



The confounding and problematic nexus of defined and perceived bullying

Grace Skrzypiec^{*}, Mirella Wyra, Michael J. Lawson

College of Education Psychology and Social Work, Flinders University, Australia

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ABSTRACT

Background: To assess the prevalence of bullying and identify victims in need of support, it is important that researchers, administrators, policy makers and people involved in bullying, all have the same conceptual understanding of bullying. It is not uncommon for individuals to perceive that they have been bullied when, according to the operational definition, they have *not technically* been bullied. Categorised according to the alignment of perceived and technical bullying, five peer aggression groups were examined for differences in the level of harm experienced. The importance of elements in the definition of bullying for perceived and technical bullying was also investigated.

Methods: Using a cross-sectional survey design, 843 Australian students aged 11–16 completed the Student Aggression and Victimisation Questionnaire (SAVQ – Skrzypiec, 2015). The SAVQ measures the intent, harm, repetition, and relationship and power imbalance between victim and perpetrator, associated with experiences of peer aggression, as well as the perception of being bullied. It enables the identification of perceived and technical bullying experiences.

Results: Only a small group of youth consistently perceived bullying when they were, by definition, being bullied. Approximately one in three students reported that, based on their perception of being bullied, they were bullied even though they were not according to the criteria defining bullying in the academic literature. Youth consistently reported experiencing harm, even if they were not technically bullied, though technically being bullied was perceived to be especially harmful. Similarly, students who did not recognise their experience of peer aggression as bullying when technically it was, also reported being harmed.

Conclusions: This study addresses an important debate in the literature concerning how best to define bullying; moreover, findings have the potential to inform bullying interventions. Students harmed by peer aggression in any form (technically bullied or not) should not be neglected because of the nature of definitions and tools of measurement being used.

1. The confounding and problematic nexus of defined and perceived bullying

Imagine a medical specialist discussing treatment with a patient where each of them, as well as some other medical practitioners, has a different understanding of the illness. How can the doctor prescribe a treatment and then, relying on the patient's feedback, determine whether the illness has been successfully treated? Furthermore, consider a doctor's frustration and difficulties with treatment when a patient does not acknowledge their illness. This medical situation parallels the situation that continues to exist in bullying research. For decades research on the construct of bullying has occurred within a context of significant concerns about how bullying is defined, how it is understood by those connected with it, and how it is assessed (Carrera et al., 2011; Rupp

et al., 2018; Volk et al., 2017).

The commonly accepted definition of bullying is that it is the concomitant presence of intended harm, repetition, and power imbalance between victim and aggressor (Smith et al., 2012), although more recently some researchers have expressed uncertainty about whether these constructs are necessary elements to define acts of peer aggression as bullying (Volk et al., 2017). Carrera et al. (2011) for example, have argued that a serious single incident of abuse may cause suffering and hurt in the same manner as repeated acts of aggression. Furthermore, many researchers have been critical of the difficulties associated with identifying and measuring the power imbalance and intended harm that comprise bullying criteria. Whether a power differential exists may be difficult to detect (Carrera et al., 2011), while identifying a power imbalance can be quite subjective and can vary between observers

^{*} Corresponding author at: College of Education Psychology and Social Work, Flinders University, GPO Box 2100, Adelaide, South Australia 5001, Australia.
E-mail address: grace.skrzypiec@flinders.edu.au (G. Skrzypiec).

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(Donoghue & Raia-Hawrylak, 2016). Moreover, there may be other reasons why individuals cannot defend themselves such as being surprised, fatigued, or having a commitment to non-violence (Finkelhor et al., 2012). Measures that do “not adequately differentiate instances of bullying from, for example, playful interactions or fights between students” (Shaw et al., 2013, p. 1047) are also problematic.

The US National Center for Injury Prevention and Control, Centers for Disease Control and Prevention and the United States Department of Education, sponsored Gladden et al. (2014) to find a uniform definition of bullying. After extensive consultation with leading experts in the field, Gladden et al. provided the following definition of bullying

Bullying is any **unwanted aggressive behaviour(s)** by another youth or group of youths who are not siblings or current dating partners that involves an **observed or perceived power imbalance and is repeated multiple times or is highly likely to be repeated**. Bullying may inflict **harm** or distress on the targeted youth including physical, psychological, social, or educational harm. (p. 7).

As can be seen, this uniform definition of bullying does not differ from the one generally accepted by the research fraternity. The only difference is that this definition emphasizes that the aggression is unwanted and does not involve siblings or current (not past) dating partners, which is generally considered implicit in the definition used by researchers. Gladden et al.’s definition aligns with that provided by Olweus (1993), one of the first researchers to examine the bullying phenomenon, who pointed out that bullying involves three criteria, where “(a) It is aggressive behaviour or intentional “harm doing”, (b) which is carried out “repeatedly and over time” and, (c) in an interpersonal relationship characterized by an imbalance of power” (p. 1173). In the current study, to ensure full coverage of the multi-dimensional aspects of the bullying construct, we integrated the definitions provided by Gladden et al. (2014) and Olweus (1993) and developed a technical definition of bullying as experiences of repeated, deliberate harm, involving a victim who is not a relative (i.e., sibling, parent) or romantic partner and is less powerful than the perpetrator.

There has been a proliferation of media stories about bullying and much attention has been paid to it on social media (e.g., Facebook’s bullying prevention hub: <https://www.facebook.com/help/420576171311103/>). One consequence of this is that most people have a concept of what bullying entails. While the extent to which such concepts align with the generally accepted definition used in research on bullying is not known, research dating across the last decade would suggest discordance between some people who have participated in research studies and academic researchers, in their understandings of bullying (Cuadrado-Gordillo, 2012; Frisén, Holmqvist, & Oscarsson, 2008; Skrzypiec et al., 2015; Vaillancourt et al., 2008). In the context of such findings Finkelhor et al. (2012) have concluded that outside of academia, the generally accepted technical definition of bullying (as repeated harmful aggression where a power differential exists between victim and perpetrator) is not well understood. The importance of this is two-fold.

Firstly, knowing that there may be a conceptual disjunct about bullying between academics and others is important when assessing the effectiveness of an anti-bullying program. That there is a common understanding of the phenomenon in question between those experiencing bullying and reporting on it and those assessing it, is paramount. Sound evaluation research assumes that clear technical definitions of constructs are held in common by both research participants and researchers (Newcomer et al., 2010). In this context, a major challenge faced by evaluators tasked with determining the effectiveness of a program designed to reduce the incidence of bullying is to ensure that the level of bullying before and after an intervention is accurately measured and that any changes are not due to measurement error or changes in students’ understanding of bullying. For example, a student’s conceptualisation of bullying might change if during the intervention the elements that characterise bullying (repeated, intentional harm, involving a non-relative or romantic partner, where there is a power

imbalance between victim and bully) are explained and one realises that what they had experienced would not be considered bullying. The outcome is that such a student would indicate post-intervention that they had not been bullied. Having stated that they had been bullied pre-intervention, this change in conceptualisation would lead to data showing a decrease in bullying at the post-intervention assessment suggesting an otherwise effective anti-bullying program.

Secondly, accurate measurements are essential as, through the evaluation process, as well as generally, it is important to identify individuals in need of assistance because they have experienced bullying or perceive that they have been harmed by their experience. The identification or classification of people as bullies or victims has practical consequences for the people so classified, as well as for people like teachers and parents who are responsible for assisting young people involved in bullying. Thus, whether an individual has been technically bullied according to the agreed defining criteria, or whether an individual perceives that they have been bullied, has implications for how bullying incidents are handled by school staff and other authorities. Differences in the way that an aggressive incident is viewed by student and teacher will determine the actions that will be taken to address the incident (Maunder et al., 2010; Sawyer, et al., 2011) and such actions might not be regarded as adequate by either the student or the teacher.

This study sought to contribute to our understanding of how students perceive bullying in order to improve the process of evaluating anti-bullying interventions and identifying students in need of assistance. In any context, there will be individuals who perceive that they have been bullied, and that perception may or may not align with the technical definition of bullying. It may be the case that some individuals will believe that they have been bullied irrespective of whether they have experienced repeated incidents or are aware of any power imbalance between them and the perpetrator. Furthermore, there will be others who despite their experiences being characterised as deliberate, repeated, harm, by a person, or persons, who are not a relative or someone with whom they are romantically involved and who is less powerful than them, may not recognise that they have been bullied. In our study, individuals with peer aggression experiences that align with the technical definition of bullying are said to have experienced “technical bullying”.

