Living and Learning at School

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This paper reports the design and administration of a purpose built questionnaire to measure the social, emotional and academic wellbeing of 1,388 students in Years 7, 8, and 9, in three partner schools. The Living and Learning at School Questionnaire (LLSQ) contained items relating to knowledge about learning, emotional responses to life at school and information about social relationships and bullying. Goodman's (Goodman 1997) Strengths and Difficulties Questionnaire (SDQ) was also administered in order to gauge the self-reported mental health status of participants.

The focal points of interest in the study were the inter-related effects and relationships of social and emotional wellbeing with mental health status, learning and bullying.

Slee and Mohyla (2007) described bullying as a "particularly destructive form of aggression" affecting physical, social and emotional wellbeing: bullying in schools is of growing concern amongst educators. The relationship of bullying and victimisation to impaired psychological functioning (Sourander, Helstela, Helenius and Piha, 2000; Kumpulainen, Rasanen, and Puura, 2001) formed one subject of focus in this study. Statistical analyses of the relationship between mental health and the tendency to be pro-bully, victimised or pro-social, (measured using Slee and Rigby's (1993) Personal Relationships Questionnaire), provides further evidence that there is a significant relationship between psychological wellbeing and the level of bullying experienced at school.

The questionnaire also explored the relationship between the amount of bullying experienced by students and its effect on learning. A study by Holt, Finkelhor and Kantor (2007), which investigated victimisation amongst elementary school students, found an association between being victimised and experiencing psychological distress, and having academic difficulties. Using students' self-reported experiences at school, personal relationships, and mental health strengths and difficulties (self-report SDQ), relationships between bullying, mental health status and learning were investigated. Results add to our understanding of the association between bullying, mental health and learning in the school environment.

Introduction

Bullying is a persistent problem present in schools across the world and researchers have been working in a variety of countries, as well as collaboratively between countries, to find solutions to this harmful and sometimes fatal, peer instigated problem (see Klomek, Sourander, Kumpulainen, Piha, Tamminen, Moilanen, Almqvist and Gould 2008; Smith, Kanetsuna and Koo, 2007; Janowski, 1999; Gini, Albiero, Benelli and Altoe, 2007; Kim, Koh and Leventhal, 2004; Eslea, M., Menesini, E., Morita, Y., O'Moore, M., Mora-Merchan, J.A., Pereira, B. Smith, P.K. and Wenxin, 2003).

While bullying may subtly differ in concept in some countries depending on language and cultural practices (Smith, Kanetsuna and Koo, 2007), a generally accepted definition of bullying is that it is deliberate, unprovoked, aggressive behaviour, which is actioned repeatedly in an attempt to hurt the victim and

involves an imbalance of power (psychological or physical) between the victim and the perpetrator (Olweus, 1989). Bullying may be *physical*, such as pushing and shoving. *verbal,* such as name calling and teasing, *social*, such as exclusion, and, in keeping with modern technological times, *cyber*, such as using a mobile phone, e-mails and the Internet eg *YouTube*, blogs.

Decades of research since Olewus (1978) first alerted the world to this problem have provided some insights into the type and nature of bullying between school children and their peers. Research has found that bullying varies across year levels and gender, being more common in the first two years of secondary school (Slee 1994) and differing amongst girls and boys in both prevalence and nature (Crick, 1995; Owens, 1996; Slee and Rigby, 1993). While bullying is more common amongst boys than girls, girls are more likely to experience indirect victimisation, such as exclusion and spreading rumours, while boys are more likely to experience more direct victimisation such as physical and verbal aggression (Owens, Daly and Slee, 2005).

Research investigating psychosocial factors has found poorer outcomes for both victims and bullies when compared to those not involved in bullying as a victim or perpetrator. An international study across 25 countries by Nansel, Craig, Overpeck, Saluja, and Ruan (2004) found that in every country there was a consistent association of involvement in bullying (as a victim, bully or both) with greater health problems, school functioning difficulties (including poor peer relations) and diminished psychosocial capacities, such as emotional and social adjustment. This, and other research, has indicated that children and young people who are victimised and, or, bully others, are more likely to experience detrimental outcomes in terms of their physical, mental and social dispositions (Boulton and Underwood, 1992; Slee, 1995a, Forero, McLellan, Rissel and Bauman, 1999; Hawker and Boulton, 2000; Espelage and Holt, 2001; Rigby, 2003).

Somewhat different outcomes for victims, bullies and bully-victims have also been found. Being victimised has been linked to an increased tendency for suicide ideation, depression, anxiety, lowered self-esteem and lower academic achievement (Rigby and Slee, 1999; Slee, 1995c; Holt, Finkelhor and Kantor, 2007; Espelage and Holt, 2001; Hawker and Boulton, 2000; Nansel, 2001; Rigby, 2003; Sourander, Helstela, Helenius and Piha, 2000; Slee, 1995b; Forero, McLellan, Rissel and Bauman, 1999; Slee, 1995a; Salmivalli, Kaukiainen, Kaistaniemi and Lagerspetz, 1999). Generally, the experience of repeated victimisation effects youth by enervating their self-concept, reducing self-esteem and self-worth and contributing to social ineptness and isolation (Grills and Ollenick, 2002).

Conduct problems and a tendency to be delinquent have been found to be more commonly associated with youths who bully others (Haynie, Nansel and Eitel, 2001; Nansel, Overpeck, Pilla, Ruan, Simons-Morton and Scheidt, 2001). Recent research by Barker et al (2008) of early to mid-adolescent youth, which investigated the developmental course of bullying and victimisation by examining joint trajectories of bullies and victims, found further evidence of a link between an increasing bullying trajectory and juvenile delinquency for both boys and girls. Roland and Idsoe (2001) postulate that youth who bully others use this approach as a social strategy to achieve instrumental goals and to dominate others.

According to the research, worse off than victims or bullies are those who bully others and are victimised. This bully-victim group were found to have fewer friends than bullies, to be more likely to be hyperactive, to be the most stigmatized by peers and to have a greater probability of a psychiatric referral (Nansel, Haynie and Simmons-Morton, 2003; Unnever, 2005; Nansel, Overpeck, Pilla, Ruan, Simons-Morton and Scheidt, 2004; Ireland and Power, 2004). Barker et al (2008) suggest that there is a complex developmental relationship between being a bully and being victimised and that there is a high probability that victims will engage in bullying behaviour during adolescence.

While the maladjustment effects of bullying have been noted by researchers (as mentioned above), Finnish researchers Kaltiala-Heino, Rimpela, Rantanen, and Rimpela (2000) believe that "literature concerning mental health correlates of bullying and victimisation is … scarce, and comparable studies are difficult to find" (p 662). Postulating that involvement in bullying may be a precursor of mental disorders, Kaltiala-Heino et al (2000) carried out a study involving over 26,000 Finnish adolescents, aged 14-16, and found that involvement in bullying was associated with all of the mental health problems they studied. Not only did

they find this to be the case for both male and female bullies, victims and bully-victims, but there was also an increased risk of co-occurring mental disorders for youth involved with bullying.

