handle this form of physical bullying].

Rule 8: The final rule is never use manage-the-tease with parents, teachers or other adults. It is disrespectful and will get you into trouble.

Session Two: Handling Physical Bullying and Introduction to Managing Emotions

→ Homework review: practising “manage-the-tease” with parents (10 mins)

- Review children’s use of manage-the-tease over the last week. Start by encouraging anyone who would like to tell the group about their practice to raise their hand rather than picking children.
 - Note: If children start to discuss specifics of how they were teased when using manage-the-tease, say: “we just want to focus on how you responded”.
- Get children in the group to report on:
 - How manage-the-tease was used (i.e. practice with parents, at school)
 - Troubleshoot any problems or questions that arise
 - If children did not practice manage-the-tease over the week, have them identify a couple of manage-the-tease comebacks in session.

→ Avoiding physical fights (15 mins)

- Explain: *Last week we talked about what is teasing and bullying, and we practiced one way to handle situations when we are being verbally teased by other children. This was called ‘manage-the-tease’. Today, first we are going to talk about handling physical bullying - we don't want to embarrass someone who is physically aggressive by using manage-the-tease. After that we are going to start talking about managing our emotions in difficult or stressful situations, like when we’re being bullied.*
- Present the rules for handling bullying, say: *There are five rules for handling bullying.*¹³
 1. *The first rule for handling bullying is to lay low: This means not doing anything to draw attention to yourself. If the bully is less likely to notice you then they are less likely to bully you.*
 2. *Second, you need to avoid the bully: This means you need to stay out of reach of the bully. So, for example, if you know where the bully usually plays on the playground you shouldn't go to that area.*
 - *It's also not a good idea to try and talk to the bully or make friends with the bully. It almost never works making friends with a bully and this will just draw attention to you.*

¹³ Material and rules for handling physical bullying taken directly from Laugeson, E. A., & Frankel, F. (2010). *The peers treatment manual*. NY & London: Routledge, Taylor & Francis Group.

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3. *The third rule is do not provoke the bully: This means do not use manage-the-tease with a bully who is physically aggressive because this will only make the bully more aggressive. If you're unsure of when to use manage-the-tease speak to one of us or your parents.*
 - *It's also important not to tell on the bully and try and get them into trouble for minor offenses (i.e. if they are passing notes in class) because this also draws attention to you and makes the bully likely to retaliate. You should only get involved and tell on the bully if someone is in danger of being injured. For example, if they are threatening to beat someone up.*
 - *If you need to tell on a bully, do this in private so that your peers don't know and the bully can't retaliate against you.*
4. *The next rule is to hang out with other people: This means avoid being alone at school or on the playground. This is because bullies are more likely to pick on people when they are alone and unprotected by peers (e.g. you're a more easy target).*
5. *The final and most important rule for handling bullying is if you are worried or in danger – get help from an adult: This means that if you have been physically assaulted by a bully or they have threatened to beat you up you should get help from an adult.*

Explain:

- *It can be very hard to ask for help when someone is bullying us. You might be worried that the bully will find out.*
- *Someone of you may already have ideas about who you would feel comfortable talking to. It is a good idea to think about who you could talk to at your school, whether it's the school counsellor or a particular teacher you feel comfortable with. It's also a good idea to think about who you might be able to talk to outside of school, whether it's a sport coach or your parents.*
- *I would like you to write these people down on your action plan. That way, when you are faced with a situation where you need help you will already have some ideas about who you can get support from written down. If you need help writing your answers raise your hand and one of us will help you.*

→ Introduction to managing emotions: fight or flight response (20 mins)

- *Explain: Today we are also going to start talking about how to cope with strong emotions like feeling angry, worried, or frightened. Feelings are our physical response to what we experience. In different situations we all feel different*

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emotions. Some feelings will last only a short time, others will go on and on. Some feelings are weak and you may not notice them and others are very strong and seem to take over.

- *There are lots of situations that can make people feel scared or worried – like having to give a speech in class, or trying something new. There are also situations that can make people feel angry – like breaking your favourite game, or even losing a game.*
- *Being teased or bullied can make children feel frightened or worried. Or sometimes it can make them feel angry. Both of these feelings are normal. This is because our feelings are the brain's way of telling us when we don't like something or that something might be dangerous.*
- *You see, a long time ago when humans lived in caves and had to hunt for their food, they needed to be able to protect themselves from lions and bears – so the brain developed a way of preparing the person for immediate physical action – to stand and fight the bear or to run away quickly. This is called the fight or flight response. Have any of you heard of this before?*
- *When the fight or flight system was triggered the caveman's heart beat would get faster, they would start to breathe faster, their eyes would become very alert to danger, their body might get hot, they might start sweating, their tummy might feel a bit sick because all the blood rushes to their arms and legs, and their muscles would become tense – all so they were ready to fight or run away from danger. Does anyone else notice any of those things - like your heartbeat, feeling sick in the tummy, or getting hot when you're scared or angry?*
- **Activity: Draw an outline of a body on the board and use this to brainstorm the physical symptoms that occur when the fight or flight response is triggered. Provide psychoeducation on the reasons these changes occur in the body as needed or based on participants level of understanding of the content. Physical changes include:**
 - **Increased heart beat / Breathing becomes quicker and shallower - feeds more blood and oxygen to the muscles and enhances ability to fight or run away.**
 - **Muscle tension or pain / shakiness - the muscles become tense so they are ready to fight or run away however this can make them shake or tremble.**
 - **Tight chest - Your muscles tense up as your body prepares for danger. So, your chest may feel tight or painful when you take in large breaths while the chest muscles are tense.**