In considering the way that students perceive bullying and the alignment of that perception with the technical definition of bullying, it became evident that five different groups of students with different perspectives would emerge. Dependent on an individual’s views of their experiences of peer aggression it was apparent that we needed to

Table 1
Alignment of technically defined and perceived bullying of participants involved in peer aggression.

Student perceived that they were bullied	Student was bullied according to the definition of bullying		
	Yes	No	Sometimes Yes/ Sometimes No
Yes	Group 1: PB-TB Aligned perceived and technically defined bullying	Group 3: PB-NTB Perceived bullying, but not technically bullied	
No	Group 2: NPB-TB No perceived bullying when technically bullied	Group 4: NPB-NTB No perceived or technically defined bullying	
Sometimes Yes/ Sometimes No			Group 5: Mixed Intermittent alignment of perceived and technically defined bullying

consider the five groups shown in [Table 1](#):

- **Group 1:** One group of individuals perceive that they have been bullied and have experiences that align with the technical definition of bullying (Perceive Bullying and have Technically been Bullied (PB-TB) group).
- **Group 2:** A second group includes people who, despite their experiences directly aligning with the technical definition of bullying, do not consider that they have been bullied (No Perceived Bullying but have Technically been Bullied (NPB-TB) group).
- **Group 3:** A third group perceive that they have been bullied, but their experiences do not align with the technical definition of bullying (Perceive Bullying but there has been No Technical Bullying (PB-NTB) group).
- **Group 4:** A fourth group comprises individuals who do not perceive that they have been bullied when, according to the definition, they *technically* have not (No Perceived Bullying and No Technical Bullying (NPB-NTB) group).
- **Group 5:** The fifth group is derived of individuals with mixed responses, who *sometimes* recognise that they have been technically bullied when they have, and sometimes perceive that they have been bullied when technically they have not. We include the Mixed group category to clearly recognise respondents who are inconsistent in their reports on surveys or other measures.

It is crucial to distinguish these groups so that individuals can be identified appropriately, and where needed, offered appropriate support. It would be desirable for individuals to recognise that they have been bullied, particularly when their experiences would indicate that technically bullying *has* occurred. This is significant because we know bullying is harmful (Gini & Pozzoli, 2008; Holt et al., 2015) and indeed that it is the most harmful form of peer aggression (Skrzypiec et al., 2018). Of particular concern are individuals who are victims of bullying but do not recognise that to be the case. While currently not known from the research literature, it may be that without support these students who misperceive their bullying experiences risk maladjustment and mental health problems known to be associated with experiences of bullying. Alternatively, it could be that individuals who do not perceive that they have been bullied could be spared the negative consequences associated with bullying. In this study, we sought to examine this issue and we used the five-group framework to examine the extent to which students' perceptions of bullying were aligned with the technical definition and how the elements of that definition, including harm, might be associated with such alignment. It is not known whether individuals in the five different groups differ in their experiences of harm. For example, it is not known whether an individual who does not recognise that they have been bullied when technically they have, is less harmed than someone who perceives they have been bullied, when technically they have not. An awareness of the level of harm associated with each of the five groups has implications for helping students and designing effective interventions.

2. Measuring perceived and technically defined bullying

Identification of the peer aggression groups shown in [Table 1](#) requires an accurate assessment of technically defined bullying, as well as a measure of individuals' perceptions of being bullied. There are various approaches for measuring incidences of bullying, but self-report measures are the favoured approach and are used in approximately 80% of bullying studies (Cook, et al., 2010). The self-report behavioural questionnaire method involves participants indicating how often they have experienced or perpetrated various acts of aggression with peers during a past period. Prior to answering the questions, respondents may be provided with a definition of bullying, such as

We say a student in *being bullied* when another student, or a group of students, say or do nasty and unpleasant things to him or her. It is also bullying when a student is teased repeatedly in a way he or she does not like or when he or she is deliberately left out of things. But it is *not bullying* when two students of about the same strength or power argue or fight. It is also not bullying when a student is teased in a friendly and playful way (Currie et al., 2010, p.54).

Based on their answers, respondents are then classified as victims, bullies, bully-victims, or not involved with bullying, with an assumption that bullying has technically occurred. An example of a self-report measure is the 39-item Olweus Bully Victim Questionnaire (OBVQ) by Olweus (1996).

However, the self-report behavioural method for measuring bullying is not free from criticism. It is assumed for example, that any supplied definition of bullying will be read, understood, and applied in responding to the ensuing questions and that at that point in time respondents will reconceptualise any previous conceptions they had about bullying (Skrzypiec et al., 2019). Furthermore, while questionnaire items tap into the frequency of peer aggression (i.e., repetition), because the concept of a power differential has been addressed in the definition provided for respondents, a measure of power imbalance is not generally undertaken (Cascardi et al., 2014). A measure of deliberate intent to harm is also not often used. Moreover, it is not uncommon for young people to experience playful aggression amongst friends (Skrzypiec et al., 2019) and this too is not considered in many measurements of bullying. Whether bullying has technically occurred therefore may be cast into doubt.

There are instruments however, such as the California Bullying Victimization Scale (CBVS), developed by Felix et al. (2011), that address some of the weaknesses in measures of bullying. Questionnaires such as the CBVS, seek to specifically measure bullying criteria and determine whether bullying has technically taken place. In our research we built on this questionnaire. We separated the definition of bullying into measurable components of intent, harm, repetition, and power imbalance, and asked participants to define the relationship between victim and perpetrator to determine whether bullying had technically occurred according to our definition. To assess students' perception of bullying, we then asked respondents to indicate whether they perceived that their experience of peer aggression meant, according to them, that they had been bullied.

We followed the approach used in a recent global study by Skrzypiec et al. (2019), that involved over 7,000 students from 11 countries where researchers investigated peer aggression and bullying by measuring incidents of aggression involving a non-relation or romantic partner according to the criteria of intent, harm, repetition, power imbalance. That study found that while aggression that met the bullying criteria was the most harmful form of aggression, other forms of aggression were also described as harmful by the participants (see Skrzypiec et al., 2019). Since harm is subjective, the person experiencing the aggression is well positioned to know if it has been harmful or not. Indeed, according to Thomson and Gunter (2008), behaviours not intended to harm an individual may be perceived as harmful by them.

In this study we sought to examine the number of individuals experiencing peer aggression who would be classified into one of the five groups in [Table 1](#): PB-TB (perceived bullying when was technically bullied), NPB-TB (technically bullied, but not perceived as bullying), PB-NTB (perceived bullying, but was not technically bullied), NPB-NTB (no perception of being bullied when technically was not bullied) and MIXED (sometimes perceived bullying when was technically bullied and sometimes perceived bullying, but was not technically bullied). We expected the NPB-NTB group to be the largest as typically the prevalence of bullying in Australia is less than 50% (Cross et al. 2009). As harmful peer aggression would be difficult to dismiss, we expected that the NPB-TB group would be the smallest group with few members. We were uncertain of the size of the other groups, but we expected that they

would not be as large as the NPB-NTB group or as small as the NPB-TB group. We examined the level of harm reported by individuals in each of the groups to determine if there were differences in the general level of harm between the groups.

We also sought to examine gender differences, as findings from the research literature are mixed. Some researchers (e.g., [Olweus, 1997](#); [Skrzypiec et al., 2011](#)) have found that males are more likely than females to be involved in bullying as both victims and perpetrators of bullying, particularly physical bullying ([Juvonen & Graham, 2014](#)). [Hanish and Guerra \(2004\)](#) have suggested that the physical and cognitive maturity of males as they enter adolescence equip them to become involved in bullying. However, [Veenstra et al. \(2005\)](#) have argued that often bullying studies are hampered by common method variance and when accounting for this they found females were more likely than males to be victims of bullying. A systematic review of the literature on this issue by [Smith et al. \(2019\)](#) concluded that overall, males were slightly more likely than females to be victims of bullying, although they reported that the minimum difference was most likely around the age of 13 years. We therefore expected that males would be more likely than females to be involved in bullying and would thus report a greater propensity of peer aggression, perceived and technical bullying.

