



# Do teachers really underestimate the prevalence of bullying in schools?

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## Abstract

Previous studies undertaken internationally have concluded that teachers commonly underestimate the prevalence of bullying among students at their schools. Evidence supporting this claim is based upon findings that estimations of bullying prevalence derived from the self-reports of individual students are higher than the estimations made by teachers. However, this conclusion was not sustained when both teachers and students were asked to estimate the overall prevalence of bullying at their school. Students ( $N=1688$ ) and teachers ( $N=63$ ) at 36 government schools in Australia were asked to indicate how often they thought students at their school were bullied in nine different ways by other students. Constituted as a reliable 9-item scale, teachers obtained significantly higher prevalence scores on this measure ( $p < .001$ ) and also on five of the nine measures of specific forms of bullying ( $p < .01$ ). An examination of available results for 16 schools indicated that higher estimates of bullying prevalence were made by teaching staff representatives at 13 of these schools ( $p < .01$ ). It was concluded that the claim that teachers underestimate bullying prevalence is not supported when the perceptions of teachers and students are assessed using the same demonstrably reliable measure; indeed, the results suggest that currently teachers in Australia may over-estimate bullying prevalence. The higher estimates of bullying prevalence provided by teachers in this study may be attributed in part to their beliefs about the prevalence of school bullying derived from media reports rather than from their awareness of how often individual students are bullied.

**Keywords** Bullying · Perception · Teachers · Students · Bullying prevalence

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## 1 Introduction

It has been concluded in numerous studies that teachers underestimate the prevalence of bullying among students at their school. This is a serious matter in that it suggests that teachers are commonly unaware of the magnitude of a problem that has reportedly contributed to a deterioration in the wellbeing and mental health, both short and long term of numerous students who have experienced peer victimisation (Suzet et al. 2015). As a consequence, it might be inferred that teachers need to be better informed of the true situation and encouraged to take appropriate action. Strategically, teachers and school counsellors are best placed to address the problem, through preventive methods, as in encouraging prosocial behaviour, and reactively through case interventions. Such efforts on the part of schools require a realistic appreciation of the prevalence of bullying that is taking place among students, especially as schools are seen as having moral and legal responsibility to do what they can to prevent its occurrence and to address cases that come to their attention. (Essex 2011; Butler 2006). But are teachers really deficient in their awareness of the prevalence of bullying? This article critically examines the evidence for the assertion that schools underestimate the prevalence of bullying and presents a new study that seeks to shed more light on this important question.

Bullying has been defined in general terms as ‘the systematic abuse of power’ (Smith and Sharp 1994, p. 2). It presupposes an imbalance of power in which the perpetrator(s) engage repeatedly in aggressive behaviour that is intended to dominate another person another person or persons. Such behaviour may be overt, as in face-to-face physical attacks and verbal insults or threats, or covert, as in deliberate exclusions, spreading rumours and the use of cyber technology to upset someone. Bullying may be distinguished from conflicts between individuals who are seen as having equal strength or power (Olweus 1993). The perpetrator of such behaviour is commonly referred to as the ‘bully’; individuals who are treated in such ways as ‘victims’. Some students known as ‘bully-victims’ fit both categories, that is, they are bullied by some other students and also engage in bullying others. According to Solberg et al. (2007), these students constitute between 10 and 20% of the student population directly involved in bullying at school. A further category of person relevant to bullying is the student bystander, that is, students who observe bullying behaviour in progress. They constitute a mixed group, with some observing passively, others supporting the victim and yet others actually encouraging the bully or bullies, in which case they may be seen as acting the role of the bully (Pöyhönen et al. 2012).

It is commonly assumed that estimates of bullying prevalence derived from student reports and judgements provide the ‘gold standard’ as far as reports of student bullying are concerned; that is, their reports reflect the actual situation. Many students experience peer-bullying directly and they observe it happening more closely than do teachers. Hence the question of whether teachers underestimate or overestimate the prevalence of student bullying is commonly obtained by comparing teacher estimates with those obtained from students.