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- Thoughts racing - the body's resources are being used on preparing the body to run or fight so it can be hard to focus on anything but the feeling of danger.
 - Sweating - the body sweats to keep cool, making the body a more efficient machine. It also makes the skin more slippery and difficult for an attacking animal or person to grab hold of.
 - Dry mouth / difficulty swallowing - Increased muscle tension around the neck or rapid breathing dries out the throat, which may make it feel harder to swallow.
 - Changes in vision - tunnel vision, or vision becoming 'sharper' so that you can focus on the danger.
 - Butterflies in stomach or feeling sick – the body shuts down systems that are not needed for survival; that way, it can direct energy to functions that are critical for survival. Digestion is one of the processes that isn't needed at times of danger so blood rushes away from internal organs to important muscles such as arms and legs to enhance ability to fight or run
 - Dizziness or light-headedness – the body is not getting enough oxygen due to changes in breathing (hyperventilation). Also, since most of your blood and oxygen is going to your arms and legs, there is a slight decrease of blood to the brain, which can also make you dizzy. This slight decrease in blood flow to the brain is not dangerous at all.
- Explain: *Even though we don't have to worry about lions or bears anymore, our brain still sends out the fight or flight warning when it perceives potential danger. This doesn't have to be life-threatening danger like a lion; it can also be danger that someone might hurt our feelings, for example by teasing us. So it's completely normal that we might start to feel frightened or worried when someone is bullying us – this is our flight system – or angry when someone bullies us – this is a fight system. That is, we either want to run away or defend ourselves.*
 - *Having the fight or flight system is very helpful to warn us of danger. But the problem with this warning system is that sometimes it can malfunction and send such a strong emotion signal that it becomes impossible to concentrate at school, or even be calm enough to use manage-the-tease. We've already learnt appropriate ways to respond to teasing, and we know we shouldn't fight back or retaliate, but we also need ways to manage the strong emotions that being teased or bullied can cause.*

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- *At times it is hard to manage strong emotions. It takes practice - but by learning to identify how your feeling you can then learn how to manage them.*

→ Breathing relaxation (15 mins)

- *Explain: One really simple way of learning to manage your emotion system is to practice breathing relaxation. Calm breathing is a strategy in which you concentrate on breathing slowly and at an even speed. Calm breathing can actually help you turn down your fight or flight system when it's too strong.*
- *To do slow breathing you need to slowly draw in a deep breath, for 3-4 seconds, and then very slowly let it out. As you breathe, say to yourself 'relax'. Doing this a few times will help you to regain control of your body and help you to feel calmer.*
- *The best thing about calm breathing is that you can do it anywhere, even sitting in the classroom because no one can tell that you're doing it!*
- *We are all going to practice calm breathing together now. A good way to help you work out whether you're breathing slowly and calmly enough while you're first learning to use calm breathing is to place a cotton wool ball on the tip of your fingers, hold your hand in front of your face (facilitator to demonstrate) and try to do your calm breathing without the cotton wool ball falling off your hand.*
 - Hand cotton wool balls out to children.
 - Provide verbal prompting (i.e. "slowly breath in, for 1, 2, 3, then slowly breath out, for 1, 2, 3).

→ Getting more involved at school: extracurricular activities (10 mins)

- *Explain: Today I also briefly want to talk to you about getting more involved at school. We know sometimes there are things kids might see happening at school that they are interested in but they're a bit worried about joining in. We also know that when kids are involved in extra things at school this can actually help them look forward to school more and can also help them feel more involved and included when they're at school.*
- *Getting more involved at school can mean doing lots of different things. For example, it could be putting your hand up to help with classroom jobs, or helping with an upcoming event in your class. It could also mean getting involved in extra-curricular activities like joining a chess club or a sport team.*
- *Over the next week I would like you all to think of a couple of ideas about how you could be more involved at your school and with your peers. I will ask your parents to help you come up with some ideas and next week you will be adding*

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these ideas to your action plan. You can also come and talk to me at the end of the session if you're not sure what to do.

→ Review with parents and set homework (tease-the tease, breathing relaxation, think about extracurricular activities; 15 mins)

- Explain: *Today we talked about handling physical bullying. There were five rules for handling physical bullying, can anyone put up their hand up and tell me one of the five rules?*

Answers:

- lay low: This means not doing anything to draw attention to yourself.
 - avoid the bully: for example, if you know where the bully usually plays on the playground you shouldn't go to that area.
 - do not provoke the bully: This means do not use manage-the-tease with a bully who is physically aggressive because this will only make the bully more aggressive.
 - hang out with other people: bullies are more likely to pick on people when they are alone and unprotected by peers (e.g. you're a more easy target).
 - if you are worried or in danger – get help from an adult: We discussed having safety people that we can talk to at school and outside of school.
- *We also started talking about strong emotions such as feeling angry, frightened or worried, and how these emotions can be triggered by our danger warning system – or our fight or flight system. Sometimes our fight or flight response can send such a strong emotion signal that it becomes impossible to concentrate at school, or even be calm enough to use manage-the-tease. Can anyone put up their hand and tell me what strategy we learnt today for regaining control of our body and feeling calmer when our fight or flight response gets triggered at school?*

Answer:

- **Calm breathing**: breathing in slowly, for 3-4 seconds, and then breathing out slowly at the same pace.
- *In order to be able to use calm breathing when we're experiencing a really strong emotion we need to practice. During the next week you might like to continue practicing at home by using a cotton wool ball. You might like to teach your parents how to use calm breathing.*

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- *We also started to talk about the idea that when children feel more involved or connected to their school, and have things at school they look forward to, this can help them to feel less worried at school. Your child has been asked to think about ways they could get more involved at school, whether that's doing an extracurricular activity or just finding opportunities to put their hand up and help when needed. Over the next week have a discussion with your child about their ideas for getting more involved at school and with other peers. Next week they will be asked to write down their ideas in their action plan.*
- *Please also don't forget to keep practising and using manage-the-tease when the opportunity arises.*
 - Explain to parents that they will get information on the five rules for managing physical bullying, understanding the fight or flight response, and using controlled breathing in their session handout (p. 232 - 233).