The discovery that females are more adversely impacted by experiences of bullying than males is by contrast, a robust finding in the extant literature. While males and females may experience the same types of peer aggression, females are more vulnerable and are hurt more by it ([Leaper & Brown, 2008](#); [McMaster et al., 2002](#); [Prinstein & Cillessen, 2003](#)). More recently, gender differences in the mental health consequences of bullying and cyberbullying have been found in large studies of young adolescents in China ([Yang et al., 2021](#)) and Germany ([Baier et al., 2019](#)) where females were more likely to experience adverse psychological outcomes than males. We therefore expected that females in each of the groups would be more likely than males to report experiencing harm from perceived as well as technical bullying. Given that female adolescents are generally more vulnerable than males, we reasoned that in an effort to protect themselves from being hurt, females would be more perceptive of bullying and would be more likely than males to label and therefore perceive acts of peer aggression as bullying.

In addition to our investigation of the five groups, gender differences and differences in the level of harm experienced by students in each group, we sought to estimate the extent to which students' reports of the technical criteria - intent, harm, repetition, and power imbalance experienced in association with each act of aggression - could be used to predict levels of technically defined and perceived bullying. In doing so, the most salient of the four criteria contributing to respondents' perception that they had been bullied, compared to being bullied according to the technical definition, could be examined. As [Felix et al. \(2011\)](#) noted, it is possible that the components of the definition of bullying "may be unequally weighted in their impact" (p. 245). An insufficient number of participants in each age group however, prevented an analysis of age differences. Information gathered from our study is intended to inform academics, educators, and other stakeholders about the way in which bullying is perceived and to provide insights about bullying measurement.

3. Methods

A quantitative cross-sectional survey design was utilised as data were anonymously collected from middle-school students in Australia conveniently recruited from four Australian schools (one private metropolitan, public metropolitan, public rural, and private remote school) that agreed to participate in the study. Students completed the pen and paper questionnaire in class, in exam-like conditions at the end of the 2018 academic year (October-November) under the supervision of their class teacher. To ensure anonymity, students placed their questionnaire in an envelope, sealed it, and placed it in a pile that was subsequently brought to the university for data processing.

3.1. Participants

Participants ($n = 843$) in Grades 6 to Grade 10 were aged 11–16 years ($M = 13.79$, $SD = 1.2$ years), and 50.6% were female ($n = 411$, missing = 3.6%). Students were from diverse cultural backgrounds including Australian (67.5%), British (9.7%), European (7.4%), Aboriginal or Torres Strait Islanders (2.5%), Asian (2.5%), Indian (1.7%) and Middle Eastern (1.5%). Students' socio-economic backgrounds were varied and ranged from low to high.

3.2. Measures

We used the Student Aggression and Victimization Questionnaire (SAVQ – [Skrzypiec, 2015](#)) to obtain a measure of bullying according to the criteria included in our technical definition: intentional, repeated harm with a power imbalance between victim and perpetrator where participants are not related or romantically involved. The psychometric properties of the SAVQ have shown it to be reliable with content, construct, and convergent validity (see [Skrzypiec et al., 2019](#)). One factor generic models of harm, intent, frequency of peer aggression and power imbalance have been found to have good reliability and convergent validity (see Appendix). The SAVQ is a widely used self-report behavioural questionnaire that has been translated into many languages (see [Shemesh & Heiman, 2021](#); [Skrzypiec et al., 2018](#)).

The SAVQ does not utilise an a priori definition of bullying, but asks respondents to indicate the level of intent, harm, frequency, power imbalance and relationship associated with every experience of peer aggression listed (10 victimisation and 10 bullying items) in the questionnaire. The questionnaire items include physical (being hit, kicked, pushed), relational (spreading rumours, being left out), and verbal (called names, teased) bullying. Cyberbullying is determined by asking respondents to indicate where each experience has occurred by selecting from choices of "at school", "to/from school", "at home", "online", "elsewhere" (left open for respondents to state where). The SAVQ also asks respondents to indicate whether they perceived their experience to have been an act of bullying. For the purposes of this paper, the perpetration of bullying and aggression is not considered - only victimisation is reported here.

At the beginning of the questionnaire respondents were asked to indicate if they had experienced victimisation through an act of aggression (e.g., being teased, left out, called names etc.) during the past three months by selecting "yes" or "no" as their response. Students selecting "yes" were then asked to answer questions that determined technically defined bullying using the bullying criteria. Specifically,

- **harm:** Selecting from a 5-point Likert type scale ranging from "not harmful at all" (1) to "extremely harmful" (5) students responded to the question of "How harmful was it to you?". Scores ≥ 3 were considered harmful.
- **intent:** Respondents provided an answer to the question "Did they deliberately intend to do this?" from a 5-point Likert type scale ranging from "not intentional at all" (1) to "absolutely intentional" (5). Scores ≥ 3 were classified as intentional.
- **repetition:** For each type of aggressive experience an eight-point Likert Type scale, ranging from "never" (1), "only once or twice" (2) to "more than three times a week" (8), was used to assess the frequency of the aggression, "During the last three months, how often did they do this?". An individual who experienced more than one type of aggression from the SAVQ items, was deemed to have experienced repeated aggression. Respondents who reported only one type of aggression that was experienced more than once or twice (i.e., frequency score >2) were also considered to have experienced repeated aggression.
- **power differential:** "How powerful (important, liked, strong) are you compared to the person(s) concerned?" was the question students responded to using a 5-point Likert type scale ranging from

“much less powerful” (1) to “much more powerful” (5), with a central point of “about the same” (3), to assess any power differential between the targeted individual and perpetrator. Scores <3 indicated the individual was less powerful than the aggressor.

• **relationship:** “What is your relationship with this person(s)?” with tick boxes for selecting all that applied “They are ...” best friend(s)”, “friend(s)”, “classmate/peer”, “brother(s)/sister(s)”, “parents(s)”, “teacher”, “no relationship”, “other (specify)”. The latter category allowed specification of past or current “girlfriend/boyfriend”.

• **location:** “When this happened, where was it?”, with tick boxes for respondents to select all that applied of: “at school”, “to/from school”, “at home”, “online”, “elsewhere (specify)”.

Individuals who experienced peer aggression where the bullying criteria were not met were considered to have been involved in peer aggression rather than bullying.

As a measure of perceived bullying, following the questions that asked about intent, harm, repetition and power imbalance, students were asked to indicate “How strongly do you feel that this person(s) bullied you by doing this?” on a 7-point Likert scale ranging from “very strongly disagree” (1) to “very strongly agree” (7). Scores >4 indicated a perception of having been bullied. Gender, age, name of school and Grade level data were also collected.

A pilot study of the SAVQ (Skrzypiec & Didaskalou, 2019) with Grade 6 students aged 11–12, found that respondents in this age group did not have any problems with terms such as “deliberate” and “harm”, but required guidance with the term “powerful”. Students in the pilot study suggested that words such as “important, liked, strong” should be added to aid respondents’ understanding of this concept.

3.3. Ethics

Ethics approval was obtained from the university’s ethics committee and appropriate educational jurisdictions. An “opt out” parental consent approach, where parents notified the school if they did not wish their child to participate in the study, was used. Participants provided informed consent and were not compensated for their participation. The resultant response rate exceeded 90% in all schools.

3.4. Data analysis

In the first step of the data analysis, experiences that met the bullying criteria determined technically defined bullying, while perceived bullying was established according to students’ responses to the questions about their perception of whether they had been bullied. An individual was considered to have been technically bullied if they reported at least one repeated form of aggression that met all bullying criteria. For example, if a student stated that they had been intentionally repeatedly harmed by a person less powerful than themselves who was not a relative or romantic partner for at least one type of aggression (e.g., teased, left out etc.) then they were classified as having been bullied. Similarly, if an individual perceived at least one aggressive experience as having been an act of bullying then they were categorised as having perceived that act as bullying. Respondents were then classified into one of the five groups based on the alignment of perceived and technical bullying for each type of aggression they stated they had experienced.