Studies comparing prevalence estimates from students and school personnel (mainly teachers) have over the last 25 years have been undertaken in six different countries: England, the USA, Norway, Finland, Kenya and Australia. Three different procedures have been undertaken in conducting surveys in order to make comparisons. First, there have been surveys in which individual students have been asked how often they have been bullied at school over a given period. The results have then been compared with teachers' estimates of the *overall* prevalence of bullying at their school. Secondly, there have been surveys about how often individual students have been bullied (as described above) and the results compared from surveys in which teachers have been asked to estimate how often they think *each individual* student has been bullied. Thirdly, there have been studies in which both students and teachers have been asked to provide a general estimate of the prevalence of bullying at their school. These studies are summarised below.

## **2 Studies in which results from student reports of being bullied were compared with teacher estimates of the over prevalence of bullying at their school**

An early study reported by Pervin and Turner (1998) was based on results from Year Eight students (N=147) attending a large comprehensive school in England. Students were asked: 'Do you consider that you have ever been bullied?' Staff members (N=13) were asked to say approximately what percentage of their pupils they thought had been bullied. 44.3% of students said they had been bullied. Each of the 13 staff members estimated the percentage of children being bullied at less than 20%. The authors concluded that the extent of bullying is 'grossly underestimated by teaching staff' (p. 19).

Stockdale et al. (2002) conducted surveys with 739 fourth, fifth and sixth grade students from seven rural, elementary schools and 37 teachers. Students were asked how many times in the last week they had been bullied, using sets of items relating to verbal and physical forms. Response categories provided were: None; 1–2 times, 3–5 times, 6–8 times, more than 8 times. Teachers were asked to indicate the frequency with which they had observed bullying behaviours among all schoolchildren. It was reported that 'students tended to report higher prevalence of bullying than parents or teachers' (p. 266).

In a large scale study in the USA, Bradshaw et al. (2007) surveyed 15,185 students (Grades 4–12) from 119 schools and staff (N=1547) from 75 elementary schools, 20 Middle Schools and 14 high schools. Students were asked to say how often they had been bullied during the last month. Response categories were: not at all, once a month, 2 or 3 times during the month, once a week, several times a week. Staff were asked to say what percentage of students they estimated as having been bullied at least two or three times during the past month. Results indicated that 23.2% of students reported they had been bullied at least that often. A high proportion of teachers (71.4%) estimated that less than 15% of students were bullied that often. The authors concluded that school staff 'grossly underestimated the prevalence of students frequently involved in bullying' (p. 376).

In Norway Lohre et al. (2011). surveyed 417 students (Years 1–10) and 402 teachers from three schools. Students were asked in a questionnaire whether they had been teased or left out at school so as to feel bad. Response categories were: ‘never’, ‘seldom’, ‘sometimes’, ‘every week’ and ‘about every day’. Younger children were assisted by nurses in answering questions. Teachers were asked to make corresponding estimates. Mean scores on a 5-point scale were slightly higher for teachers (1.79) than for students (1.71). However, percentages of students reporting being frequently bullied, defined as ‘every week or more often’ were higher for students (4.1%) than for teachers (2.2%). In this study no general conclusions about the comparative estimates of bullying prevalence were drawn.

In Finland Frojd et al. (2014) examined data obtained from students attending Year Eight (14–16 year old) in 232 Secondary schools in Finland in 2005–2006 and from the principals of the schools. Students were asked how often they had been bullied during the ongoing school term. Response categories were: many times a week; about once a week; less frequently; and not at all. Being bullied about once a week or more was defined as ‘frequent’. Principals were asked: ‘What was the prevalence of *frequent bullying*, that is, being bullied once a week or more often during the school term?’ The most common response from students was 7–8%. The most common for Principals was 1–2%. It was concluded that ‘using pupil-reported bullying as the reference group, the principals were found to significantly underestimate the proportion of pupils frequently bullied in their schools’ (p. 475).