Session 2 handout: Handling Physical Bullying and Introduction to Managing Emotions

Today we learnt 5 rules for handling physical bullying or physical aggression from peers. We don't want to use manage-the-tease with someone who is physically aggressive because the point of manage-the-tease is that you kind of embarrass the teaser by acting like what they said was lame. But people who are physically aggressive will often react to embarrassment with more aggression. The following rules are aimed at keeping you safe and avoiding the likelihood of future physical bullying.

Rule 1: The first rule for handling bullying is to lay low: This means not doing anything to draw attention to yourself. If they bully is less likely to notice you then they are less likely to bully you.

Rule 2: You need to avoid the bully: This means you need to stay out of reach of the bully. So, for example, if you know where the bully usually plays on the playground you shouldn't go to that area.

- It's also not a good idea to try and talk to the bully or make friends with the bully. It almost never works making friends with a bully and this will just draw attention to you.

Rule 3: Do not provoke the bully: This means do not use manage-the-tease with a bully who is physically aggressive because this will only make the bully more aggressive. If you're unsure of when to use manage-the-tease speak to one of us or your parents.

- Don't tell on the bully and try and get them into trouble for minor offenses (i.e. if they are passing notes in class) because this also draws attention to you and makes the bully likely to retaliate. You should only get involved and tell on the bully if someone is in danger of being injured. For example, if they are threatening to beat someone up.
- If you need to tell on a bully, do this in private so that your peers don't know and the bully can't retaliate against you.

Rule 4: The next rule is to hang out with other people: This means avoid being alone at school or on the playground. This is because bullies are more likely to pick on people when they are alone and unprotected by peers (e.g. you're a more easy target).

Rule 5: The final and most important rule for handling bullying is if you are worried or in danger – get help from an adult: This means that if you have been physically assaulted by a bully or they have threatened to beat you up you should get help from an adult.

Managing Emotions: calm breathing

Today we also learnt about what happens in our bodies when we are anxious, worried, scared, or even angry. A long time ago when humans lived in caves and had to hunt for their food, they needed to be able to protect themselves from lions and bears – so the brain developed a way of preparing the person for immediate physical action – to stand and fight or to run away quickly. This is called the fight or flight response.

Even though we don't have to worry about lions or bears anymore, our brain still sends out the fight or flight warning when it perceives potential danger - like when we see something scary or think frightening thoughts. Having the fight or flight system is very helpful to warn us of danger. But the problem with this warning system is that sometimes it can malfunction and send such a strong emotion signal that it becomes impossible to concentrate at school, or even be calm enough to use manage-the-tease. We've already learnt appropriate ways to respond to teasing and bullying, and we know we shouldn't fight back or retaliate, but we also need ways to manage the strong emotions that being teased or bullied can cause.

As the body prepares itself to fight or run away we may notice a number of physical changes that can be scary if we don't know why they're happening. These are the same changes we can feel when we become worried or angry:

- shortness of breath
- tight chest
- dizziness or light-headedness
- increased heart beat
- muscle tension or pain
- shakiness
- sweating
- dry mouth
- difficulty swallowing
- blurred vision
- butterflies in stomach or feeling sick.

One really simple way of learning to manage your emotion system is to practice breathing relaxation. Calm breathing is a strategy in which you concentrate on breathing slowly and at an even speed. Calm breathing can actually help you turn down your fight or flight system when it's too strong.

- To do slow breathing you need to slowly draw in a deep breath, for 3-4 seconds, and then very slowly let it out. As you breathe, say to yourself 'relax'. Doing this a few times will help you to regain control of your body and help you to feel calmer.
- A good way to help you work out whether you're breathing slowly and calmly enough while you're first learning to use calm breathing is to place a cotton wool ball on the tip of your fingers, hold your hand in front of your face and try to do your calm breathing without the cotton wool ball falling off your hand.

The best thing about calm breathing is that you can do it anywhere, even sitting in the classroom because no one can tell that you're doing it!

Session three: What you think affects how you feel, using green light thinking

- Homework review: manage-the-tease, calm breathing, extracurricular activities (15 mins)
- Review children's use of manage-the-tease over the last week. Start by asking if anyone would like to tell the group about their practice rather than picking children.
 - Note: Do not allow children to talk about the specifics of how they were teased by saying "we just want to focus on how you responded".
 - Review children's use of calm breathing. Ask if anyone can remember the name of our danger response (Fight-or-flight response).
 - Ask each child if they practiced their calm breathing and whether there were particular times when they needed to use it.
 - Can ask if anyone was able to teach their parents calm breathing.
 - Children were also asked to think about getting more involved at school and with peers at the end of last week. Ask children if they had thought about some ideas and if anyone would like to share their ideas with the group.
 - Once children have finished discussing their ideas they should then be provided with their action plan so that they can write their ideas down.
- What you think affects how you feel: green light, red light thoughts (20 mins)
- Explain: *Last week we learnt about what happens in our bodies when we feel scared, worried, or angry. That was called the fight-or-flight response. We also learnt one really simple way of managing the strong emotional responses that can happen in our body – calm breathing.*
 - *Today we are going to learn about another thing that affects how we are feeling – the way we are thinking. Thoughts are the words or sentences that pop into our heads throughout the day. We constantly think about lots of things. We might think, "I like ice cream", "I am bad at sport", "I'm bored" or "I am brave".*
 - *The way you think about a situation can affect how you are feeling and how you behave (draw head, heart, hand on board).*
 - *When we have pleasant thoughts this will often produce pleasant feelings.*
 - *For example, if you have the thought: "I'm really looking forward to my birthday party" you will feel happy.*
 - *Or, if you have the thought "Although we lost, I played really well". This would probably make you feel pleased and you will probably want to play again next time.*