The number of experiences of aggression was tallied and included as an additional indicator of repetition. The maximum harm experienced during the referent period was determined by calculating the greatest level of harm reported from any of the aggressive experiences. Likewise, maximum intent and power imbalance were similarly calculated. These variables were used in a path analysis as predictors of technically defined and perceived bullying. Given that technically defined and perceived bullying, were determined according to having experienced *at least one* type of repeated peer aggression, it was appropriate to consider how one’s maximum experience of harm, intent and repetition, and

minimum sense of power, would predict technically defined and perceived bullying. Path analysis that accounted for the nested data (using the “complex” survey analysis option with the defined clustering variable as suggested by Muthén & Muthén, 2009) was used to examine predictors of technically defined and perceived bullying, using MPlus v 8.2. Accepted cut-offs for fit indices (RMSEA <0.08, CFI and TLI >0.90 and SRMR <0.08) and the chi-square test, as suggested by Kline (2015), were used to assess model fit. Descriptive statistics and analysis of variance (General Linear Model) were used to examine the relationship between technically defined bullying, perceived bullying, and maximum harm, intent, and power imbalance, as well as gender and aggression type differences. Cramer’s V, provided in the SPSS output of Chi-Square analyses, was used to assess effect size. Cramer V values ≤ 0.2 , are considered to be weak, >0.6 strong, while $0.2 < \text{Cramer’s } V \leq 0.6$ is a moderate effect size (IBM, 2022). Partial η^2 was the measure of Effect Size with accepted rules of thumb (Cohen, 1988) indicating $\eta^2 = 0.01$ a small effect, $\eta^2 = 0.06$ a medium effect, and $\eta^2 = 0.14$ a large effect.

Missing data were minimal on each question, e.g., only 2.4% ($n = 20$) did not answer all dichotomous questions (yes/no) about the aggressive experiences. Since missing data were less than 5%, which according to Schafer (1999) is inconsequential, missing data were not replaced. In some of the analyses, however, deletion of participant responses on items measuring all bullying criteria, meant complete data were not available for 19.2% ($n = 162$) of participants. These respondents could not, therefore, be classified into one of the five groups and were therefore not included in further analyses. This group of excluded respondents did not differ significantly from the other participants in terms of age and gender, and the number of self-reported experiences of peer aggression.

3.4.1. Peer aggression group classifications

Each reported experience of aggression was assessed for technically defined bullying according to the criteria and compared to the respondents’ perception of being bullied and following the criteria shown in Table 1, five group classifications were determined (see Table 1):

- **Group 1 - PB-TB:** aligned perceived and technically defined bullying. With each experience of peer aggression, respondents in this group perceived they were bullied when they had been technically bullied.
- **Group 2 - NPB-TB:** no perceived bullying when technically bullied. Experiences of peer aggression that were technically defined as bullying, were not perceived as bullying.
- **Group 3 - PB-NTB:** perceived bullying, but not technically bullied. Respondents in this group perceived they had been bullied when they were not technically bullied.
- **Group 4 - NPB-NTB:** no perceived or technically defined bullying. Respondents who neither perceived bullying nor experienced technically defined bullying.
- **Group 5 - Mixed Group:** intermittent alignment of perceived and technically defined bullying. Respondents who sometimes perceived they had been technically bullied and sometimes not.

4. Results

The results are presented in four parts. Descriptive statistics and gender comparison for all variables are provided in Part 1. Differences between the five groups are reported in Part 2, followed by findings in Part 3 of the misalignment of technical and perceived bullying according to type of peer aggression. The path analysis of the predictors of perceived and technical bullying is reported in Part 4.

4.1. Part 1

4.1.1. Experiences of aggression

Overall, more than three quarters (78.8%, $n = 664$) of students

reported that they had experienced at least one act of aggression. Females ($M = 3.73, SD = 2.72$) were more likely than males (mean = 2.49, $SD = 2.36$) to report aggressive experiences ($F(1) = 28.8, p < .001$, partial $\eta^2 = 0.035$). The number of reported experiences of aggression also decreased with age ($F(5) = 3.74, p < .01$, partial $\eta^2 = 0.023$), but there was no interaction effect of age and gender.

4.1.2. Experiences of technically defined bullying

Just under one in five (19.0%, $n = 160$) students described experiences that matched the bullying criteria at least once and were therefore classified as technically bullied. Contrary to expectations, females (26.8%) were more likely than males (11.3%) to have experienced technically defined bullying ($\chi^2(1) = 31.7, p < .001$, Effect Size (Cramer's V) = 0.198). The proportion of technically bullied students decreased by age ($F(5) = 2.51, p < .05$, partial $\eta^2 = 0.016$), and declined steadily across the teen years for both males and females. A peak in technically defined bullying was evident among 12-year-old male and female students (at the transition point to high school).

4.1.3. Reports of perceived bullying

Overall, just over one third (32.6%, $n = 295$) of students reported at least one experience of aggression they perceived as bullying. As expected, the perception of being bullied was more likely amongst females (43.8%) than males (27.8%), although the effect size was weak ($\chi^2(1) = 22.7, p < .001$, Effect Size (Cramer's V) = 0.168). The proportion of students who perceived they had been bullied decreased by age ($F(5) = 5.5, p < .0001$, partial $\eta^2 = 0.034$), and declined steadily across the teen years for both males and females. Perceived bullying peaked for 12-year-old females, then declined and slightly rose among 15-year-old females.

4.2. Peer aggression group classifications

Table 2 shows the alignment of students' perception of technically defined/not defined bullying, highlighting the number of students in each of the peer aggression group classifications. As shown,

- In the first cell of Table 2, 325 individuals did not perceive that they had been bullied when indeed they had not been technically bullied and comprised the NPB-NTB group (see entry for "0" Frequency of Perceptions of Being Bullied and "0" Technically Bullied Frequency in Table 2).
- The first row of Table 2 shows the number of individuals who perceived that they had been bullied (columns 1–10) but had not been technically bullied. For example, 7 individuals perceived 6 experiences as bullying, when none of them were technically bullying (see entry for "6" Frequency of Perceptions of Being Bullied and "0" Technically Bullied Frequency in Table 1).
- In the first column of Table 2, 34 individuals did not perceive that they had been bullied when technically they had. For example, 5 individuals who had technically been bullied twice, did not perceive being bullied on any occasion (see entry for "0" Frequency of Perceptions of Being Bullied and "2" Technically Bullied Frequency in Table 2).
- As shown along the diagonal of Table 2, 40 individuals perceived that they had been bullied each time they technically had been bullied. For example, 5 individuals reported perceptions of being bullied 4 times, and were technically bullied 4 times (see entry for "4" Frequency of Perceptions of Being Bullied and "4" Technically Bullied Frequency in Table 2).
- Shown to the left of the diagonal in Table 2 are individuals who perceived less bullying than technically occurred. For example, 3 individuals perceived that they had been bullied once when technically they had been bullied 3 times (see entry for "1" Frequency of Perceptions of Being Bullied and "3" Technically Bullied Frequency in Table 1). Numbering 15 in total, this group made up the rest of the MIXED group.
- Shown to the right of the diagonal in Table 2 are individuals who perceived more bullying than technically occurred. For example, 4 individuals perceived that they had been bullied 5 times, when technically they had only been bullied on 3 occasions (see entry for "5" Frequency of Perceptions of Being Bullied and "3" Technically

Table 2
Alignment of technically defined and perceived bullying.

Technically Bullied Frequency	Frequency of Perceptions of Being Bullied										
	0	1	2	3	4	5	6	7	8	9	10
0	325	84	29	17	18	8	7	4	0	0	0
1	26	19	14	13	1	3	2	1	1	0	0
2	5	3	8	7	4	1	1	2	1	2	0
3	2	3	2	5	2	4	3	0	0	0	0
4	1	0	1	1	5	4	1	0	0	0	0
5	0	0	0	0	0	0	1	0	0	0	0
6	0	0	0	0	0	2	1	0	3	0	0
7	0	0	0	0	0	1	2	1	0	0	0
10	0	0	0	0	0	0	0	0	0	0	1

Missing = 12

Group	N	percent	Description
PB-TB	40	6.1%	Technically bullied and perceived it
NPB-TB	34	5.2%	Technically bullied but did not perceive it
PB-NTB	167	25.6%	Perceived bullying but not technically bullied
NPB-NTB	325	49.8%	Perceived not bullied when not technically bullied
Mixed	71	10.9%	Perceived more bullying than technically occurred
	15	2.3%	Perceived less bullying than technically occurred
Total	652	100.0%	

Bullied Frequency in Table 2). This group totalled 71 and comprised part of the MIXED group.