Our study of student wellbeing provided an opportunity to contribute to this 'scarce' part of the bullying literature. By investigating the general mental health status of youth experiencing different levels of bullying we aimed to determine the likelihood that bullied youth would fall into the abnormal range of a mental health screening instrument, such as Goodman's (1997) Strengths and Difficulties Questionnaire (SDQ).

The SDQ is a very popular mental health screening instrument for children. It has been translated into 30-40 different languages and it has been used in epidemiological and evaluation studies, as well as by clinicians in practice across the world (Percy, McCrystal and Higgins, 2008).

The SDQ is a short behavioural screening questionnaire comprised of five scales, with five items each, providing scores for positive and negative attributes associated with mental health. Four of the scales (emotional symptoms, conduct problems, hyperactivity and peer problems) can be summed to provide a total difficulties score, while the last factor (pro-social) is an indicator of a person's strengths.

While the SDQ has been validated (Goodman, Meltzer and Bailey, 1998) and it has been found to be a reliable instrument for screening children at risk of mental health problems (Goodman and Scott, 1999; Goodman, 2001), recent studies of the self-report form in normal adolescent populations have called into question the psychometric properties of the SDQ. Researchers who have undertaken factor analyses of the SDQ have failed to satisfactorily confirm the factor structure, concluding that the five factors are not uni-dimensional (Mellor and Stokes, 2007; Hill and Hughes, 2007; Percy et al, 2008).

One solution offered by Percy et al (2008) is "to restrict the use of the SDQ to its full scale form, that is, as an indicator of overall strengths and difficulties" (p. 46). Mellor and Stokes (2007) suggest that the SDQ should not be used for an accurate diagnosis but as an indicator that follow up is needed in the various areas of functioning where difficulties have been indicated. Goodman, Meltzer and Bailey (2003) agree that the self-report form of the SDQ is best used to examine group differences rather than for making accurate diagnoses of individuals. This was the intended use of the SDQ in this study, that is, to provide an indication of any abnormal mental health tendencies of youth involved in bullying. The approach taken involved using Goodman's cut-off scores to classify respondents into "normal", "borderline" and "abnormal" categories of the total SDQ scale, as well as the five SDQ sub-scales, for comparisons between differently bullied groups of students with the proviso that the results would only be indicative of mental health issues which would warrant further investigation.

The overall wellbeing of students was the focus of this study so the prevalence, nature and impact of bullying and its association with learning and mental health formed the basis of this investigation. A specially designed self-administered questionnaire - The Living and Learning at School Questionnaire (LLSQ) - was designed for this purpose. The LLSQ included sections which asked questions about bullying and learning, in addition to Goodman's (1997) self-reported Strengths and Difficulties Questionnaire.

Method

The LLSQ was administered to nearly 1,400 students attending high schools that were working collaboratively in partnership with the University. Schools that participated in this study were part of an ongoing project which involved university and high school staff working together to research and initiate projects aimed at improving student wellbeing in local school communities. This paper reports on the first stages of the research which was designed to investigate different aspects of living and learning at school.

All year 8 and 9 students in the partner high schools and transitioning year 7 students visiting those schools participated in the research. They were from three metropolitan South Australian schools, ranging in location from lower to upper middle socio-economic areas. Year 7 students who attended a "transition day" at one of the partner high schools they were planning to attend the next year were given surveys which had additional questions about transitioning. The survey was administered at the end of the school year.

Participants completed the LLSQ, which consisted of 4 and 5-point Likert-scales which included the following:

1. **Participant information** – gender, age and number of friends. Level of contentment at school was measured using seven pictorial faces ranging from deep frowns to broad smiles (Andrews and Withey, 1976).
2. **The Peer Relations Questionnaire** (Slee and Rigby, 1993) – 16 questions which measured the tendency to be victimised, to bully or to be pro-social eg *I get called names by others*, *I tell false stories or spread rumours about others* and *I share things with others*.
3. **Bullying** – a question measuring the frequency of bullying.
4. **Bullying and Learning** – 6 questions about the impact of bullying on school functioning eg. *Because of bullying this year I could not concentrate on my school work*.
5. **Mental Health Status** – 25 questions comprising Goodman's (1997) Strengths and Difficulties Questionnaire.

To ensure consistency in students' understanding the concept of bullying, the LLSQ included a written definition of bullying, which immediately proceeded questions about bullying: *"People sometimes bully others less powerful than themselves by deliberately and repeatedly hurting or upsetting them in some way; for example, by hitting or pushing them around, teasing them or leaving them out of things on purpose. But it is not bullying harassment when two young people of about the same strength have the odd fight or quarrel".*

The level of bullying was measured by asking students to recall "how often this year have you been bullied or harassed by a student or students at school?", with responses on a six point Likert-scale ranging from "everyday" to "never".

Students were classified into bullying groups according to Boulton and Underwood's (1992) suggestion where those reporting that they were bullied once a week or more were considered to have been "seriously bullied". Students bullied less than once a week formed the "mildly bullied" group, while those reporting that they had never been bullied comprised the "never bullied" group.

Items in the PRQ which comprised the tendency to be victimised scale, the tendency to bully scale and the tendency to be pro-social were summed to obtain scores for each participant on each of these scales (Rigby and Slee, 1993).

Goodman's cut-off scores were used to determine abnormal tendencies – *Total SDQ* cut-off was 20 for abnormal and 16 for borderline; *Emotional Symptoms* cut-off was 7 for abnormal and 6 was the borderline score; *Conduct problems* cut-off was 5 for abnormal and 4 was the borderline score; *Hyperactivity* cut-off was 7 for abnormal and 6 was the borderline score; *Peer problems* cut-off was 6 for abnormal and 4 for borderline; *Pro-social Behaviour* a score of 4 or less was abnormal and 5 was the borderline score. Goodman's method for replacing missing data by averaging scores in factors with 3 items or more was used.

Sample

The composition of the participants is shown in Table 1. Year 7s comprised the biggest group of participants (40.1%) while Year 9s formed the smallest (27.7%). The gender distribution was generally well balanced overall – males comprised 51.7% of the sample. The average age of participants was 13.4 years (Standard Deviation = 0.94).

Table 1 Composition of Study Participants

		Male	Female	Total	Age	
Year 7	*number*	276	281	557	*Average:*	12.6 yrs
	percent	49.6	50.4	100.0	*Stand Dev:*	0.50
Year 8	*number*	234	211	445	*Average:*	13.5 yrs
	percent	52.6	47.4	100.0	*Stand Dev*:	0.54
Year 9	*number*	208	176	384	*Average:*	14.5 yrs
	percent	54.2	45.8	100.0	*Stand Dev:*	0.54
				1388	Missing =2	

Results

Levels of Bullying

The self-reported levels of bullying are shown in Table 2 and 3. As shown, about one in six (17.4%) reported that they had been seriously bullied during the year while just under half (51.8%) reported no bullying.