In Kenya Ochura (2014) surveyed students (N = 447) from Years 1 and also from 47 Secondary Schools and 47 Deputy Heads and 47 Heads of Guidance and Counselling at the schools. Student were asked: ‘Have you been bullied?’ Staff were interviewed and asked to say whether bullying took place at their school. Some 31.1% of students indicated that they had been bullied. 43.7% of Heads of Guidance and Counselling and 50% of Deputy Heads of School reported that no bullying had taken place in their schools. It was concluded that the prevalence of bullying in the schools was underestimated by staff.

### **3 Studies of student self-reports of frequency of being bullied at school and teacher perceptions of how frequently each student had been bullied at the school**

In a study conducted in Finland Ronning et al. (2009) obtained self-reports on being bullied from 2946 boys from a large nation-wide survey conducted in 1989. Students were asked to say whether other children bullied them ‘almost every day’, ‘sometimes’ or ‘do not usually bully me’. Teachers were asked the same questions specifically about each child in their class. It was reported that percentages of students reporting being frequently bullied (‘almost every day’) was 6.6% compared with the teachers’ estimate of 2.3%. It was concluded that teachers tend to report a lower prevalence of students being bullied than that based on student self-reports.

Totura et al. (2009) in the USA surveyed 1442 students and 57 teachers from 11 Middle Schools in a rural/suburban school district. Following a procedure devised by Solberg and Olweus (2003), students were asked to indicate how often they had

been bullied or bullied others. Those indicating that they had been bullied 2–3 times a month or more but did not bully others were categorised as ‘victims’. Corresponding teacher-reported assessments were also undertaken using the same measure, modified to ask teachers about each student’s involvement in bullying/victimization. Teachers identified 23% of the students as ‘victims’; results from student self-reports indicated that 59% saw themselves as ‘victims’. It was concluded that teachers underestimated the proportion of students who were being victimised by peers at school.

Demaray et al. (2013) surveyed students and staff at one school in the United States: a private K-8 school. Responses were obtained 137 students in Grades 3–8 and six teachers. Students were asked to say how often they had been bullied in the past couple of months. The response categories were: 1, ‘has not happened to me in the past couple of months’; 2, ‘has happened only once or twice a month’; 3, ‘has happened 2 or 3 times a month’; 4, ‘has happened about once a week’; and 5, ‘has happened several times a week’. Using equivalent questions teachers were asked to estimate how often each child had been bullied. Mean scores for both boys and girls derived from student responses were significantly higher than those derived from teachers’ estimates:  $p < .001$ . The authors concluded that ‘teachers underestimate their children’s victimisation’ (p 2009).

In a study in the USA reported by Newgent et al. (2009) 4th and 5th grade students ( $N=378$ ) at four elementary schools were asked to indicate how often they had been bullied in three different ways: verbally, physically and relationally. A 3-point scale was employed to assess prevalence: (1) never (2) sometimes (3) a lot. Teachers ( $N=20$ ) rated the extent to which each student was being bullied at their school using the same measures. Combining and averaging scores for the three items, the mean scores for students and teachers were identical at 1.52. For verbal bullying the mean score for teachers was slightly higher at 1.59 compared with 1.52 for students (Newgent et al., Table 2, p. 12). Evidence from this source does not suggest that teachers underestimated the prevalence of bullying among the elementary school students.

#### **4 Studies of perceptions of both school staff and students of the prevalence of bullying at their school**

In the United States Buckman (2011) analysed data collected in 2006–2007 from 905 ninth grade students from four secondary schools and 211 teachers from the same schools as the students. Both students and teachers were asked to estimate how often they thought bullying occurred at their school. Response categories ranged from 1 (none) to 5 (all the time). For teachers the mean score was 3.73,  $SD=1.01$ ; for students, mean was 3.64,  $SD=1.13$ . It was concluded that teachers were slightly (non-significantly) more likely to report a higher prevalence of bullying.