- A summary of the tallies is shown at the bottom of Table 2. As shown
 - **PB-TB group:** Only a very small proportion of respondents (6.1%, $n = 40$), perceived that they had been bullied on every occasion that they technically had been bullied.
 - **NPB-TB group:** A smaller proportion (5.2%, $n = 34$) perceived the opposite (i.e., that they had not been bullied when technically they had).
 - **PB-NTB group:** A perception that bullying had been experienced when technically it always had not was evident among approximately one quarter (25.6%, $n = 167$) of young people who experienced some form of peer aggression.
 - **NPB-NTB group:** Alignment of perceptions and technically defined bullying was found for nearly half (49.8%, $n = 325$) of those who had experienced some form of peer aggression who did not perceive that they had been bullied, when indeed they technically had not.
 - **MIXED group:** Over one in eight (13.2%, $n = 86$) respondents misaligned their experiences sometimes (i.e., at least once), perceiving that they had been bullied sometimes and not others, when technically defined bullying had occurred and vice versa. However, at least in one peer aggression experience, students in the MIXED group showed alignment in their perception of bullying and technical bullying.

Overall, an assessment where the perception of being bullied or not bullied, always aligned with technically defined bullying, was made by just over half (56.1%, $n = 365$) of the participants, while there was at least one alignment among students in the mixed group (13.2%, $n = 86$). For the remainder (30.7%, $n = 201$) of students who had experienced some form of aggression, there was always a misalignment of technically defined and perceived bullying, where students perceived they had been bullied when technically they had not, or vice versa.

4.3. Part 2

4.3.1. Peer aggression group classifications

Gender Differences. Male and female membership in each of the groups varied significantly ($\chi^2(4) = 29.2, p < .0001$, ES (Cramer's V) = 0.215). As shown in Table 3, males and females were equally likely to recognise bullying when it technically occurred, however, males (58.7%) were more likely than females (41.9%) to recognise they had not been bullied, perceiving that bullying had not occurred, when technically it had not. Furthermore, females (19.2%) were more likely than males (6.9%) to misperceive whether or not bullying had technically occurred.

Maximum Harm Differences. The maximum level of harm reported by young people varied between each of the peer aggression groups ($F(4) = 134.5, p < .0001$, partial $\eta^2 = 0.465$). Not surprisingly, the lowest

Table 3

Peer aggression classifications of male and female participants.

	Male		Female		Total	
	Number	%	Number	%	Number	%
1. PB-TB	15 ^a	5.2	24 ^a	7.1	39	6.2
2. NPB-TB	10 ^a	3.4	20 ^a	5.9	30	4.8
3. PB-NTB	76 ^a	26.1	88 ^a	26.0	164	26.0
4. NPB-NTB	170 ^a	58.4	142 ^b	41.9	312	49.5
5. Mixed	20 ^a	6.9	65 ^b	19.2	85	13.5
	291	100.0	339	100.0	630	100.0

Each subscript letter denotes a subset of gender categories whose column proportions do not differ significantly from each other at the 0.05 level.

level of maximum harm was reported by young people in the NPB-NTB group, where bullying was not perceived and had not technically occurred, and this group was statistically different from all groups except the PB-TB group. Results illustrated in Fig. 1, show that participants who recognised that bullying had occurred (PB-TB group) generally reported the greatest level of harm. The average level of harm experienced by students in this group was significantly different from all other groups, except for the mixed group that vacillated and was not consistent in recognising whether or not bullying had technically occurred. Students in both these groups reported maximum levels of harm that were in the very, to extremely harmful range.

Noteworthy here is that individuals who perceived that they had been bullied, when technically they had not (PB-NTB) reported similar levels of maximum harm as individuals who did not perceive bullying had occurred, when technically it had (NPB-TB), although on average (being in the range of harmful to very harmful) the harm was less than that reported by the PB-TB and the Mixed group. These findings suggest that experiences of peer aggression are considered harmful by both those who have recognised it as bullying and those who have not recognised it as bullying. Similarly, individuals who perceived that they had been bullied when technically they had not, considered their experience to have been harmful.

Gender Differences of Maximum Harm. Overall, there were no statistically significant differences in the maximum level of harm reported by males and females in each of the groups ($F(1) = 0.025, p > .05$, partial $\eta^2 = 0.000$). However, a small gender peer aggression x classification group interaction effect was noted ($F(4) = 3.5, p < .01$, partial $\eta^2 = 0.022$), whereby females in the NPB-NTB group (where bullying did not technically occur and was not perceived) were likely to report a higher level of maximum harm than males in this group, although it was generally in the not very harmful to harmful range (see Fig. 2).

4.4. Part 3

4.4.1. Alignment of perceived and technically defined bullying by aggression type

The level of alignment of students' perceptions of bullying and occasions of technically defined bullying varied according to the type of aggression experienced. Over half of the students who reported being hit, kicked, pushed (58.1%), picked on (52.2%), or having rumours spread (51.3%) perceived that they had been bullied when technically they had not. The level of misalignment was lower if students had experienced being teased (27.1%) or being threatened (30.6%) (Fig. 3).

Lack of recognition of technically defined bullying occurred for each type of aggression and was substantial for situations where students were left out of a group or thought they were treated meanly. The highest percentage of students who did not think they had been bullied when they had been, were those who had been left out, as 28.6% of students who had experienced being left out did not recognise that they had technically been bullied.

Gender Differences. As shown in Table 4, males and females differed in their alignment of perceived and technically defined bullying with effect sizes that were weak-moderate. Where statistical analyses were possible, females were more likely than males to recognise that bullying had technically occurred if they had experienced verbal bullying such as being teased or called names, or if they had been picked on. Males however, appeared to be better at recognising when spreading rumours or physical bullying was not technically bullying.

4.4.2. Criteria predicting perceived and technically defined bullying

The path analysis shown in Fig. 4, shows how well intent, harm, repetition and power imbalance predicted technically defined and perceived bullying. This analysis showed that the power imbalance criterion was a significant predictor of technically defined bullying, but not of perceived bullying, while intent was a very weak predictor of perceived bullying, but not of technically defined bullying. Important