Table 2: Self-reported levels of bullying experienced by participants

Everyday	Most Days	One or Two days a week	About once a week	Less than once a week	Never	*Total*
32	51	79	77	421	709	*1369*
2.3%	3.7%	5.8%	5.6%	30.8%	51.8%	*100.0%*

Missing = 19 (1.4%)

Table 3: Categories of bullying experienced by participants

Everyday	Most Days	One or Two days a week	About once a week	Less than once a week	Never	*Total*
Seriously Bullied				***Mildly bullied***	***Not bullied***	*1369*
17.4% (n=239)				30.8%	51.8%	*100.0%*

Bully Groups

The *seriously bullied* group comprised 239 students, 51.5% of whom were male, while 54.3% of the 420 students in the *mildly bullied* group were males. The largest remaining *never bullied* group of 708 students was almost evenly divided between males and females (see Table 4). There were no statistical differences between the groups in terms of their gender composition (χ^2 = 1.8, df=2, p<0.40), suggesting that males were not more likely than females to report that they had been mildly or seriously bullied.
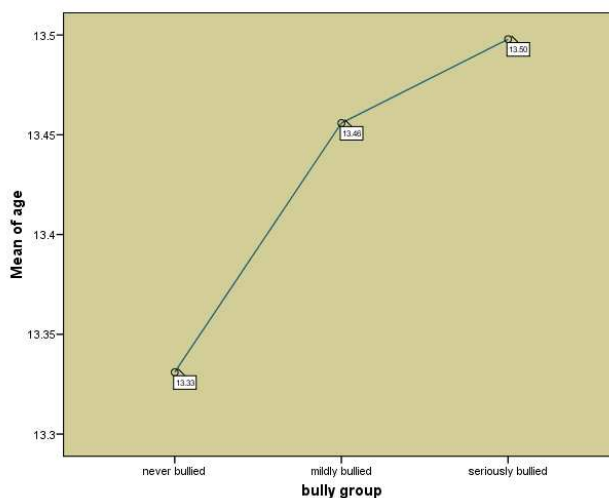
Table 4: Gender composition of bully groups

	never bullied		mildly bullied		seriously bullied	
	frequency	*percent*	*frequency*	*percent*	*frequency*	*percent*
male	355	50.1	228	54.3	123	51.5
female	353	49.9	192	45.7	116	48.5
Total	708	100	420	100	239	100

Differences between Bully Groups

Age

There was a significant difference in the age composition of the groups with younger students more likely to comprise the *never bullied* group and older students the *seriously bullied* group (ANOVA, F=3.95, df=2, p<0.019) (see Figure 1)

Figure 1: Age Differences between Bully Groups

Figure 2: Year Levels of Bully Groups
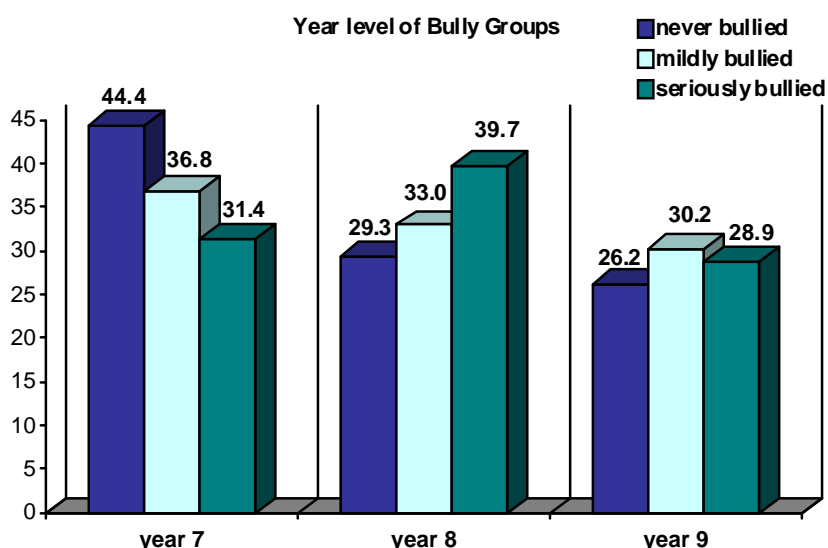
Year Level

There were significant differences in the Year level composition of the bully groups (χ^2 = 16.7, df=4, p<0.002). More year 7s comprised the *never bullied* group while more year 8s reported serious bullying (see Figure 2).

School Contentment

Students in the *seriously bullied* group were more likely to select unhappy faces when asked to rate school contentment by selecting a range of smiling or frowning faces (see Figure 3) in response to the question "Which is most like you when you are at school?" (Kruskal-Wallis: χ^2 = 44.9, df=2, p<0.0001). Over thirteen percent of students in this group selected unhappy faces (with a score less than 4) compared to less than five percent of those in the *never bullied* group (see Figure 3).

Figure 3: Self-reported School Contentment of Bully Groups
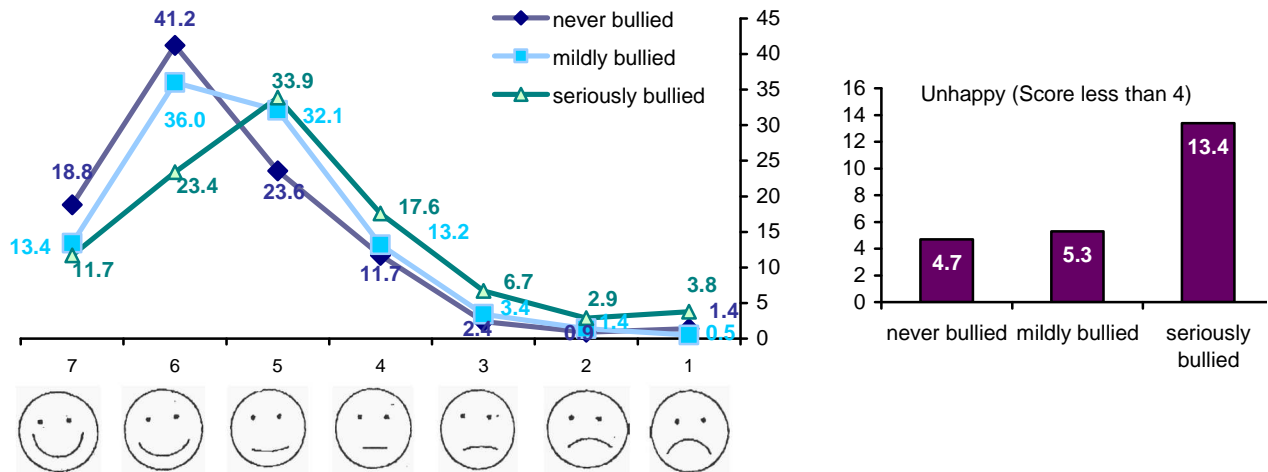
Friends

Students in the *seriously bullied* group were the least likely to report that they had "many good friends" and the most likely to select "none at all" when asked "How many good friends do you have?" Just over two-thirds reported having many good friends compared to over 80% of the *mildly bullied* and *never bullied* groups. Furthermore, four percent of students in the *seriously bullied* said that they had no friends compared to less than one percent in each of the *never bullied* and *mildly bullied* students (Kruskal-Wallis: χ^2 = 58.0, df=2, p<0.0001), respectively (see Figure 4).