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- *At other times we can have more negative thoughts and these thoughts can produce unpleasant feelings.*
 - *For example, if you think ‘no one likes me’ you will feel sad and you will stay at home instead of going out and playing.*
- *So thoughts are important because they cause feelings and behaviours. Some thoughts are helpful in that they make you feel good and make you behave in ways that lead to good results for you. These thoughts are called green light thoughts because these thoughts are helpful; you can listen to them and keep GOING with your day. Green light (GO) thoughts help you to feel happy, excited, or brave.*
- *But lots of young people who have experienced teasing or bullying may start to have a more negative view of school and themselves. They often start to think about themselves in a more negative way and believe that there is something wrong with them or they can't cope.*
- *Usually, when people's thoughts change like this, the new negative thoughts are not entirely realistic. These new thoughts are not helpful and it is important to stop and ‘catch’ these thoughts so they can be examined – just like a detective would examine information in order to figure out whether something is actually likely to be true or not.*
- *These are called red light thoughts and these thoughts make us feel worried, sad, angry or scared. They're called ‘red light’ thoughts because we need to STOP and figure out whether the thought is true or realistic.*
- *Most people have a mixture of negative and positive thoughts. But when our thinking is making us feel sad, scared, worried or angry all the time then we need to try to replace them with a green light (Go) thought.*
- *Remember, green light thoughts are thoughts that can make you feel happy, excited or brave.*

→Green light, red light game (10 mins)

- *Explain: To practice identifying green light (helpful) thoughts and red light (unhelpful) thoughts we are going to play a game. I am going to say different thoughts out loud. And using these signs that (Facilitator) is passing out you will hold up the red STOP side if you think it is a negative thought that would make someone feel sad, scared, worried, or angry. If you think it's a thought that would make someone feel happy, excited, or brave then you should hold up the green side for a green light GO thought. Does everybody understand?*
 - *“I love going to soccer on Tuesdays” (green)*
 - *“I am scared of new situations, I won't cope” (red)*

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- *Even though I am not very good at maths I know I tried my best on the test today” (green)*
- *I like playing chess so I will be brave and join the chess club” (green)*
- *“Nobody likes me” (red)*
- *“Even though Michael calls me names that’s just his opinion” (green)*
- *“I am good at horse riding” (green)*
- *“I am brave” (green)*
- *“What if Sarah teases me again today, there’s nothing I can do” (red)*
- *“I’m stupid” (red)*
- *“I am a kind person” (green)*

Note: Make sure children are able to correctly identify negative thoughts and positive thoughts before moving on. Remind children that: *negative thoughts are unhelpful because they cause us to feel sad, worried, scared, or angry. Whereas, positive thoughts are helpful because they help us to feel happy, excited and even brave when we need to be brave.*

→ Example of looking for more information: Why do children get bullied? (20 mins)

- Explain: *So when we notice we are feeling really sad, angry, worried or scared we need to see whether we are having an unhelpful thought that is making us feel worse than we need to. Sometimes we need to modify what we think in our heads to reduce or change the strong feelings in our bodies. If we are having a negative red light thought we need to STOP and be a detective - looking for any evidence that the thought is true.*
- *To help you understand what I mean by looking for evidence that a thought is true or not we are going to do an example together. If I have the thought “I must get teased all the time because I’m stupid” one way we could be a detective is to look at the reasons that people get teased. Do you guys have any idea about why some people tease other people?*
 - *Spend some time coming up with answers about why other children tease. Make sure children generate responses regarding the bully (i.e. they are bored, they are insecure, someone else bullies them) as well as responses about the victim.*
 - *Once children have exhausted ideas for why a child may get teased highlight the fact that there are lots of reasons for being teased and it is not necessarily because the child is stupid.*
- Explain: *So you can see from this list we have created using our detective skills that there are lots of reasons someone might be teased. And some of the ideas we came up with had nothing to do with the person who is being teased. Based on all this evidence we have gathered, the thought “I must get teased because I’m stupid” probably isn’t true and it’s not very helpful.*

MEMO: Managing Emotions and Managing Others

- *So we need to try and think of a green light thought instead. Remember a green light thought is meant to help us feel better or help us be brave when we need to be. A green light thought also takes into account all the information we gathered when we were being detectives. Can anyone think of a more helpful thought that takes into account all the information we have about teasing?*
 - *Example thought: “I don’t like getting teased but being teased doesn’t mean there’s anything wrong with me”.*
- *So when you notice yourself having a thought that makes you feel angry, sad, scared, or worried you need to STOP. Then you need to be a detective looking for evidence that the thought is true or helpful. Once you have done this you can come up with a green light thought – this is a thought that considers more than just negative information and helps you feel brave.*
- *This is a complex concept for children, spend time answering any questions and make sure children understand the difference between a red light and a green light thought.*

→ Complete surveys (10 mins)

- *The last thing we would like you to do today is complete a survey for us. This is the same survey you completed at the beginning of the group. It doesn’t matter if you can’t remember your last answers, we just want you to put down what you think now. You just need to circle how much you agree with each statement from 1 (disagree strongly) to 5 (agree strongly). If you need any help just put up your hand and one of us will come over.*

→ Review with parents, encourage continued practice and certificates (15 mins)

- *Explain:*
 - *Today we talked about how the way you think about a situation can affect how you are feeling and how you behave (see parent handout p. 239). When we have pleasant thoughts this will often produce pleasant feelings, and when we have negative thoughts this can cause unpleasant feelings.*
 - *Green light thoughts are pleasant or helpful thoughts that make us feel happy, excited, or brave, and red light thoughts are unhelpful thoughts that make us feel sad, angry, worried, or scared. These are red light thoughts because we need to STOP and consider whether the thought is making us feel worse than we need to feel.*
 - *Sometimes we need to modify what we think in our heads to reduce or change the strong feelings in our bodies. Can anyone tell me what we need to do if we’re having a red light thought?*

MEMO: Managing Emotions and Managing Others

- Stop
- Be a detective
- Look for evidence that the thought is true or not
- Come up with a green light thought
- *This is our last session all together today so as well as going home and practicing your green light thinking, it is also important that you continue practising your strategies for managing teasing and bullying, and also your calm breathing. So please remember to do this. There are a couple of spaces still left on your action plan so during the next week I would like you to sit down with your parent and talk about the strategies you have learnt and fill in the rest of your action plan. For example, under strategies for managing when I am feeling worried, scared or angry you could put down the steps for coming up with a green light thought.*
- Last of all, hand out certificates of attendance (p. 241) and thank everyone for their effort. Any questions from parents can be answered after certificates are handed out. Make sure parents are reminded that another follow up survey will be posted in one month for the children to complete. After this they will be sent some more general feedback about the group.