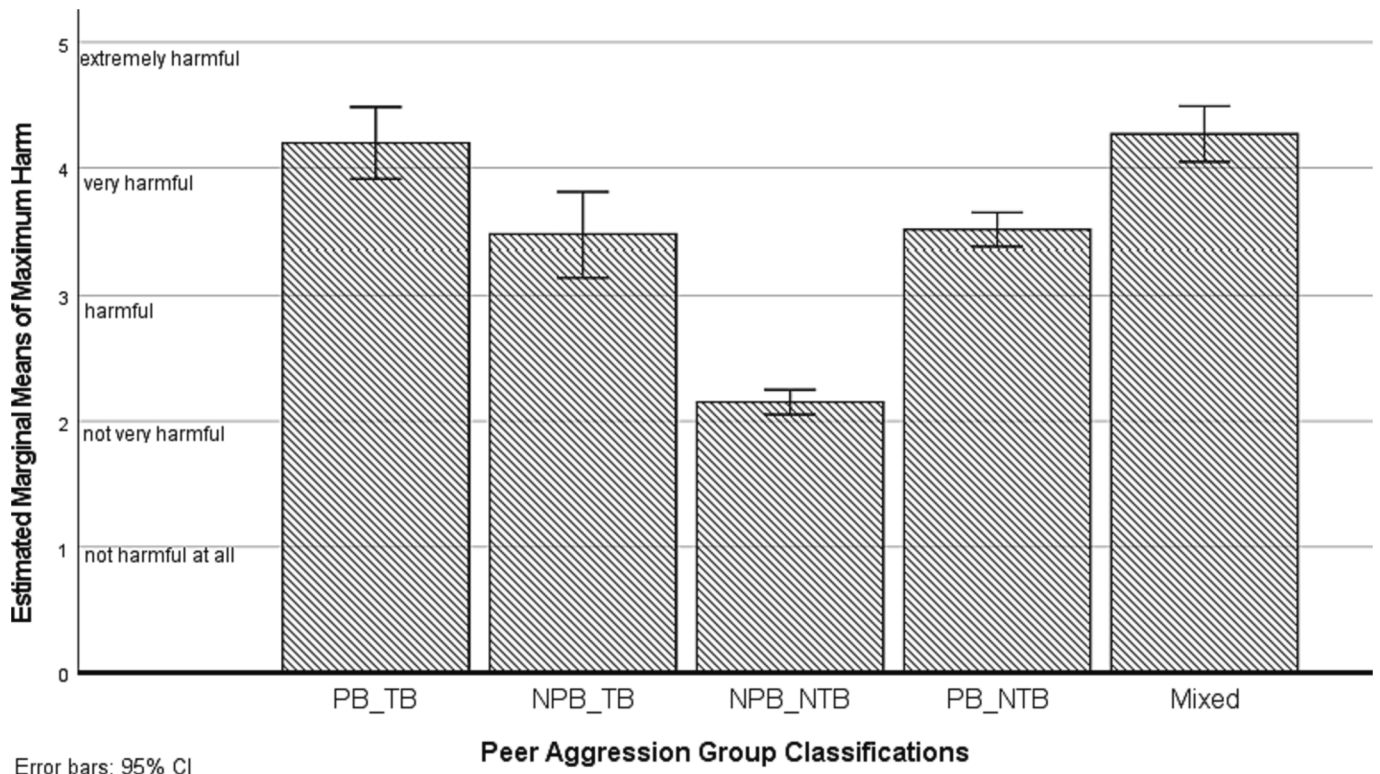


Fig. 1. Maximum Harm Reported by Participants in Each of the Peer Aggression Group Classifications.

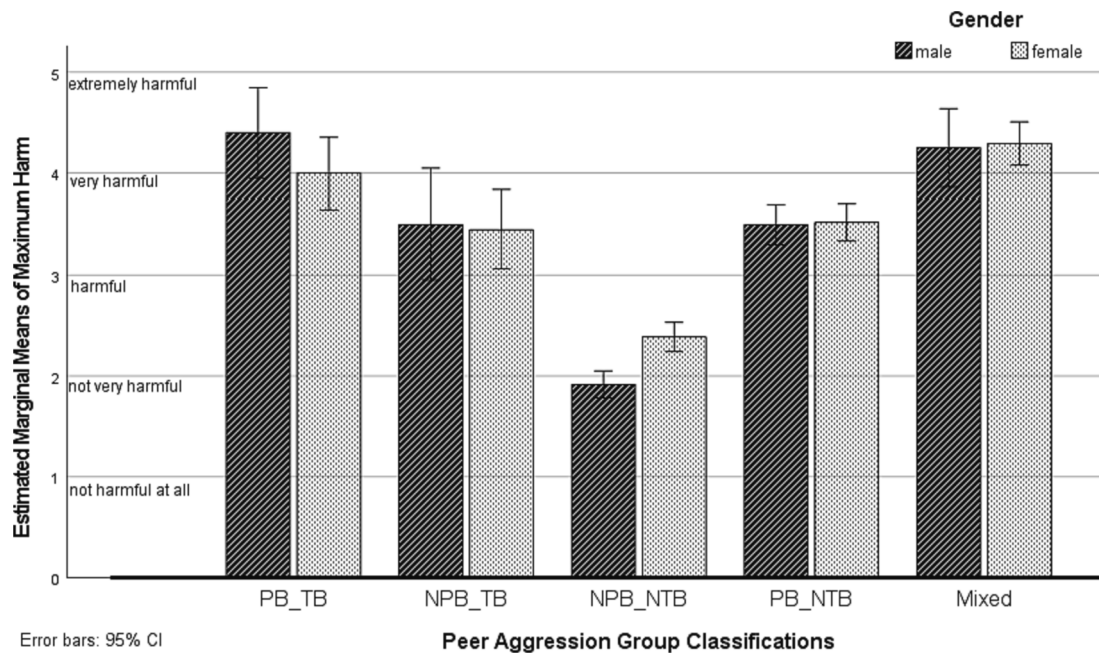


Fig. 2. Maximum Harm Reported by Male and Female Participants in Each of the Peer Aggression Group Classifications.

predictors of both perceived and technically defined bullying were repetition (i.e., the number of aggressive experiences) and the amount of harm experienced, which were both stronger predictors of perceived bullying than technically defined bullying.

The path analysis results indicate that feeling less powerful than a perpetrator, feeling harmed by the aggression, and being repeatedly targeted through a number of different types of aggressive acts, were significant predictors of technically defined bullying, accounting for

35.3% of the variance. Perceived bullying was predicted by feeling harmed and by repeated aggression, accounting for approximately half (50.1%) of the variance (intent contributed to only 0.2% of the variance). The findings suggest that a power differential was not a critical component of perceived bullying.

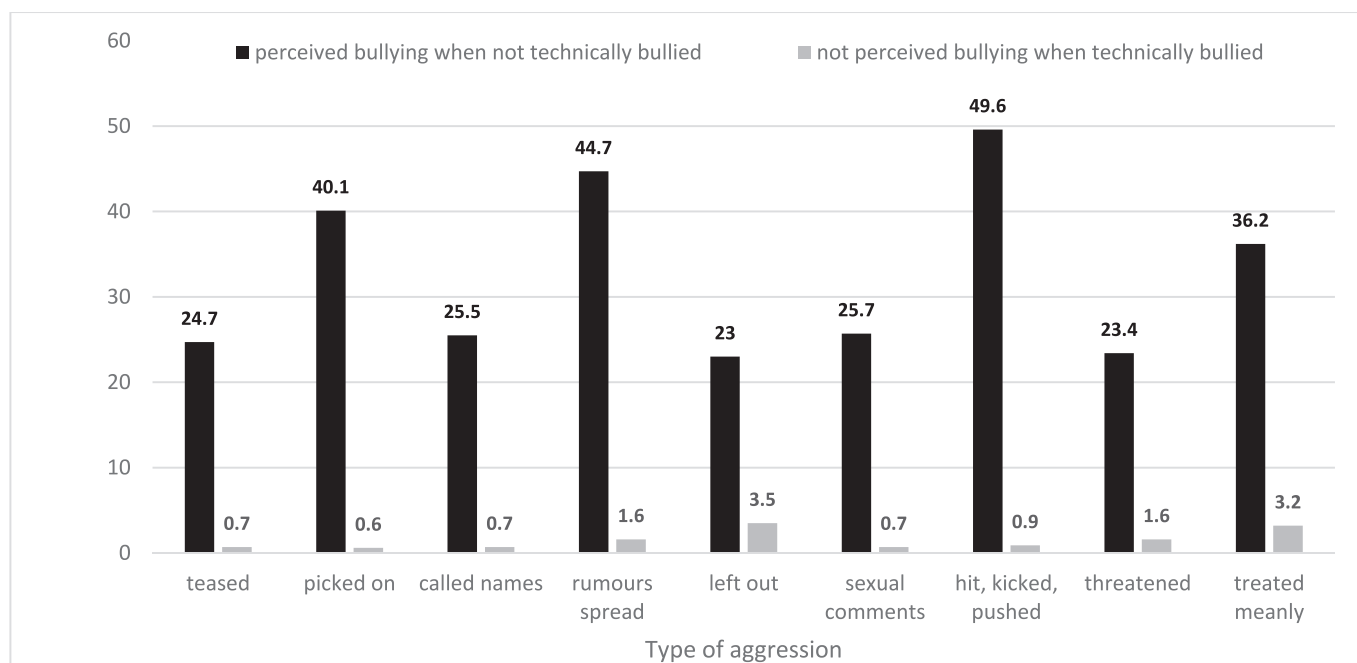


Fig. 3. Misalignment of Technically Defined Bullying and Perceptions of Bullying by Type of Aggression Experienced.

Table 4
Misalignment of technically defined bullying and perceptions of bullying by type of aggression experienced by males and females.