Barrows (2013) reported results for 376 students in grades 6–8 and 19 staff at a US High school. Students and staff were presented with scenarios describing a bullying event and asked to say how often they had heard about a similar thing happening at their school. The response categories were: Never, once a week, several times

a week, most days. Some 75% of staff reported that they heard about a situation of bullying 'almost daily' compared with 53% of students. However, 28% of students reported that they rarely heard of such bullying, compared with 4% of teachers (as inferred from Fig. 2, p 50). The author concluded that student and adult perceptions of the bullying were 'consistent'. (p. 7), implying that similar conclusions regarding prevalence could be drawn from the responses of teachers and students.

Klein and Cornell (2010) reported on findings from a survey conducted across 291 schools. Teachers (N=2353) and ninth grade students (N=7431) answered the same questions about the prevalence of students being bullied at their school. A seven-item scale was used for this purpose. Each item consisted of a statement to which respondents were asked whether they 'agreed strongly', 'agreed', 'disagreed', or 'disagreed strongly', for example, whether students at their school were teased for their clothing or personal appearance. The scale was reported as being reliable with Cronbach alpha coefficient of .77 for students and .87 for teachers. Results for teachers and students were averaged across the participating schools. The mean scores were similar: for teachers, mean = 16.76, SD = 1.52; for students, mean = 16.70, SD = 1.02,  $df = 9782$ ,  $p > .05$ .

In summary, previous studies have generally supported the view that teachers underestimate the prevalence of bullying in their school. This was evident in five of the six studies in which results from student self-reports of being bullied were compared with teacher estimates of the overall prevalence of bullying at their school (Pervin and Turner, Stockdale et al.; Bradshaw et al.; Frojd et al.; Ochura). The exception, a study by Lohre et al.), did not report a difference. In studies drawing on student self-reports of frequency of being bullied at school and teacher perceptions of how frequently students each student had been bullied at the school, three of the four reported that teachers underestimated the prevalence of bullying (Ronning et al.; Totura et al.; and Demaray et al. One study (Newgent et al.) reported no difference between the estimates of teachers and students. Finally in each of the three studies in which both school staff and students estimated the prevalence of bullying at their school (Buckman, Barrows, and Klein, and Klein, and Cornell) no significant difference in perceived prevalence was reported.

In reviewing these earlier studies it is evident that quite different and non-comparable research strategies have been employed, with some involving estimates of bullying drawn from self-reports of students and perceptions by staff of individual children, and others of general estimates made by students and/or staff. The studies were conducted with samples of students from a range of age/year groups in a variety of countries over a span of years, between 1998 and 2013. Different definitions and different measures of bullying were employed with most of them using single item measures and only one employing a multi-item scale of demonstrated reliability. In some cases, conclusions were drawn without any clear or acceptable statistical justification.

Given the variations in how, where, when and with whom the surveys were conducted and how the data were analysed and reported upon, comparisons between the studies cannot be made with much precision. In general, however one may conclude that the bulk of the studies (10 out of 13) in which student self-report data were used are supportive of the claim that teachers underestimate bullying prevalence. In

the three other studies in which student self-reports were not used and students and teachers bullying prevalence gave their general perception of bullying prevalence, there was no evidence that teachers underestimated the situation.

## 5 Choice of method

Which of the three methods of inquiry described above is most appropriate for making comparisons between estimates of bullying derived from the perceptions or judgements of teachers and students? The answer depends on the assumptions one is prepared to make. If it is thought that staff estimates of bullying are best derived from their awareness or otherwise of what is happening to each individual child in their class, then a research strategy that accesses teacher judgement of how each child is being treated by peers may appear most appropriate. However, it is evident that teachers are often unaware of what is happening to each individual children, especially when the bullying is covert, as is often the case (Cross et al. (2009). Not surprisingly, correlations between teacher judgements and student self-reports of prevalence have been reported as non-significant (Ronning et al.; Demaray et al.). This does not mean that teachers necessarily underestimate the general level of the bullying in the school. Their estimates of overall bullying prevalence may be related to a general impression rather than to their observations of particular students being bullied, or of incidents reported to them. The impression received is likely to be influenced by opinions expressed by others and through the media.