**Figure 4: Number of friends of Bully Groups**
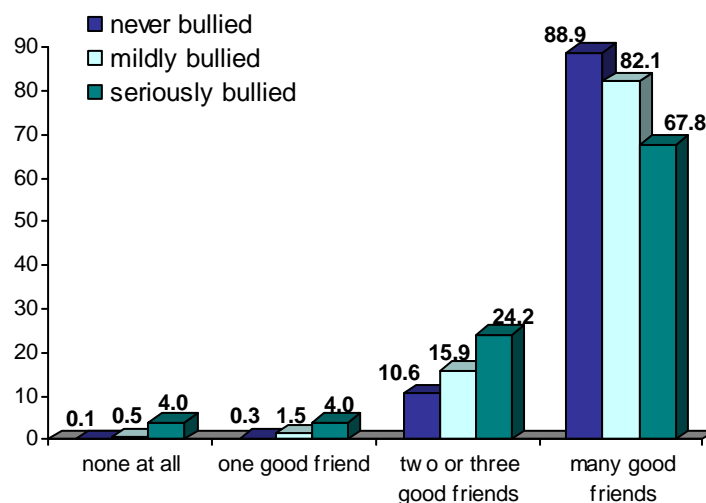
Emotional State

Was really worried and Upset because of bullying

Nearly one third (31.2%) of students in the *seriously bullied* group reported being really worried and upset *pretty often, very often or almost all the time*, because of bullying compared with less than one in ten students in the other groups (Kruskal-Wallis: χ^2 = 197.1, df=2, p<0.0001) (see Figure 5).

Figure 5: Bully Groups – really worried and upset because of bullying

Becasue of bullying this year I was really worried and upset
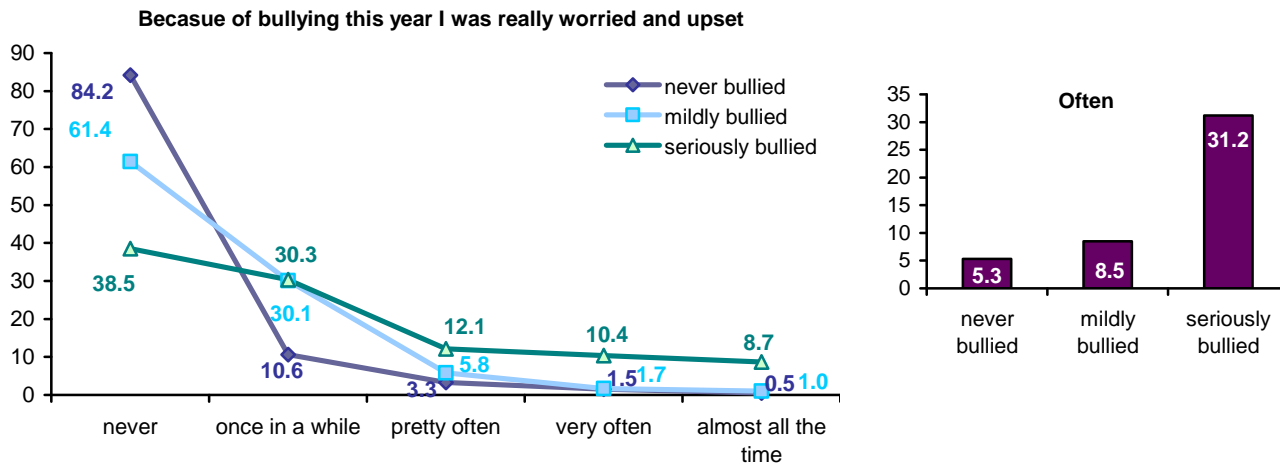
Was Afraid because of bullying

Over one quarter (27.2%) of students in the *seriously bullied* group reported being afraid *pretty often, very often or almost all the time*, because of bullying compared with less than one in twelve students in the other groups (Kruskal-Wallis: χ^2 = 161.8, df=2, p<0.0001) (see Figure 6).

Figure 6 - Bully Groups – afraid because of bullying

because of bullying this year - I was afraid
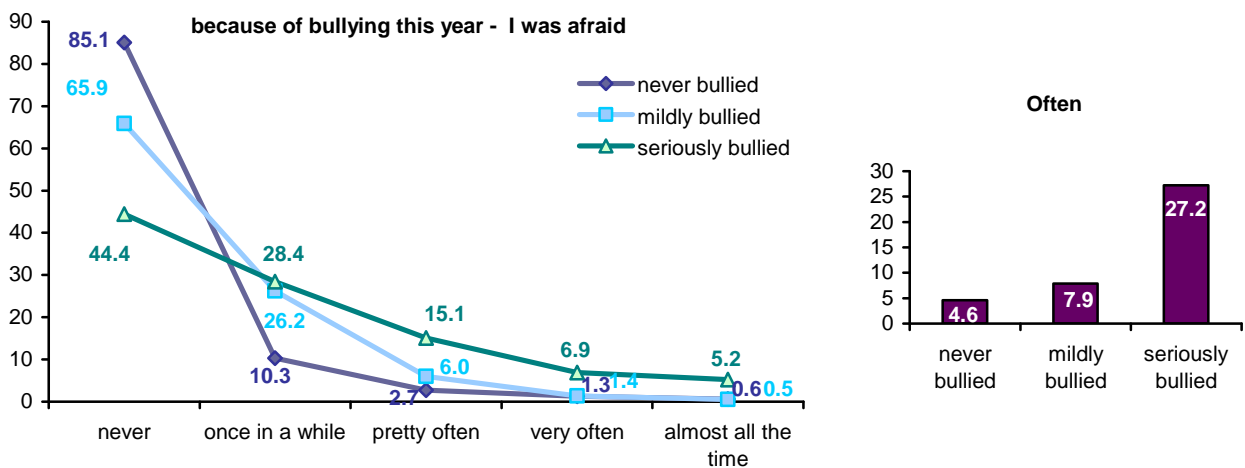
Bullying and Mental Health

Students in the *seriously bullied* group were more likely than students in the *mildly bullied* or *never bullied* groups to obtain scores in the abnormal category of the total SDQ as well as all other Difficulty Sub-scales. No significant differences between groups on the pro-social scale were found (χ^2 = 4.8, df=4, p<0.31).

Total SDQ Category

Nearly one quarter (24.0%) of students in the *seriously bullied* group were categorised in the abnormal range of the SDQ. This was a significantly higher proportion than students in the *mildly bullied* group (6.9%) and the *never bullied* group (2.9%) (χ^2 = 133.9, df=4, p<0.0001) (see Figure 7).