Session 3 handout: What you think affects how you feel -using green light thinking

Last week we learnt how our body reacts when we have a strong emotion. Today we learnt about another thing that affects how we are feeling – the way we are thinking. Thoughts are the words or sentences that pop into our heads throughout the day. When we have pleasant thoughts, this will often produce pleasant feelings. At other times, we can have thoughts that are more negative and these thoughts can produce unpleasant feelings.



Green light thoughts: Some thoughts are helpful in that they make you feel good, happy, excited, or brave, and make you behave in ways that lead to good results for you. These thoughts are called green light thoughts because these thoughts are helpful; you can listen to them and keep GOING with your day.



Red light thoughts: Sometimes when young people have experienced teasing or bullying they may start to have a more negative view of school and themselves. Usually, when people's thoughts change like this, the new negative thoughts are not entirely realistic. These new thoughts are not helpful because they often make us feel worse than we need to feel.

These are called red light thoughts and these thoughts make us feel worried, sad, angry or scared. They're called 'red light' thoughts because we need to STOP and figure out whether the thought is realistic or helpful.

Sometimes we need to modify what we think in our heads to reduce or change the strong feelings in our bodies. If we are having a negative red light thought we need to STOP and be a detective - looking for any evidence that the thought is true.



Steps for managing negative or unhelpful thoughts:

- Step 1: Stop
- Step 2: Be a detective
- Step 3: Look for evidence that the thought is true or not
- Step 4: Come up with a green light thought

Some helpful questions when investigating your red light thoughts:

- Is there any evidence for this thought?
- Are there any other ways of thinking about this situation?
- Is there any other information I should take into account?
- What would someone I admire think in this same situation?
- What would I tell a friend if they had this thought?
- Based on the above information, what would be a more realistic and helpful green light thought?

MY SCHOOL ACTION PLAN

THINGS I LOOK FORWARD TO AT SCHOOL:

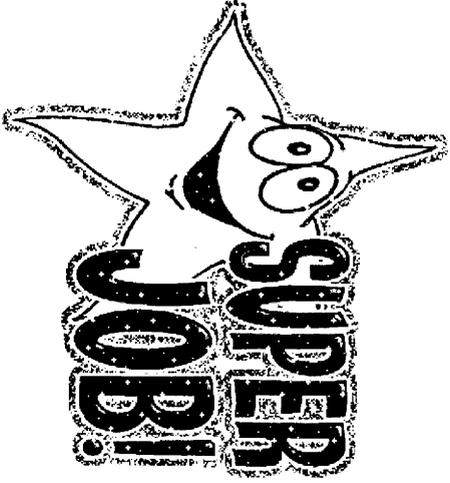
THINGS I CAN DO TO BE MORE INVOLVED AT SCHOOL:

WHAT ARE SOME OF MY STRATEGIES FOR MANAGING OTHERS:

THINGS I CAN DO WHEN I BECOME WORRIED, SCARED OR ANGRY:

MY SUPPORT PEOPLE AT SCHOOL ARE: _____

MY SUPPORTS OUTSIDE OF SCHOOL ARE: _____



CERTIFICATE OF PARTICIPATION

This certificate is awarded to...

Thank you for participating in the pilot group **Managing Emotions and Managing Others!**

Name

Position title

Name

Position title

Appendix 3¹⁴

Questionnaire for Ongoing Longitudinal Project

¹⁴ A number of other items were included in the questionnaire that are not relevant to the current thesis, including measures of the Big Five Personality Scales and other stereotype and school specific measures.

MY NAME IS _____

MY CODE NUMBER FOR THE SURVEY IS _____

Please tear off this cover sheet and put it face down on your desk. It will be collected by the researcher from The Australian National University and stored in a secure place.

++++
++++

SCHOOL SURVEY – Yr 7 to 10 Students

This survey is the third phase of a longitudinal study (where the same or similar survey is completed several times) that investigates a range of factors that relate to the school and will assist in planning for the future.

The survey's purpose is to find out three things:

What **you** think about this school,

What are **your** attitudes related to yourself, your experiences as a student and goals for the future and

How **you** think this school is structured

Although, you are asked questions about yourself as an individual the research focus is more on the structure of the school as a whole than on you personally.

The survey will take about 40 minutes to complete.

It is important that you answer as honestly as you can the questions below, so we can gain a clear understanding of the schools strengths and challenges.

Please rate the degree of your (dis)agreement with the following statements **about your school**, by circling one number from 1-7.

	Disagree strongly	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Agree strongly
• Being a part of this school is	1	2	3	4	5	6	7
• I am happy to be a part of this school	1	2	3	4	5	6	7
• I feel a strong connection with this	1	2	3	4	5	6	7
• I identify with this school	1	2	3	4	5	6	7
• Being a student is important to me	1	2	3	4	5	6	7
• I am happy to be a student	1	2	3	4	5	6	7
• I feel a strong connection with other	1	2	3	4	5	6	7
• I identify with other students	1	2	3	4	5	6	7
• I do not put much effort into my	1	2	3	4	5	6	7
• I almost always perform better than an acceptable level	1	2	3	4	5	6	7
• I try to complete my school work on time and to the best of my ability	1	2	3	4	5	6	7
• I have got what it takes to be a good	1	2	3	4	5	6	7

Rate the degree of your (dis)agreement with the following statements about **your perceptions of school processes**, by circling one number from 1-7.