Type of Aggression	Gender Difference	Notes
Teased	<ul style="list-style-type: none"> Females (16.2%) more likely than males (7.2%) to perceive being teased was bullying when technically it was Males (71.1%) more likely than females (54.9%) to perceive teasing was not bullying when technically it was not 	$\chi^2(3) = 10.9, p < .05$, Cramer's V = 0.192
Picked on	<ul style="list-style-type: none"> Females (16.2%) more likely than males (7.2%) to perceive being picked on was bullying when technically it was 	$\chi^2(3) = 8.01, p < .05$, Cramer's V = 0.215
Called names	<ul style="list-style-type: none"> Females (24.8%) more likely than males (6.2%) to perceive being called names was bullying when technically it was Males (67.4%) more likely than females (49.0%) to perceive being called names not bullying when technically it was not 	$\chi^2(2) = 19.0, p < .001$, Cramer's V = 0.260
Left out	Analysis inconclusive	37.5% of cells had an expected count less than 5
Spread rumours	<ul style="list-style-type: none"> Males (55.4%) more likely than females (32.5%) to recognise having rumours spread is not bullying when technically it is not 	$\chi^2(3) = 10.6, p < .05$, Cramer's V = 0.237
Sexual comments	Analysis inconclusive	50% of cells had an expected count less than 5
Hit, kicked, pushed	<ul style="list-style-type: none"> Males (45.6%) more likely than females (24.6%) to recognise being hit, kicked, pushed is not bullying when technically it is not 	$\chi^2(3) = 8.13, p > .05$, Cramer's V = 0.267
Threatened	No statistically significant differences	$\chi^2(3) = 4.08, p > .05$, Cramer's V = 0.180
Treated meanly	No statistically significant differences	$\chi^2(3) = 5.31, p > .05$, Cramer's V = 0.155

5. Discussion

This study sought to provide insight into student perceptions of being bullied and the alignment of those perceptions with having been technically bullied. A little more than half of the participants were accurate in their classifications regarding when (technical) bullying had occurred, or not occurred, technically. In broad terms, this means that just under half were not accurate with respect to being technically bullied. This broad level finding points to the need to give further attention to bullying, especially for those in schools and homes who face the consequences of this form of peer aggression.

Noteworthy is that all students who perceived that they had been bullied reported being harmed by the experience, irrespective of whether or not they had technically been bullied. The reported harm was more severe among the two groups where there had been alignment of perceived and technically defined bullying (i.e., the PB-TB and Mixed groups). This is easily explained by the experience these (PB-TB, Mixed group) students had for at least one type of aggression where they recognised it as bullying when indeed it was, thus acknowledging that it was deliberate and repeated harm from someone they felt was more powerful than them. By contrast, students not experiencing all elements of technically defined bullying, but who perceived they had been bullied, reported being harmed, but the harm was not generally as severe as that experienced by technically bullied students. It is, however, important to recognise that the experience of harm is also reported by those students who have not been bullied in a technical sense.

In terms of considering the implications of distinguishing between technically defined or perceived bullying, the question which arises is "does it matter?". Does it matter whether young people *perceive* they have been bullied, when technically they have not or whether they do not recognise that they have been bullied, when technically they have? We suggest that it does matter.

Based on the use of the technical criteria we found that our assessments as researchers of which students had been bullied differed to an important extent from the assessments made by the students themselves. Ignoring for the moment the different patterns of aligned and misaligned perceptions, this researcher-student difference reinforces the view noted at the start of this paper that the definition of bullying is not well understood, in this case in a population where bullying often occurs. And,

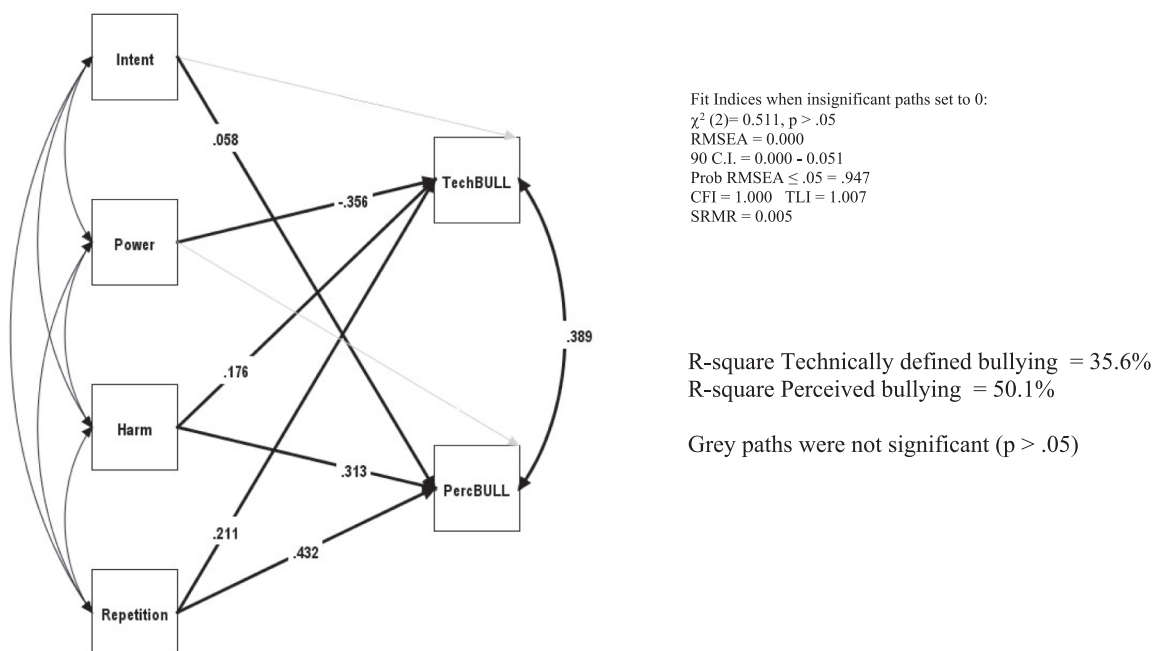


Fig. 4. Path Analysis Showing Standardized Regression Coefficients for Predictors of Technically Defined and Perceived Bullying.

this situation has both practical and theoretical implications.

One practical implication is identifying which individuals require attention and support, because they have been bullied. Of particular concern, is the small group of students classified in the NPB-TB group who generally reported significant levels of harm (harmful to very harmful), but who did not perceive that they had been bullied. Students in this group may not seek assistance, or may not come under consideration by teachers, as they have not recognised that they have been bullied. Bullying could be a normative experience for these children in the sense that they normalise negative and harmful behaviours. These children may even adopt cognitive distortions, or they could blame themselves for the bullying they are subjected to. Such students are however, at risk of the mental health and maladjustment difficulties known to be associated with experiences of bullying (Gini & Pozzoli, 2008; Holt et al., 2015). Furthermore, these students might be positioned in a way that would encourage bullying in the future, and this could exacerbate the severity of their difficulties if they remain unsupported and without help.

Likewise, students in the mixed group, who only sometimes recognise that they have been technically bullied, may be difficult to identify and support. Beyond the issue of how parents and teachers should respond in an immediate sense to these students who show inconsistent perceptions of their bullying status, there is also the matter of how educational systems should make provision for improving understandings of bullying within their teacher and student communities. This also points to the need for researchers to engage with teachers in considering how to address the issue of understanding bullying in schools. This could be an important area for future research. Future studies could also examine whether certain groups are more or less related to indices of psychological adjustment that are routinely found to be associated with bullying. Given the serious negative impacts of bullying, it would seem important to address possible issues of understanding so that policy options related to bullying become more nuanced and sensitive to the level of student understanding. Such responses will, of course, depend on how bullying is to be understood and the findings here add to concerns among researchers about this matter of definition.

In our study, we found that females were more likely than males to report experiences of peer aggression, perceived and technical bullying. While this finding was unexpected, it is not surprising. In their

systematic review of gender differences in bullying and cyberbullying, Smith et al. (2019) found that the preponderance of males as victims of bullying was not always significant, nor universal, and was dependent upon the nature of the study, how and where it was conducted. They noted that girls too are interested in social power during adolescence and that the cultural and historical context of gender socialization and normative expectations could be a contributing factor to changes in the preponderance of male victims of bullying. Females may have come to understand the use of power for dominance in their social relationships (Felix & Green, 2010) particularly through the use of relational peer aggression, while during the last decade, according to Charlesworth and Banaji (2022) equal rights and equality have shifted gender stereotypes closer toward neutrality.

Aligned with other findings in the literature, our study found that females were more likely than males to report harm from peer aggression and bullying and they were not as adept as males in recognising acts of peer aggression as not bullying when technically bullying had not occurred, particularly in regard to physical and relational bullying. However, despite this tendency to perceive acts of peer aggression as bullying, females were more likely than males to identify bullying when technically it had occurred. A heightened awareness of acts of aggression could be a means for females to protect themselves as they become vigilant in recognising when they need to report harmful peer aggression. However, more research is needed to substantiate and explain our findings through nuanced gender research that examines the specific cues used by adolescents to distinguish peer aggression from bullying.