If the purpose of the inquiry is to examine whether teachers underestimate the size of the problem and are therefore not likely to take adequate steps to address it, then a teacher's not knowing as well as the individual victim of bullying that he or she is being bullied is not crucial. That it is desirable for teachers to be aware of the plight of individual students is not here at issue. However if one is concerned primarily with determining whether teachers are taking the problem of bullying as seriously they should, comparisons between the general perceptions of teachers and those of students may provide the most relevant data.

## 6 The Australian study

In 2015 as part of an Australian government-funded study surveys were conducted with students and staff from Government schools with the aim of obtaining estimates of bullying prevalence in general among students. The research strategy involved asking staff and students to estimate the prevalence of bullying at their school using surveys in which the same questions were asked of the two groups. To some extent the surveys were modelled upon that employed by Klein and Connell, which was viewed as the best conducted study hitherto undertaken to assess and compare teacher and student estimates of bullying prevalence.

Nevertheless, the Klein and Connell study was deficient in several respects. First, their definition of bullying extended beyond bullying as it is commonly understood. As they explain, questions in their survey upon which they based their conclusions

about the prevalence of bullying were not limited to a narrow definition of bullying which requires a power imbalance and repeated acts of aggression' (Klein and Connell, p. 939). When researchers adopt an unorthodox definition of a concept, comparison with findings from other studies is problematic. Secondly, items included in the new study were written to apply to highly specific forms of bullying for example, to 'teasing' because of one's clothes or appearance. Specifying one possible reason for a behaviour can result in attenuated evidence of this form of bullying. In any case, teasing is not always be experienced as bullying (Haugh 2017). Thirdly, the new study included no reference to cyber bullying which has become increasingly relevant in assessing bullying prevalence (Selkie et al. 2016).

## 7 Aim

The general aim of this study was to question the claim made in earlier studies that teachers tend to underestimate the prevalence of bullying at their school. Specifically, it was anticipated that when teachers and students both provided estimates of the extent of bullying at their school the claim would not be supported.

## 8 Method

As part of a larger study of bullying in Australian schools (see Rigby and Johnson 2016), students and teachers were asked to complete on-line questionnaires containing questions which sought to assess their perceptions of the prevalence of bullying at their school. In addition, some staff members, selected by the school principal, were asked to provide an estimate of bullying prevalence at their school and to arrive at a consensus following group discussions involving a small number of colleagues.

### 8.1 Measures

The assessment of bullying prevalence was based on a set of questions adapted from Cross et al. (2009). Preliminary to asking questions about bullying, teachers were provided with a description of what constituted bullying as follows:

Bullying occurs when a more powerful person or group of persons repeatedly seek to upset hurt or intimidate somebody. It is NOT the same thing as occasional quarrelling between people who are about equally matched.

A student-friendly version of the above was provided for students, accompanied by a series of illustrations of different forms of bullying relating to the particular items that were to follow. Teachers and students were asked to indicate how often in their experience each of nine forms of bullying occurred at their school. (1) Ignored, left out on purpose or not allowed to join in. (2) Hit, kicked or pushed around, (3) Lies or nasty stories told to make other kids not like them



(4) Made afraid of getting hurt (5) Made fun of and teased in a mean and hurtful way (6) Sent harassing texts or emails (7) Cruel things said on-line or on a social network such as Facebook (8) Sexual harassment by another student, (9) Harassing of students because of their race.

The response categories were: 'never', 'sometimes', 'quite often' and 'very often'. Responses were scored 1 (never) to 4 (very often). Constituted as a nine-item scale—the *Perceived Prevalence of Bullying Scale* (PPBS)—the reliability as answered by both students and teachers was high: for students coefficient alpha was 0.88 (N = 1606); for teachers, 0.86 (N = 57). In addition to the answers obtained from questions about bullying, respondents were asked whether they attended or were employed at a Primary or Secondary school.

