



# Peer and Sibling Bullying Victimization in Childhood: Prevalence in a National Australian Cohort Aged 16 Years and Older

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## Abstract

To examine the population prevalence of bullying victimization by peers and siblings reported in a nationally-representative sample of Australian adults. Australians 16 years and older participated in a computer-assisted telephone interview survey ( $N=8503$ ) and answered questions about childhood bullying victimization perpetrated by peers and siblings. For peer bullying victimization, they were also asked about the duration of their experiences, and experiences of bias-based bullying victimization (i.e., bullying targeting identity characteristics). Overall, 28.7% (27.5–29.9) of Australian adults reported being bullied by peers and 11.5% (10.6–12.4) by siblings during childhood. Prevalence of peer bullying and sibling bullying victimization was significantly higher for gender diverse individuals and women (as compared with men) and for sexuality diverse individuals (as compared with heterosexual individuals). The most common experience was for peer bullying victimization to have endured for more than 3 years (56.9% [54.5–59.4] of those bullied by peers). Around 67.1% (64.7–69.3) of those who reported being bullied by peers experienced at least one type of bias-based bullying. Being bullied about weight or height (12.8% [11.9–13.7]) was more prevalent than other forms of bias-based bullying (race or ethnicity: 6.1% [5.5–6.8]; disability or impairment: 4.9% [4.3–5.5]; sexuality or gender identity: 3.8% [3.4–4.4]). Peer and sibling bullying victimization are common experiences of childhood in Australia. The prevention of bullying victimization remains a priority for creating safer environments for children.

**Keywords** Peer bullying · Sibling bullying · Chronic bullying · Bias-based bullying · Victimization

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Relationships with peers and siblings during childhood are developmentally significant, as these relationships are fundamental to mental health and wellbeing. Prevention of victimization and aggression in peer and sibling relationships is pivotal in enhancing efforts to create safer environments for children (Tucker et al., 2014). Problematic peer and sibling relationships are key modifiable risk factors in the development of mental illness (Bowes et al., 2014; Jadambaa et al., 2020; Singham et al., 2017). Bullying is an internationally recognized concept used to demarcate some of the most damaging forms of interpersonal aggression (Lereya et al., 2015). The established definition maintains that bullying involves acts that are intended to cause harm, are repeated, and occur in unequal relationships where the social and/or physical balance of power favors the person/s aggressing, which makes it difficult for the person being targeted to defend themselves or make the behavior stop (Gladden et al., 2014; Olweus, 1993). The concept was introduced to describe the aggressive actions of children against other children in a way that excluded potentially trivial incidents of peer victimization or single-incident aggression that does not exist within the context of an ongoing relationship (Finkelhor et al., 2016; Skrzypiec et al., 2023). Bullying victimization is the term often used to describe the experience of being bullied.

Peer and sibling victimization are regarded as the overarching higher-order construct for which bullying victimization is a sub-domain, delineated by the established three-part definition. The most valid empirical approach has been to define acts and then study their contextual features (Finkelhor et al., 2012). Using this approach, research has shown that the presence of a power imbalance and repetition increased the negative impact of peer victimization, although episodes without power imbalance or repetition were also associated with negative effects albeit to a lesser extent (Finkelhor et al., 2016; Ybarra et al., 2014). Given that the concept of bullying distinguishes the potentially more serious, enduring, and harmful forms of victimization between peers from other forms of aggression, it has become the predominant approach to both defining and measuring bullying victimization experiences (Cascardi et al., 2014). This delineation is useful given some level of aggression between peers and siblings is very common. However, it is also acknowledged that applying these definitional criteria excludes non-repeated acts or those that did not involve a power differential yet still led to harm. Instead, these experiences are classified as peer or sibling victimization (Finkelhor et al., 2012; Skrzypiec et al., 2023). In this way, all experiences of bullying are a type of peer/sibling victimization, but not all peer/sibling victimization experiences are necessarily bullying. Outside of the scientific definition, perceptions of these three bullying definitional criteria can vary significantly depending on whether a person witnessed,

aggressed or was victimized (Cuadrado-Gordillo, 2012; Thomas et al., 2017a, 2017b). At the individual level, what matters most is whether the person who was victimized perceived the actions as harmful (Skrzypiec et al., 2023).

Although research on aggression in sibling relationships is comparatively less extensive, many studies have typically adapted the definition of bullying to use “siblings” in place of “peers” and largely applied the same measurement approaches (Brett et al., 2023). For this reason, these same conceptual challenges also apply in this context. There are also unique aspects for sibling bullying victimization in that it is a potentially inescapable form of victimization, in which repetition and power dynamics may unfold differently, based on family structure and parenting characteristics (Campione-Barr, 2017). This likely sets the emotional tone of a household, making sibling victimization part of the childhood experience of interpersonal violence, where it potentially occurs alongside child maltreatment (Tucker et al., 2020, 2023). Compared to peer bullying, sibling bullying has long been ignored and still continues to be omitted in much bullying research, despite being both an important clinical and research issue, with an independent literature (Brett et al., 2023). While our approach is most consistent with the established empirical literature, it is also acknowledged that there have been recent calls for a general revisiting of the school/peer bullying definition led by a working group of UNESCO and the World Antibullying Forum to be more expansive and inclusive, in order to better recognize the complexities of relationships and structures inherent to bullying behavior (UNESCO, 2024). However, like historical work, this also risks being exclusively oriented toward peer-based bullying only, even though the types of bullying behavior seen between peers can also occur between siblings. One previous Australian study found sibling bullying *perpetration* to be a relatively common childhood behavior (Tanrikulu & Campbell, 2015), which highlights the need to understand the extent of sibling bullying victimization experiences. Of the few studies that have explored both peer and sibling bullying victimization, when reviewed together the findings are mixed as to which of the two is more prevalent (Brett et al., 2023).