Total SDQ categories between the bully groups were significantly different for both girls and boys (Males: χ^2 = 42.9, df=4, p<0.0001; females: χ^2 = 100.5, df=4, p<0.0001). As shown in the box plots below (Figure 8), one quarter of the girls who reported being *seriously bullied* were in the abnormal range
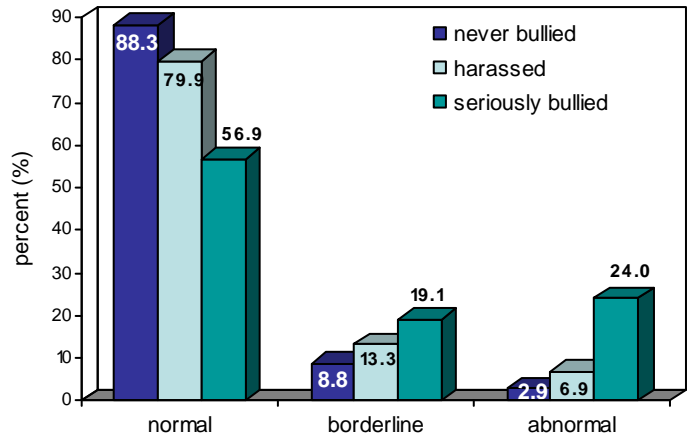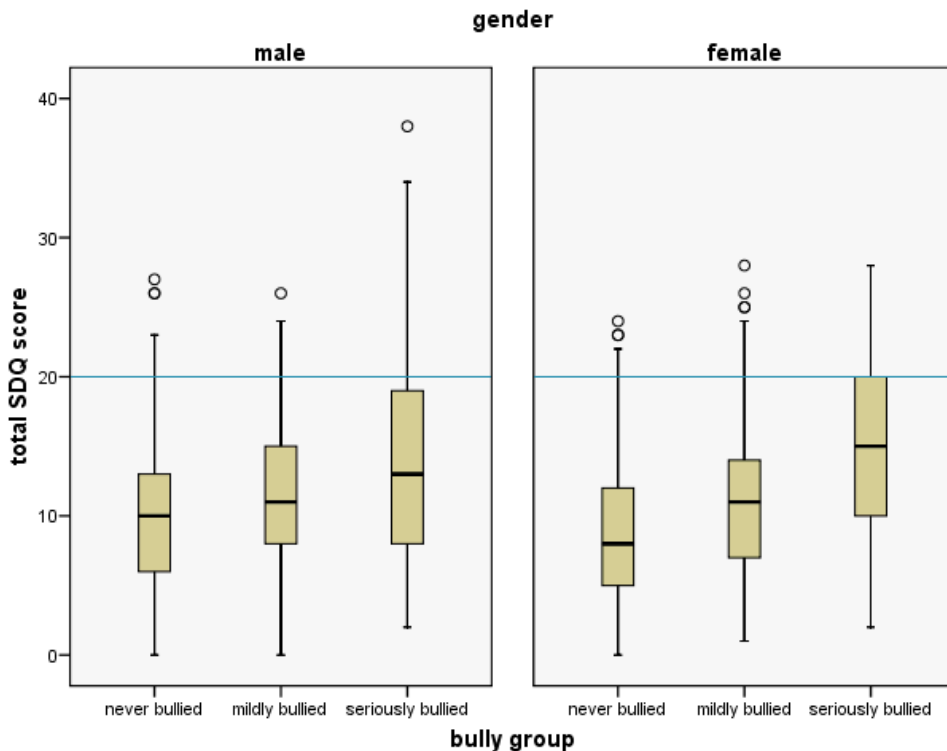
Figure 7 – Bully Groups – total SDQ


Figure 8 - Bully Groups – total SDQ by Gender

SDQ - Emotional symptoms Category

Nearly one in eight (11.6%) of students in the *seriously bullied* group were assessed in the abnormal range of the SDQ emotional symptoms scale. This was a significantly higher proportion than students in the *mildly bullied* group (6.4%) and the *never bullied* group (2.4%) (χ^2 = 45.8, df=4, p<0.0001) (see Figure 9).

Items for Emotional Symptoms:
- I get a lot of headaches, stomach-aches or sickness
- I worry a lot
- I am often unhappy, downhearted or tearful
- I am nervous in new situations
- I have many fears, I am easily scared

Figure 9 - Bully Groups – Emotional Symptoms
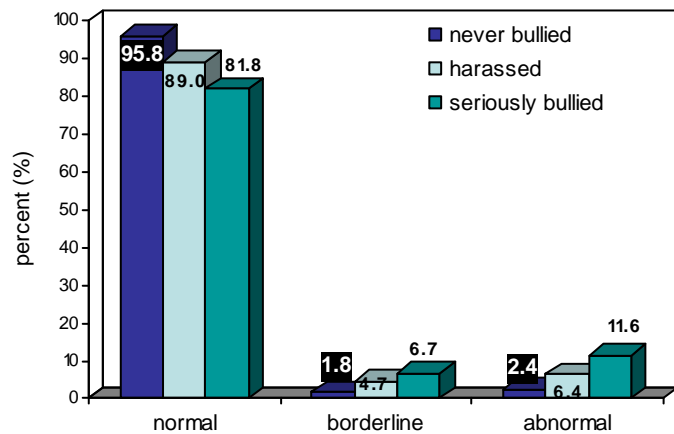
SDQ - Conduct Problems Category

Nearly one quarter (24.0%) of students in the *seriously bullied* group were categorised in the abnormal range for conduct problems. This was twice as many as the *mildly bullied* group (12.3%) and three times as many as *never bullied* group (8.0%) (χ^2 = 48.6, df=4, p<0.0001) (see Figure 10).

Items for conduct problems:
- I get very angry and often lose my temper
- I usually do as I am told (R)
- I fight a lot
- I am often accused of lying or cheating
- I take things that are not mine

Figure 10 – Bully Groups – Conduct Problems
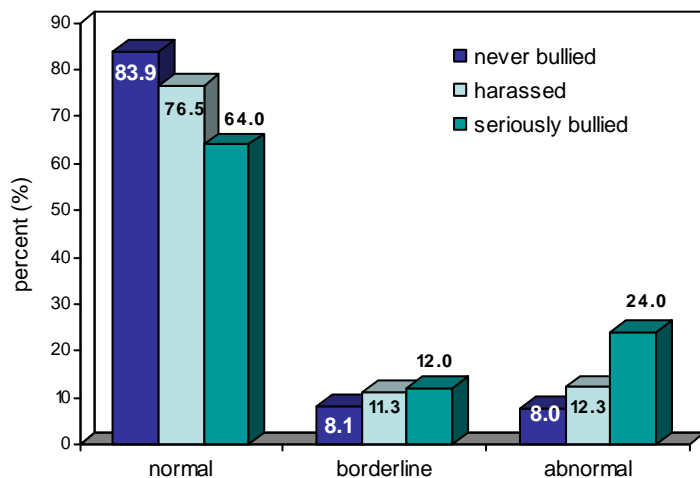
SDQ - Hyperactivity Category

About one quarter (25.8%) of students in the *seriously bullied* group were classed in the abnormal range of hyperactivity. This was a significantly higher proportion than students in the *mildly bullied* group (17.9%) and the *never bullied* group (14.6%) ($\chi^2 = 17.5$, df=4, p<0.002) (see Figure 11).