## 8.2 Samples

The total sample consisted of 1688 students in Years 5–10 attending selected mainstream, co-educational government school in Australia. The sample was one of convenience rather than random, consisting of students from 36 schools in six of the eight Australian educational jurisdictions that agreed to take part in the survey. As described in the Results section, the numbers of students answering particular questions varied between 1644 and 1655. Of these 1606 students answered all the questions on the PPBS. Responses from teachers to questionnaire items were obtained from 61 to 63 staff members, with 57 of them answering each one of the questions. Finally, a sub-sample of students and teachers provided data containing scores on the PPBS that were available from the same schools. This data set included results of students from 16 schools of which eleven were primary and five secondary. The subset of student data comprised 1156 students, some 71.98% of all students who completed the PPBS. Numbers of students responding in each school varied between 26 and 294. The BPPS score for teachers was provided by each of the 16 schools based upon a consensus in responding to the questionnaire items obtained through group meetings. Typically these meetings involved three or four teachers nominated by the Principal.

## 8.3 Ethics

Approval to conduct the study was obtained from the Human Research Ethics Committee of the University of South Australia under whose auspices the research was conducted. In addition, ethics approval was obtained from each of six educational jurisdictions facilitating the research. Parental permission for students to be involved was sought using an 'opting in' procedure; that is, students could take part in the project only with the expressed approval of their parents. All respondents were informed that they could withdraw from the project at any stage.

## 8.4 Analyses

Statistical analyses included comparisons of student and teacher estimates applying Chi square for individual questionnaire items and *t* test for comparisons of means on the PPBS. Spearman rank order correlation was applied to examine the order of perceived prevalence of kinds of bullying reported by teachers and students. The Wilcoxon signed rank test was used in examining differences between students and teachers for each of the 16 schools on the PPBS. In reporting levels of statistical significance no correction was used for multiple comparisons, as recommended by Rothman (1990).

## 9 Results

### 9.1 Perceptions of school staff and students regarding the prevalence of bullying in general at their school

On the measure of overall perceived bullying, the Perceived Prevalence of Bullying Scale (PPBS), for teachers the mean score was 18.84,  $SD=3.86$ ,  $N=57$ ; for students the mean score was 15.87,  $SD=4.92$ ,  $N=1606$ . Mean differences were tested by *t* test for independent samples:  $t=4.51$ ,  $df=1661$ ,  $p<.001$ . Combining results for all schools, teachers were significantly more likely to estimate the extent of the bullying as higher than that estimated by students.

### 9.2 Comparisons of scores of teachers and students on 9 items of the PPBS

Further comparisons were made between teacher and student estimations of bullying for each of the nine forms of bullying. The measure used in this comparison was the frequency with which respondents indicated that the bullying was happening 'very often' or 'quite often', these categories being combined (see Table 1).

Differences between the estimates of bullying prevalence were significantly higher for four forms of bullying: being ignored, hit or kicked; stories spread about one; and being hurtfully teased. On other items the differences were not significant. Teachers and students ranked the prevalence of different forms of bullying similarly. By Spearman rank order correlation,  $r=.90$ ,  $p<.001$ .

### 9.3 Comparisons of PPBS scores of teachers and students at the same schools

Results were available from 16 schools which met the criteria of (1) having provided school estimates of bullying prevalence based on small group discussions and arrived at a consensus and (2) at least 25 students having completed the PPBS at the school. Of these schools, eleven were primary and five secondary. This subset of student data comprised 69.9% of the total number of students who

**Table 1** Frequencies of students at the school being bullied 'often' according to students and teachers on nine forms of bullying

Forms of bullying	Students	N	Teachers	N	p
1. Ignored/excluded	19.5 (3)	1653	31.7 (4)	60	*
2. Hit/kicked	14.9 (4)	1655	42.6 (2)	61	***
3. Stories spread	30.7 (1)	1649	40.0 (3)	60	**
4. Made afraid	12.2 (5)	1648	18.3 (5)	60	*
5. Made fun of	26.3 (2)	1644	49.2 (1)	61	***
6. Harassing text	8.9 (7)	1648	10.0 (6)	60	ns
7. Cruelty on line	12.2 (5)	1653	10.0 (6)	60	ns
8. Sex harassment	5.0 (9)	1645	5.0 (9)	63	ns
9. Racial harassment	5.1 (8)	1650	5.1 (8)	59	ns