	Disagree strongly	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Agree strongly
• Students and staff have similar views about what being at this school should be like.....	1	2	3	4	5	6	7
• School values impact on us at this school.....	1	2	3	4	5	6	7
• The way decisions are made at this school are fair ...	1	2	3	4	5	6	7
• Students should go along with staff decisions even if they do not agree with them.....	1	2	3	4	5	6	7
• Students should have more say in matters that affect them.....	1	2	3	4	5	6	7
• Staff listen to students and try and understand their point of view	1	2	3	4	5	6	7
• Staff should talk to students more about the way the school functions.....	1	2	3	4	5	6	7
• Students and staff often do not get along	1	2	3	4	5	6	7
• Students treat staff disrespectfully	1	2	3	4	5	6	7
• Students will help teachers make sure that all students follow the school rules	1	2	3	4	5	6	7
• Staff enforce the school rules (e.g., hats, uniforms) in the same way	1	2	3	4	5	6	7
• Students generally “do the right thing” while they are at school.....	1	2	3	4	5	6	7
• When students’ misbehave and act-up staff tend to respond in the same kinds of ways.....	1	2	3	4	5	6	7
• Staff do not relate to each other well.....	1	2	3	4	5	6	7
• Staff work hard to make sure students learn and improve.....	1	2	3	4	5	6	7
• Staff should push students to try harder and learn more.....	1	2	3	4	5	6	7
• More needs to be done to make sure students do not misbehave in class.....	1	2	3	4	5	6	7
• Students seem to be focused more on their learning.....	1	2	3	4	5	6	7

Please read each statement below and indicate by circling how much of the time **during the past month you have felt**

1 = All of the time and 6 = None of the time

	All the time	Most of the time	A good bit of the time	Some of the time	A little bit of the time	None of the time
• Like a very nervous person.....	1	2	3	4	5	6
• Bothered by nervousness	1	2	3	4	5	6
• Relaxed and free of tension.....	1	2	3	4	5	6
• Tense or high-strung.....	1	2	3	4	5	6
• Anxious, worried	1	2	3	4	5	6
• You had difficulty trying to calm down	1	2	3	4	5	6
• You generally enjoyed things.....	1	2	3	4	5	6
• Nervous or jumpy.....	1	2	3	4	5	6
• Restless, fidgety, impatient.....	1	2	3	4	5	6
• Calm and peaceful	1	2	3	4	5	6
• Rattled, upset, flustered	1	2	3	4	5	6
• Your hands shake when doing things.....	1	2	3	4	5	6
• You could relax without difficulty.....	1	2	3	4	5	6
• You were living a wonderful adventure.....	1	2	3	4	5	6
• Moody, worried about things.....	1	2	3	4	5	6
• Low or had very low spirits	1	2	3	4	5	6
• You expected an interesting day	1	2	3	4	5	6
• Downhearted or blue	1	2	3	4	5	6
• Depressed	1	2	3	4	5	6
• Strain, stress, pressure.....	1	2	3	4	5	6
• Nothing turns out as wanted	1	2	3	4	5	6
• Like crying.....	1	2	3	4	5	6
• You woke up fresh, rested	1	2	3	4	5	6
• Down in the dumps	1	2	3	4	5	6
• You had nothing to look forward to	1	2	3	4	5	6
• Like a happy person	1	2	3	4	5	6
• Happy, satisfied, or pleased	1	2	3	4	5	6
• Daily life was interesting	1	2	3	4	5	6
• Cheerful, light-hearted	1	2	3	4	5	6
• Your future was hopeful, promising	1	2	3	4	5	6

On the following pages, there are phrases describing people's behaviors. Please use the rating scale below to indicate the extent to which you agree or disagree that each statement **describes you**.

Response options

- 1: Disagree strongly
- 2: Disagree a little
- 3: Neither agree nor disagree
- 4: Agree a little
- 5: Agree strongly

	Disagree strongly	Disagree a little	Neither agree nor disagree	Agree a little	Agree strongly
• Make friends easily.....	1	2	3	4	5
• Trust others	1	2	3	4	5
• Complete tasks successfully	1	2	3	4	5
• Believe in the importance of art.....	1	2	3	4	5
• Love to help others.....	1	2	3	4	5
• Work hard.....	1	2	3	4	5
• Love to read challenging material	1	2	3	4	5
• Believe that I am better than others	1	2	3	4	5
• Am always prepared.....	1	2	3	4	5
• Panic easily.	1	2	3	4	5
• Sympathize with the homeless.....	1	2	3	4	5
• Fear for the worst	1	2	3	4	5
• Enjoy wild flights of fantasy	1	2	3	4	5
• See beauty in things that others might not notice	1	2	3	4	5
• Dislike myself	1	2	3	4	5
• Am concerned about others	1	2	3	4	5
• Tell the truth.	1	2	3	4	5
• Am always on the go.....	1	2	3	4	5
• Do more than what's expected of me.....	1	2	3	4	5
• Seek adventure.	1	2	3	4	5
• Have a lot of fun.	1	2	3	4	5
• Feel sympathy for those who are worse off than myself. ...	1	2	3	4	5
• Avoid contacts with others.....	1	2	3	4	5
• Prefer to be alone.....	1	2	3	4	5

Please use the rating scale below to indicate the extent to which you agree or disagree that each statement describes you.