Items for hyperactivity:
- o I am restless. I cannot stay still for long
- o I am constantly fidgeting or squirming
- o I am easily distracted
- o I think before I do things (R)
- o I finish the work I am doing (R)

Figure 11 - Bully Groups – Hyperactivity
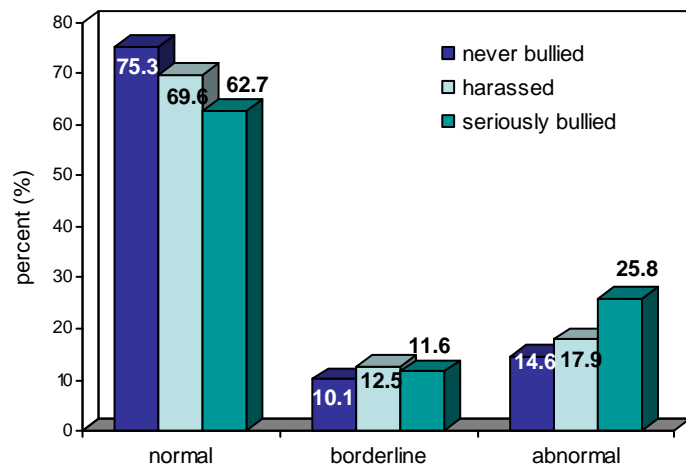
SDQ – Peer Problems Category

Over one in eight (13.3%) of students in the *seriously bullied* group were grouped in the abnormal range for peer problems. This was a significantly higher proportion than students in the *mildly bullied* group (3.7%) and the *never bullied* group (1.1%) ($\chi^2 = 129.6$, df=4, p<0.0001) (see Figure 12).

Items for peer problems:
- o I am usually on my own
- o I have one good friend or more (R)
- o Other people my age generally like me (R)
- o Other children or young people pick on me
- o I get on better with adults than with people my own age

Figure 12 – Bully Groups – Peer Problems
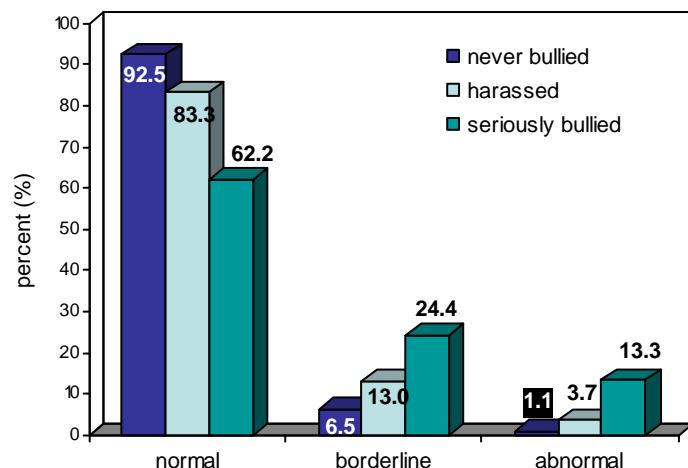
SDQ – Pro-social Category

There were no significant differences between groups on the SDQ Pro-Social Category (χ^2 = 4.8, df=4, p<0.31). Over 70% of students in each bully group were rated normal on the pro-social scale (see Figure 13).

Items for pro-social scale:
o   I try to be nice to other people
o   I usually share with others
o   I am helpful if someone is hurt, upset or feeling ill
o   I am kind to younger children
o   I often volunteer to help others

Figure 13 – bully Groups – Pro-Social
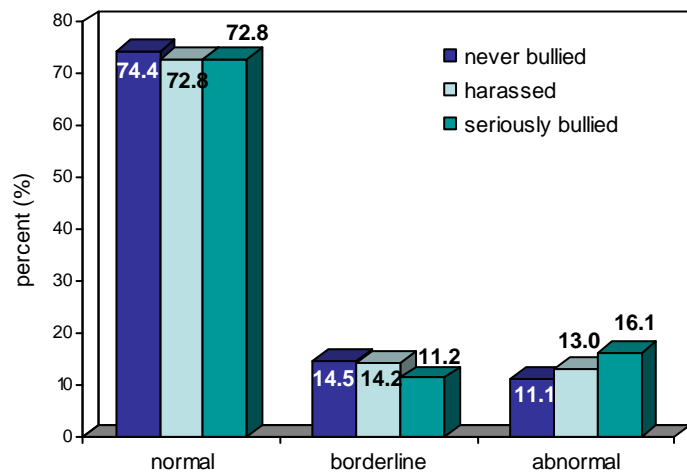
Classroom Behaviour

An indication of disruptions to learning due to bullying was evidenced by responses to questions which asked about classroom behaviour such as concentration, "trying hard" and misbehaving in class.

Could not concentrate because of bullying

There were significant differences in self-reported levels of concentration for students in the different bully groups (Kruskal-Wallis: χ^2 = 109.6, df=2, p<0.0001). Nearly one third (30.4%) of *seriously bullied* students reported that they could not concentrate on their school work *pretty often*, *very often* or *almost all the time* because of bullying (see Figure 14). Only about ten percent of students in the other groups reported that this was the case.

Figure 14 – Because of bullying – couldn't concentrate on school work.

14
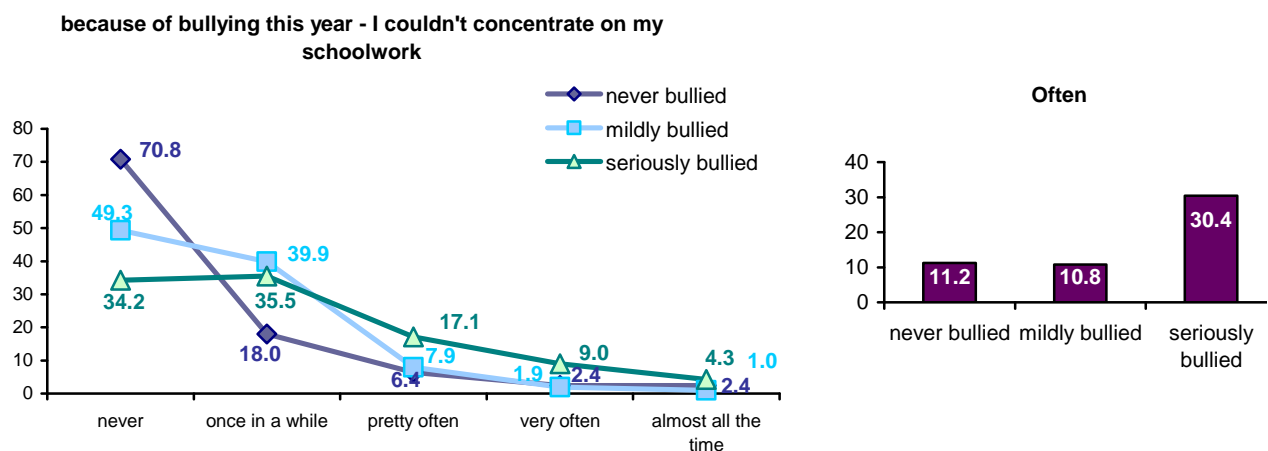
Did not try as hard at school work because of bullying

Over one third (34.8%) of *seriously bullied* students also reported that they didn't try as hard at their school work as they could have *pretty often*, *very often* or *almost all the time* because of bullying compared to about one in six (17.6%) of *mildly bullied* students and one in ten (10.8%) of those who reported that they were *never bullied* (Kruskal-Wallis: χ^2 = 130.3, df=2, p<0.0001) (see Figure 15).