Significance of differences between results for students and teachers assessed by Chi square

ns = not significant; \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$

Rank order of the reported frequencies given in (parenthesis)

**Table 2** Comparison of estimates of bullying at individual schools according to (i) school staff and (ii) students

(i) School staff estimate <sup>a</sup>		(ii) Student PPBS		
		Mean	SD	N
Primary schools				
A	18	18.01	3.91	55
B	20	16.18	4.74	109
C	18	15.93	4.69	26
D	15	13.59	2.65	73
E	24	15.05	4.29	40
F	18	15.50	6.34	36
G	15	13.69	3.33	29
H	15	16.53	3.08	30
I	18	12.57	3.00	82
J	23	16.24	4.24	71
K	25	17.01	4.85	75
Secondary schools				
L	17	14.19	3.40	57
M	16	11.54	3.62	59
N	16	17.26	5.51	294
O	21	15.63	6.41	30
P	17	16.28	5.15	90

By Wilcoxon signed-rank test,  $W = 10$ ,  $z = 2.99$ ,  $p = .0027$ , two tail test

<sup>a</sup>The total score provided from each school by school staff was based on a group consensus of answers to the PPBS questions

answered the PPBS. The results for scores on the PPBS for students and staff at the same school are given in Table 2.

Comparisons on perceived prevalence of bullying according the teachers and students across the 16 schools indicate that in 13 of the 16 schools the estimation made by schools (through school staff representatives) was higher than those made by students. By Wilcoxon signed ranks test,  $W = 10$ ,  $z = -2.999$ ,  $p < .01$ .

## 10 Discussion

The results in this study are at odds with most of the previously reported studies in which it was claimed that teachers underestimate the prevalence of bullying between students at their school. Results from the Australian study in which teachers and students each made estimates of the overall prevalence of bullying at their school support the opposite conclusion: that teachers are more inclined to estimate the prevalence of bullying as higher than that estimated by students. This conclusion is supported by results obtained from data pooled from 36 schools and also from a sub-sample of this data from 16 schools for which results were compared for both students and teachers at the same schools. It seems likely that differences in findings in the research literature and reported conclusions about the prevalence of bullying as estimated by teachers and students are related to the methodology employed in addressing the question. Findings from the Australian study suggest that when both students and teachers provide general estimates of bullying prevalence, there is no evidence that teachers underestimate the prevalence of bullying at their school.

Unlike previous studies in which both students and teachers have provided estimations of the overall prevalence of bullying at their school the Australian study also provided comparisons regarding specific forms of bullying. These included both direct forms of bullying, as in verbal abuse and physical bullying, as in hitting or kicking, and indirect forms, as in ignoring, excluding and spreading rumours. Students and teachers were in agreement in estimating that physical bullying was less prevalent than verbal and indirect forms—a view supported by previous studies, for example, by Wong et al. (2008) and Bowen and Holcom (2010). However, on five of the nine items staff estimates of prevalence were higher than those made by students. No differences were found in relation to cyber bullying, possibly because much of it may occur outside the school environment and is not experienced or observed by most students or by staff. Sexual harassment and racial harassment were reported as occurring by only a small number of students and teachers, thereby reducing the possibility for significant student/teacher differences to emerge. These results suggest that teacher/student differences in estimations of bullying prevalence may be present in most but not all forms of bullying.