	Disagree strongly	Disagree a little	Neither agree nor disagree	Agree a little	Agree strongly
• Do not like poetry	1	2	3	4	5
• Take advantage of others.....	1	2	3	4	5
• Leave a mess in my room	1	2	3	4	5
• Am often down in the dumps.....	1	2	3	4	5
• Break rules.....	1	2	3	4	5
• Insult people	1	2	3	4	5
• Have difficulty understanding abstract ideas.....	1	2	3	4	5
• Waste my time.....	1	2	3	4	5
• Am not interested in other people's problems.....	1	2	3	4	5
• Rush into things.....	1	2	3	4	5
• Get stressed out easily.....	1	2	3	4	5
• Keep others at a distance.....	1	2	3	4	5
• Like to get lost in thought	1	2	3	4	5
• Am not easily annoyed.....	1	2	3	4	5
• Avoid crowds.....	1	2	3	4	5
• Do not enjoy going to art museums.....	1	2	3	4	5
• Feel comfortable with myself.....	1	2	3	4	5
• Wait for others to lead the way.....	1	2	3	4	5
• Don't understand people who get emotional	1	2	3	4	5
• Take no time for others	1	2	3	4	5
• Am not bothered by difficult social situations..	1	2	3	4	5
• Am able to control my cravings..	1	2	3	4	5
• Am not interested in theoretical discussions..	1	2	3	4	5
• Remain calm under pressure..	1	2	3	4	5
• Look at the bright side of life	1	2	3	4	5
• Act without thinking	1	2	3	4	5

Please answer the following questions thinking of what you actually did during the last 7 days.

For each question, indicate with a circle how many times you did that behaviour **during the last 7 days**.

	0 times	1 time	2 times	3 times	4 times	5 times	6 or more times
• I teased students to make them angry	0	1	2	3	4	5	6
• I got angry very easily with someone	0	1	2	3	4	5	6
• I fought back when someone hit me first.....	0	1	2	3	4	5	6
• I said things about other kids to make other students laugh.....	0	1	2	3	4	5	6
• I encouraged other students to fight.....	0	1	2	3	4	5	6
• I pushed or shoved other students.....	0	1	2	3	4	5	6
• I was angry most of the day	0	1	2	3	4	5	6
• I got into a physical fight because I was angry.....	0	1	2	3	4	5	6
• I swore at someone.....	0	1	2	3	4	5	6
• I called other students bad names	0	1	2	3	4	5	6
• I threatened to hurt or hit someone	0	1	2	3	4	5	6
• I spread rumours/gossiped about others (e.g., at school, via SMS or on-line)	0	1	2	3	4	5	6
• I got angry at someone and deliberately ignored them/stopped talking to them.....	0	1	2	3	4	5	6
• I got angry with someone and tried to get others to stop liking them	0	1	2	3	4	5	6
• I did not obey an instruction from a teacher	0	1	2	3	4	5	6
• I argued with a teacher about rules.....	0	1	2	3	4	5	6
• I was disruptive in class.....	0	1	2	3	4	5	6
• I interrupted a teacher	0	1	2	3	4	5	6

Please answer the following questions thinking of what actually happened to you during the last 7 days.

For each question, indicate with a circle how many times another student did something to you **during the last 7 days**.

	0 times	1 time	2 times	3 times	4 times	5 times	6 or more times
• A student teased me to make me angry.....	0	1	2	3	4	5	6
• A student beat me up	0	1	2	3	4	5	6
• A student said things about me to make other students laugh (made fun of me).....	0	1	2	3	4	5	6
• Other students encouraged me to fight.....	0	1	2	3	4	5	6
• A student pushed or shoved me.....	0	1	2	3	4	5	6
• A student asked me to fight.....	0	1	2	3	4	5	6
• A student swore at me.....	0	1	2	3	4	5	6
• A student slapped or kicked me	0	1	2	3	4	5	6
• A student called me (or my family) bad names	0	1	2	3	4	5	6
• A student threatened to hurt me or hit me.....	0	1	2	3	4	5	6
• A student tried to hurt my feelings.....	0	1	2	3	4	5	6
• A student spread rumours/gossip about me (e.g., at school, via SMS or on-line)	0	1	2	3	4	5	6
• A student deliberately ignored or stopped talking to me	0	1	2	3	4	5	6
• I was deliberately excluded by others at lunch	0	1	2	3	4	5	6

SCHOOL CLUSTERING EXERCISE

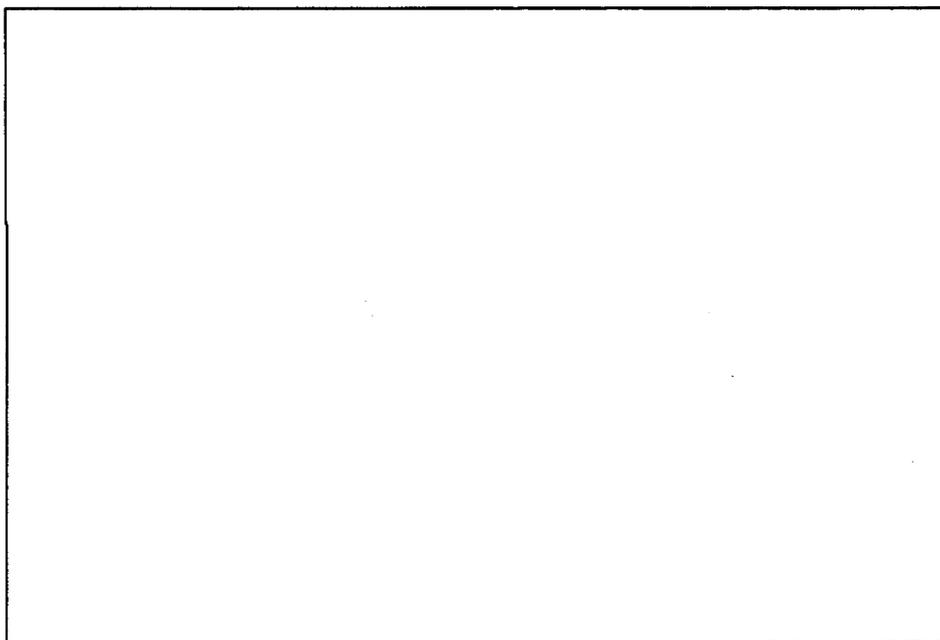
When students are asked to describe a school, usually they say that there are groups of “teachers” and groups of “students”. The teachers group can sometimes be divided up into smaller clusters or smaller grouping such as “sports teachers”, “young teachers”, “easy teachers”, “strict teachers”. The “student group” can also be made up of smaller groupings such as “friendly students”, “disruptive students”, “sporty students”, “nerdy students”.