Figure 15 - Because of bullying – didn't try as hard at school work
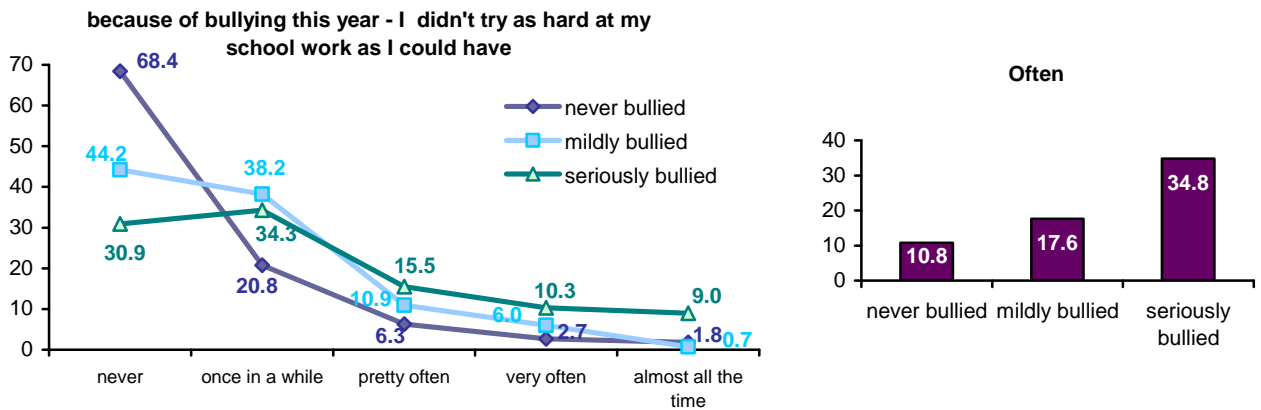
Misbehaved in Class because of bullying

Misbehaving in class because of bullying was more likely to be conveyed by students who had been s*eriously bullied*. Of the bully groups one in five (21%) of those who had been *seriously bullied*, 14.4% of those *mildly bullied* and 10% of those who reported that they had never been bullied reported that they had misbehaved in class because of bullying (Kruskal-Wallis: χ^2 = 60.4, df=2, p<0.0001) (see figure 16).

**Figure 16 - Because of bullying – misbehaved in class**
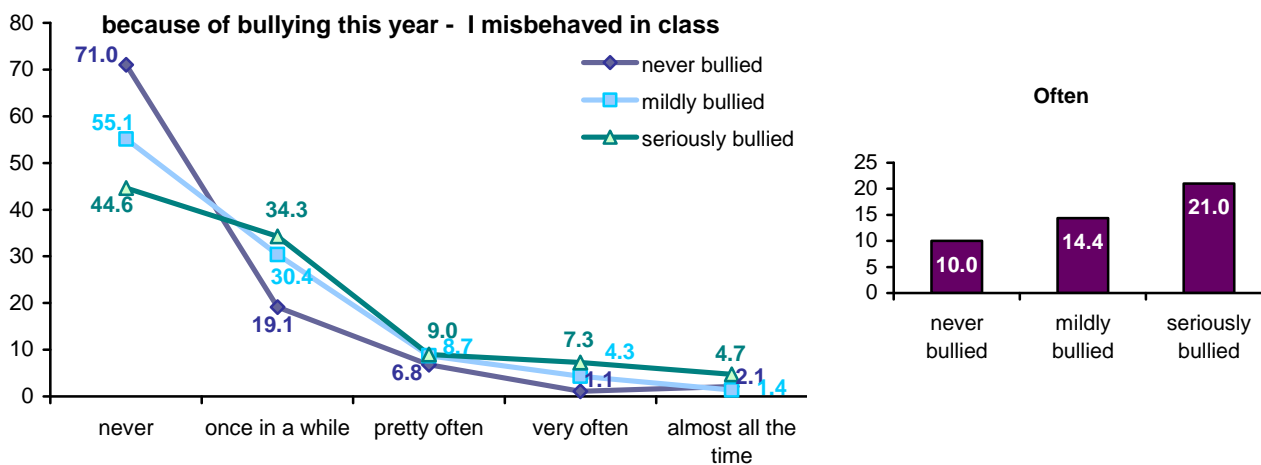
Peer Relations

Tendency to be victimised

As illustrated in the box plot (Figure 17) there were significant differences in the *tendency to be victimised* between the bully groups[2]. Overall, students in the *seriously bullied* had higher victimisation scores than the other groups and students in the *mildly bullied* group generally had higher victimisation scores than those in the *never bullied* group.

	Mean score (stand dev)
Never bullied	7.8 (2.1)
Mildly bullied	10.4 (2.3)
Seriously bullied	14.3 (4.2)

### Figure 17: Bully groups – tendency to be victimised
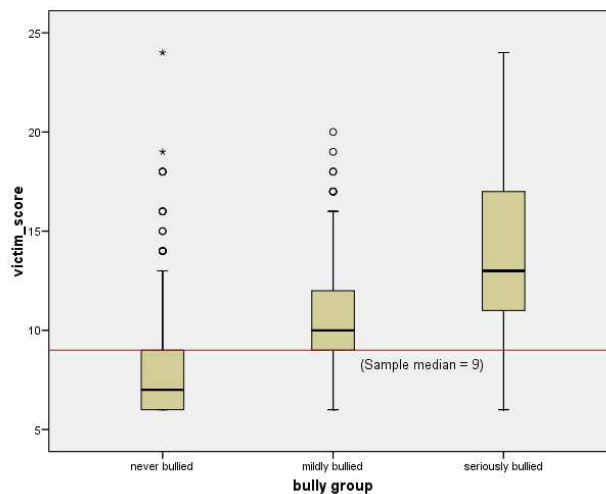
Tendency to bully

The *tendency to bully* was also significantly different between the bully groups[3] (see Figure 18). While all three groups had the same median (=7), the average score for the *mildly bullied* and *seriously bullied* groups was higher than the average score of the *never bullied* group.

	Mean score (stand dev)
Never bullied	7.5 (2.3)
Mildly bullied	7.9 (2.5)
Seriously bullied	8.4 (3.1)

Figure 18: Bully Groups – tendency to bully
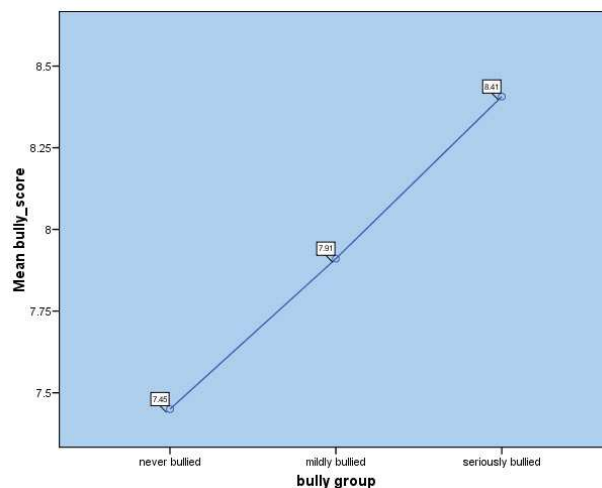
Tendency to be pro-social

There were no significant differences in the *tendency to be pro-social* between the bully groups[4] (see Figure 19).