In this study approximately one in four students (i.e., the PB-NTB group) showed a misaligned perception of their bullying status, as their experience of peer aggression was perceived as bullying when, according to the criteria defining bullying, it technically was not. Because they generally reported being harmed, these students nonetheless require our attention. However, it would be disconcerting if the greater majority of resources and support efforts were expended through attending to these students rather than those who have been technically bullied, but who may be more difficult to identify because they do not always recognise that they have been bullied (i.e., the NPB-TB group).

Furthermore, our findings suggest that approximately one-third of students are not clear about whether or not they have been technically bullied (i.e., NPB-TB, PB-NTB and MIXED groups). Overall, this shows

that the issue may not simply have to do with the conceptual definition of bullying, but with adolescents' social cognition and interpretation of social events. Future research should include a measure assessing social cognition (e.g., social information processing) to provide further insight into adolescents' interpretation of social interactions with peers. This is particularly important if adolescents' social cognitions of peer aggression broaden into other relationships such as with romantic partners. The question of whether adolescents overlook or excuse aggressive behaviour from someone they care about and love, and whether this is a possible precursor to domestic violence should be investigated.

A further implication of adolescents' misalignment of perceived and technical bullying is for research seeking to assess the prevalence of bullying, such as HBSC studies, where participants are directly asked whether or not they have been bullied. In such studies, approximately 30% of the time students will not be sure of their response. Such uncertainty casts doubt on estimates of the prevalence of bullying and makes comparisons with any previous levels of bullying prevalence misleading. Further consideration, therefore, is required of how the prevalence of bullying should be determined. If researchers use a definition like the technical definition used here, then it would seem necessary for the researchers to undertake more systematic education of students to bring the students' understanding into more effective alignment with the technical definition. This would increase the length of research but would increase confidence in the level of internal validity of the findings.

Theoretically, the misalignment of perceived and technically defined bullying poses a threat to internal validity in intervention studies. Such misaligned cases are problematic from a research evaluation perspective as a researcher cannot be certain of appropriate coverage of the population experiencing the phenomenon. Student inconsistencies in their assessment of bullying experiences create unknown errors in evaluations that seek to measure the level of bullying pre- and post-intervention. In such an environment how can an evaluator be assured of the adequacy of measures in student-reported incidences of bullying? As a corollary, how can an evaluator assess the effectiveness of an anti-bullying intervention with any level of confidence?

Furthermore, the path analysis findings here raise questions about the status that should be assigned to each of the elements of the technical definition of bullying. As expected, a power imbalance, repetition, and harm were significant, albeit weak predictors, of technically defined bullying. However, intent did not emerge as a significant predictor. The reason for this is not clear. It could be that students have difficulty in assessing the intent of a perpetrator, or that the powerlessness and harm they experience from repeated aggression outweighs their concern about intent. In instances where harm was seen to have been experienced perhaps judgements are not made about the intentions of those perpetrating the harm or, are redundant. This suggests that this pattern of relationships between perceived bullying and the technical criteria should be further investigated. If the pattern emerged in further research, it could also be the case that the importance of power imbalances should receive greater attention in discussions with students and in resources provided for bullying.

It seems likely that the construct of perceived bullying will remain of significance for some time. As noted above, the situation of students who perceive themselves as victims of bullying, but who are not technically bullied, deserves attention. The findings of the path analysis also point to implications for such students. With regard to perceived bullying, significant predictors were intent, repetition, and harm, while power did not emerge as a significant predictor. Noteworthy is that while intent was significant in the model of perceived bullying, it accounted for less than 0.2% of the variance. Overall, the findings suggest that subjective harm and repetition are the prime elements of perceived bullying and that a power imbalance is only important in the technical assessment of bullying. It is not uncommon for harmful acts of aggression to be *perceived* as acts of bullying, irrespective of the presence of any power differential. According to the findings here, what is most important to an

individual in their perception of bullying is that they have been repeatedly harmed. Further consideration of this may be useful for those dealing with students.

The absence of widespread recognition of a power differential when perceiving bullying could be due to the difficulty in determining the existence of a power imbalance between aggressed and aggressor (Carrera et al., 2011; Swearer & Doll, 2001). While there may be instances where a power differential is obvious (e.g., the victim is smaller or obviously weaker than the perpetrator), there are often times when it is not. As Scherr and Larson (2009) have noted, there may be other existential dimensions of power such as those based on patriarchy, heterosexuality, or social hierarchy that may impact an individual's sense of power but that may not be so apparent. It is therefore not surprising that this important aspect of bullying (Olweus, 1997) may not enter into a young person's mind in terms of their perception of bullying. Indeed, it could be that the power differential is a criterion of bullying more likely to be made by an external observer and is more likely to be an adult-centric observation. The helplessness and inability to "fight back" experienced by some victims of bullying may not be thought of as a construct of power in the manner that adults comprehend it to be. The role of power may also vary across different types of aggression and the findings shown in Fig. 4 suggest that further examination of such variation in relation to an imbalance of power would be worthy of further research.

Our research shows that the discord noted by bullying researchers such as Vaillancourt et al. (2008) still holds true, and little has changed in the ensuing years to assist laypeople in their understanding of bullying and associated criteria. It may perhaps be time for academics to realign themselves with the young people that form the focus of their research. One suggestion would be to ask young people whether they have been harmed and how often, and then proceed to assist those who have been harmed. Research to further understand the nature of harm in experiences of aggression in terms of its severity and duration could be undertaken and used to inform interventions to reduce harmful peer aggression.

Our study results have shown that it is possible to measure bullying according to its defining criteria (i.e., intentionally harmful repeated aggression with a non-relative or romantic partner, where the target feels less powerful than the perpetrator). However, our study accords with Lee and Cornell's, (2009) conclusion that definitional methods used to measure bullying are not optimal for identifying and examining individual differences between students involved in bullying. As noted earlier, to better align the academic, teacher, student, parent, and layperson's understanding of bullying, improvements in the measurement of bullying alone will not change misperceptions of bullying. Such a change would involve a large worldwide effort to educate people about the bullying construct and we do not advocate this as a solution. Rather, participatory approaches are needed, so that the conceptions of bullying can be co-constructed with relevant groups, such as researcher teachers, parents and children.

As an alternative, we raise the question of whether, in a practical sense, student reports of harm through peer aggression should form the focus for academics as well as school staff and counsellors, rather than whether or not aggressive experiences could be described as bullying according to its criteria. Following this approach interventions could seek to reduce repeated harmful aggression, particularly since repeated harmful aggression would be simpler to measure than technical bullying. An approach of this kind would be useful to the school community who could address student reports of being repeatedly harmed by their peers, sending a clear message that student well-being is of prime concern to school stakeholders. Within the academic domain following this path forward would involve abandoning a focus on bullying and instead directing efforts towards understanding harmful peer aggression. It would also overcome the concern alluded to by Hein (2014) that "written definitions of bullying seem to be employed as a tool to sort out who can and who cannot be recognised and

acknowledged as a ‘proper’ victim of bullying” (p. 328).

5.1. Limitations

While our sample was a likely representation of Australian students (we found no reason to think otherwise), it was not random and therefore any generalisations should be made with caution. In our research, we did not define harm but accepted that it is subjective (Donoghue & Raia-Hawrylak, 2016). The research would be improved if future research were to examine the nature of this harm, as well as intent, to determine how intentional harm directly impairs adolescent development for victims as well as aggressors. The rigour of our study could be improved further by including other measures of peer aggression that would corroborate measures and provide triangulation. This could be achieved through school registers of peer aggression incidents where school staff record dates, aggression type, aggressor, victim, and level of harm involved. Another limitation of this study is that we did not closely examine age differences and were not able to investigate whether bullying self-awareness differs across different ages, something that future studies should seek to achieve with larger sample sizes.

6. Conclusions

It is very important that students harmed by peer aggression in any form (technically bullied or not) are not neglected because of the nature of definitions and tools of measurement being used. Furthermore, it is imperative that all students who experience bullying are identified and offered support. It appears that bullying research is not just in need of improved measurement, but it requires a re-assessment of the criteria considered important for identifying young people harmed by their peers through acts of aggression.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

The authors do not have permission to share data.

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