Can you think of groupings that stand out and are important for you at this school?

When thinking about your daily interactions at this school who tends to share the same views and can be grouped together? What are the groupings that you think matter?

Please draw circles below to reflect each of the “groupings” that you think are important and come up with a label that describes each cluster or grouping.

In the space please draw and label your own diagram



Before you turn the page, put a **dotted line** ----- between those groups that you think **do not get along** with each other. Put a **straight line** _____ between those groups that you think **get along** with each other.

SCHOOL CLUSTERING EXERCISE

Thinking about your diagram on the previous page, answer the following questions.

Which groups do you belong to?	
Which groups would you ideally want to belong to?	
Which group would your classmates say you belong to?	
Which group or groups does your group get along with and interacts with in a positive way?	
Which group or groups does your group not get along with and interacts with in a negative way?	

Please indicate the extent to which you feel that the following statements are correct descriptions of this school.

	Disagree strongly	Disagree	Disagree somewhat	Neutral	Agree somewhat	Agree	Agree strongly
• I believe the teachers are friendly.....	1	2	3	4	5	6	7
• I believe the school sets high standards for work	1	2	3	4	5	6	7
• I believe the school is focused on helping me learn	1	2	3	4	5	6	7
• I believe school is too easy	1	2	3	4	5	6	7
• I feel unwelcome at this school.....	1	2	3	4	5	6	7
• I believe teachers at this school care for students.....	1	2	3	4	5	6	7
• I believe there is too much freedom at this school.....	1	2	3	4	5	6	7
• I believe people at this school help one another.....	1	2	3	4	5	6	7
• I believe that it is easy to get away with things at this school	1	2	3	4	5	6	7
• I believe this school has high expectations of students' behaviour	1	2	3	4	5	6	7
• I feel that people at this school listen to one another.....	1	2	3	4	5	6	7
• I believe this school is well organised.....	1	2	3	4	5	6	7
• I believe that staff at this school follow things up.....	1	2	3	4	5	6	7
• I feel this school is too strict.....	1	2	3	4	5	6	7
• I believe that people at this school are mean to one another.....	1	2	3	4	5	6	7
• I believe that there are too many disruptions at this school	1	2	3	4	5	6	7
• I believe people trust each other at this school.....	1	2	3	4	5	6	7
• I believe that people are easy-going at this school.....	1	2	3	4	5	6	7
• I believe that people at this school are accepting of one another's differences	1	2	3	4	5	6	7
• I feel safe at this school	1	2	3	4	5	6	7
• I believe that the teachers at this school care about me.....	1	2	3	4	5	6	7
• I believe that this school provides me with the required knowledge	1	2	3	4	5	6	7
• I feel teachers at this school encourage and motivate me to do better in my studies.....	1	2	3	4	5	6	7

In this section we would like you to give us some general information about yourself. This information is intended to help us summarize the views of people in this school.

1. How many years have you been a student at this school?

- Under 1
 1-2
 3-4
 5-9
 Over 10

If you have been at the school for at least 1 year complete the following questions (if not continue to the next page and complete Question 2)

Please rate your school in the past 12 months and how you think your school might rate in comparison to other schools in the ACT

“Our school is...”

Disorganized	1	2	3	4	5	6	7	8	9	Organized
Inactive	1	2	3	4	5	6	7	8	9	Active
Uncooperative	1	2	3	4	5	6	7	8	9	Cooperative
Non-creative	1	2	3	4	5	6	7	8	9	Creative
Unsociable	1	2	3	4	5	6	7	8	9	Sociable
Ineffective	1	2	3	4	5	6	7	8	9	Effective
Stressful	1	2	3	4	5	6	7	8	9	Calm
Discontented	1	2	3	4	5	6	7	8	9	Content
Narrow-minded	1	2	3	4	5	6	7	8	9	Open-minded
Inconsiderate	1	2	3	4	5	6	7	8	9	Considerate

Over the last 12 months or so at this school

	Disagree strongly	Disagree	Disagree somewhat	Neither agree or disagree	Agree somewhat	Agree	Agree strongly
• There has been more awareness of the school's values	1	2	3	4	5	6	7
• There has been a stronger sense that we are all members of the one school	1	2	3	4	5	6	7
• Things have been much the same	1	2	3	4	5	6	7
• Teachers and other staff seem friendlier	1	2	3	4	5	6	7
• There has been less “acting-up” behaviour in class	1	2	3	4	5	6	7
• There has been more of a focus on learning	1	2	3	4	5	6	7
• The graduation certificate and other awards have been more of a focus for students	1	2	3	4	5	6	7

To what extent do you think that other students at this school would agree with your assessments?

Not at all	1	2	3	4	5	6	7	8	9	Completely
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2. What is your age? _____

3. What grade are you in? _____

4. What is your first language? English Other (specify)_____

5. What is your sex (please circle)? Male Female

6. How would you describe your attitudes to completing this survey?

Very Negative

Negative

Neutral

Positive

Very Positive

Thank you for participating in this survey.

If as you answered these questions you felt you needed to talk to someone personally you should contact the school counsellor.