	Mean score (stand dev)
Never bullied	11.8 (2.3)
Mildly bullied	11.6 (2.3)
Seriously bullied	11.8 (2.6)

Figure 19: Bully Groups – tendency to be pro-social

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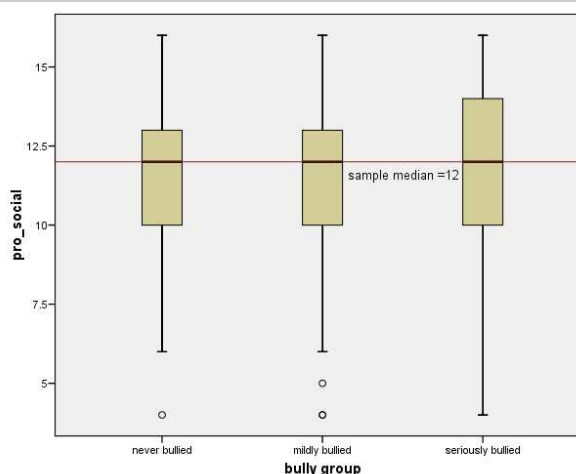
[2] Kruskal Wallis, χ^2 = 572.2, df=2, p<0.0001
[3] Kruskal Wallis, χ^2 = 31.4, df=2, p<0.0001
[4] ANOVA, F(2, 1346) = 0.40, p<0.67

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Discussion

According to research undertaken internationally the prevalence of victimisation in schools varies from 5% to 20%, with an average of 11% (Nansel et al, 2004). Thus, if participants in the *seriously bullied* group are considered to be victims, then the prevalence of victimisation would be within this range at 17.4%.

However, it may not be valid to consider that all participants in the *seriously bullied* group are victims. There is a high probability that members of the *seriously bullied* group (as well as the *mildly bullied* group) could be bully-victims, particularly given the finding that of all the groups, the *tendency to bully* was highest in this group (see Figure 18). Thus, it is more likely that the prevalence of victimisation for this sample would be much less than 17%.

The gender composition of bully groups is not consistent with findings that males are more likely to be bullied than females. This could be due to a better understanding amongst participants who had been exposed to bullying programs in their schools that bullying includes relational aggression, such as exclusion and rumour spreading, and not just physical or verbal. This would mean that more participants would have a greater awareness that they had experienced bullying by peers.

There was a difference in the age composition of the bully groups, with younger children comprising the *never bullied* group. This could be attributed to the greater proportion of year 7s in this group who were yet to enter into high school and begin experiencing bullying as new students work out the "pecking order". This and Year level difference is consistent with Slee's (1995) finding that bullying is greatest in first two years of secondary school.

The number of friends reported by the different bully groups is also consistent with the literature. Children with social skills are able to make and keep friends and this may act as a deterrent against victimisation. Boulton, Trueman, Chau, Whitehand and Amatya (1999) investigated the "friendship protection hypothesis" and found some evidence to support the notion that young people with reciprocated best friends were less likely to be victimised. They stressed the importance of quality friendships where betrayal is unlikely and conflict is minimised. Future research might enquire about the quality of friendships rather than ask about *how many* friends one might have and investigate the association with victimisation.

The findings provide further support for the suggested link between mental health problems and bullying. According to these results nearly one quarter of the participants who reported that they had been *seriously bullied* would have been flagged for referral for psychiatric or counselling follow up, particularly for conduct problems and hyperactivity. However since these findings did not differentiate bullies, victims and bully-victims, the level of abnormal mental health issues for these groups is not known. The findings suggest an association between being seriously bullied and hyperactivity, conduct problems, peer problems and emotional problems, but whether bullies, victims or bully-victims might be prone to one or more abnormalities on these sub-scales requires further research.

While other researchers have found that referral for psychiatric consultation was more likely for youths involved in bullying (Dawkins, 1995; Kumpulainen et al 1998) a Finnish study by Sourander, Helstela, Helenius and Piha (2000) found evidence to suggest a persistence of these disorders into later adolescence. This suggests that early detection and referral of bullies, victims and bully-victims with these abnormalities would be beneficial.

The SDQ has been used in this research as suggested by Percy et al, however the limitations of the SDQ should be noted. The SDQ is only indicative of mental health disorders and it is not perfectly accurate. Goodman, Ford, Corbin and Meltzer (2005) suggest setting higher cut-offs if false positives are to be avoided and future research should consider local norms to determine more appropriate cut-offs for the sample population in question.

A greater proportion of students in the *seriously bullied* group reported that they didn't try as hard at school as they could have and this suggests that bullying might effect academic motivation, which in turn could

result in poorer academic performance. In addition, experiencing bullying was also negatively associated with learning as more students in the *seriously bullied* group reported that it interfered with their concentration. These findings are supportive of the poorer scholastic performance of those involved in bullying reported by other researchers (Andreou et al, 2000; Goodenow, 1993; Wentzel, 1991). Once again, however, it would be important to tease out this association with bullies, victims and bully-victims.

The results suggest that there may be a relationship between mental health status and bullying. Kaltiala-Heino et al (2000) are not clear about the direction of causality with regard to bullying and mental health disorder, suggesting that "victimisation may be a precursor of mental disorders" (p.662) although it may work both ways. They surmise that bullying may reflect the participants problems and their incapacity to successfully resolve the issues rather than as a direct result of the bullying action. Kokkinos and Panayiotou (2004) also suggest that psychological disturbances should be examined as possible causes of bullying, as those with mental health issues may be inclined to bully others and those with mental health issues may be bullied by others because of their issues. In addition those with mental health issues may experience victimisation as well as being a bully. More research is required to understand the direction of causality of bullying and mental disorders and only research which considers the different bullying participant groups (bully, victim, bully-victim) could provide further insight into this complex issue.

Additional rationale for undertaking future research which classifies students as bullies, victims and bully-victims is to see how they are placed in the SDQ categories. Haynie, Nansel and Eitel (2001) found that bullies are more likely to experience conduct problems, while Kumpulainen et al (1998) found that bully-victims are more likely to be hyperactive. This alternative approach could be used to test the replication of these findings.

Conclusion

This study supports many of the findings by other researchers and adds to the "scarce" literature on the relationship of mental health and bullying. The findings indicate that those who are seriously bullied are more likely to be screened as 'abnormal' on the SDQ and its sub-scales. This research also supports findings that suggest a link between bullying and poor academic performance. However, the question of the direction of causality between mental health and bullying remains unanswered.

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