One of the possible criticisms regarding the validity of comparing student estimates of bullying prevalence is that teachers and students understand and define bullying in different ways. It has been claimed that teachers adopt a more comprehensive view of bullying as including relational bullying such as social exclusion, while students restrict their definition to direct bullying, as in verbal and physical abuse (Naylor et al. 2006). However, two findings in this study suggest

otherwise. First, the reliability or internal consistence of the nine-item scale is over .85, as assessed by coefficient alpha, was high for both students and teachers. Secondly, the rank order correlation for the reported prevalence of the forms of bullying provided by students and teachers, was high (over .90). The significant differences on the scale employed in this study can reasonably be attributed to differences in estimates of bullying frequency rather than to alternative ways of defining bullying.

Apart from differences from earlier studies comparing estimates of bullying prevalence between students that may be attributed to methodology and measurement issues, the discrepant findings may be due changes in public consciousness of what is happening in relations between students since 1998 when the first relevant study was reported by Pervin and Turner in England. Especially through media sources, the impression has been conveyed of a growing endemic of bullying in countries around the world. As a consequence the belief has grown that bullying must have become more and more prevalent. This belief is contrary to empirically based reports that in some countries, including Australia, that bullying has in fact been reducing over the last 15 years or so (Rigby and Smith 2011; Finkelhor 2013; Renshaw et al. 2016). However, this view is not shared by many Australian teachers. In response to a survey question as to whether bullying behaviour was increasing 40% of a sample of 451 Australian teachers indicated that they thought it *was* increasing (Rigby 2017). In the same survey, 38% of the teachers reported that their primary source of information was from either the general media or the internet, as distinct from university courses or professional reading. It seems likely that the pressure of expressed opinion regarding the increasing prevalence of school bullying, rather than an awareness of incidents of bullying, may have led to a possible overestimation of bullying prevalence on the part a substantial proportion of teachers. Students too could have been influenced in their judgements by social pressure often promoted by the media. However, attention to media reports and comment on bullying is more likely to be paid by teachers than by students, especially as teachers in Australia, as in many other countries, have been exhorted by Departments of Education to take action to address the problem of bullying (Cross et al. (2011). Further research is needed to identify how teachers come to form their opinions about bullying prevalence, especially in discovering how they make up their minds on this question.

Teacher beliefs about bullying prevalence may be due not only to the influence of media reports and commentary on the so-called growing 'epidemic' of bullying, but also by the culture in which judgements are made. This could include in some countries an opposite effect: a high level of denial of the existence of bullying among educators, as reported in Kenya, where approximately half of the school authorities claimed that no bullying took place at their school (see Ochura). Given that bullying prevalence and ways of addressing bullying often differ cross-culturally (see Scheithauera et al. 2016), generalisations about whether teachers underestimate bullying prevalence may be culture-specific and depend in part upon the motivation of teachers in making the judgements. It is therefore important to emphasise that the results from this study should be interpreted as relevant to a particular time and place that is, Australia in 2016, rather than generalised across countries.

## 11 Strengths and limitations

The main strength of this study lies in its use of a survey method in which students and teachers provided responses to the same questions regarding their perception of the overall prevalence of bullying at their school. It also makes use of a conceptualisation of bullying that is widely accepted among educators and a multi-item measure of bullying that was demonstrated as reliable for both students and teachers, having good internal consistency. Its main limitation lies in providing comparisons of perceptions of bullying prevalence for only a limited number of schools where teacher and student responses could be matched. Finally, it does not purport to generalise about teachers and students worldwide, recognising that beliefs about bullying prevalence are liable to change over time and be influenced by cultural factors.

## 12 Conclusions

The results from this study are inconsistent with most previous studies which have reported that teachers tend to underestimate the prevalence of bullying behaviour at their schools. However, they do agree with those previous studies in which both students and teachers are asked to estimate the overall extent of bullying at their school in concluding that teachers do not underestimate the prevalence of bullying. Drawing on an orthodox definition of bullying and utilising a reliable multi-item measure of bullying prevalence, results from the Australian sample, suggest that teachers may estimate bullying prevalence significantly higher than do students. It is suggested that the rapid rise of concern about school bullying in recent years, as reflected and communicated by the media, may have influenced teachers in their perceptions of the seriousness of the problem and affected their judgements of the prevalence of bullying at their school.

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