Both peer and sibling bullying victimization are associated with an increased risk of concurrent and future mental health problems for the individual who is bullied (Moore et al., 2017; Toseeb & Wolke, 2022). In particular, there is well-established evidence for causality for peer-based bullying victimization, which has resulted in the inclusion of peer-based bullying victimization as a risk factor in the Global Burden of Disease Study (Stanaway et al., 2018). To understand the social and public health problem of bullying victimization by peers and/or siblings, it is important to measure the prevalence of specific forms, such as physical, verbal, relational, and cyber behaviors, in order to estimate overall prevalence. There may also be a cumulative effect

when children/adolescents experience more chronic bullying (defined as bullying victimization reported at two time points) (Bowes et al., 2013) or are bullied by both peers and siblings (Wolke et al., 2015). In addition to and independent of the behavioral form/mode and chronicity of victim's experiences, another way to conceptualize bullying victimization is based on the subject/theme. Bullying victimization experiences based on a prejudice or bias against an individual's real or perceived group identity or affiliation is a type of bullying known as bias-based bullying. This is a particularly harmful characteristic or typology of bullying, as it represents a direct assault on an individual's sense of identity and belonging (Jones et al., 2023; Mulvey et al., 2018). Bullying based on race or ethnicity, sexual or gender identity, weight or height, or disability are common forms of such bias-based victimization. There is an increased vulnerability to bias-based peer bullying among those from minority socio-demographic groups (Bucchianeri et al., 2016) and in sexuality diverse and gender diverse individuals (Shramko et al., 2019).

The most comprehensive benchmark for bullying victimization in Australia is a meta-analytic study that found approximately 1 in 4 Australian children and adolescents (25.1%) reported having experienced peer bullying victimization in their life-time (Jadambaa et al., 2019). There is mixed evidence from various countries over whether the prevalence of peer bullying victimization has changed over time (Kennedy, 2021; Rigby & Smith, 2011). No previous Australian study has compared the prevalence of childhood bullying victimization in different age cohorts aged 16–65 years and older. To our knowledge, there is no available data on the prevalence of sibling bullying victimization in the Australian context. This is particularly important given that sibling bullying victimization is correlated with peer bullying victimization (Brett et al., 2023).

Studies have typically measured peer/sibling bullying victimization using self-report surveys of children and adolescents (Thomas et al., 2015). A small number of studies have piloted retrospective adult-report methods in modest-sized convenience samples (Fredrick et al., 2021; Green et al., 2018; Miller et al., 2023). One measurement method has been to ask separate questions regarding repetition of a specific behavior, and the presence of a power imbalance (Green et al., 2018; Oblath et al., 2020). Using this method, those who reported being unable to defend themselves had greater symptoms of depression and anxiety in early adulthood (Oblath et al., 2020). This adds further support for the validity of retrospective report of childhood bullying victimization. It also aligns with the widespread use of this method in research of other adverse childhood experiences such as child maltreatment (Mathews et al., 2023).

Conceptual clarity is critical when considering how victimization by peers/siblings (including bullying) fit alongside the

broader experiences of childhood victimization such as child maltreatment (physical abuse, sexual abuse, emotional abuse, neglect, and experiences of domestic violence) (Mathews et al., 2023), as well as other specific forms of victimization perpetrated by peers, e.g., harmful sexual behaviors (Hunt et al., 2023). All of these have been shown to be associated with significant negative health effects that can persist long after childhood (Lawrence et al., 2023; Rivara et al., 2019; Scott et al., 2023). Ensuring robust conceptual models of measured constructs is particularly important when conducting large nationally representative epidemiological studies aimed at exploring the prevalence and nature of a wide range of childhood experiences which often co-occur and/or have related features. Clearly defined constructs and subsets of constructs contributes to informing further research, prevention, best practice approaches, and policy reform (Hunt et al., 2023).

Achieving a comprehensive understanding of all forms of childhood victimization requires inclusion of diverse types of bullying victimization, as perpetrated by both peers *and* siblings. Only then can the full array of exposure to interpersonal adversity including other forms of child maltreatment and violence be understood to ensure appropriate resources are allocated to both prevention and mitigation of all forms of childhood victimization. This knowledge is also needed to understand the cumulative cascade of childhood victimization which can lead to adverse health and social outcomes in adulthood. Understanding differential trends by gender and sexual orientation can further elicit areas of specific need. Similarly, generating evidence of trends by age group can indicate whether prevention efforts undertaken to date have been successful.

The aim of the current study is to provide the most comprehensive estimate of the population prevalence of childhood peer *and* sibling bullying victimization in Australia, and be the first epidemiological study to use a retrospective adult report method of childhood bullying experiences in a nationally representative sample. Where available, we examine specific behavioral forms (physical, verbal, relational, and cyber), chronicity of exposure, bias-based forms of bullying, disaggregated by age cohorts (in both 10- and 20-year groupings for ages 16–65 years and older), gender (women, men, people with diverse gender identities), and sexual orientation (heterosexual, people with diverse sexuality identities).

## Method

### Participants

Data for the study were drawn from the Australian Child Maltreatment Study (ACMS). Extensive information about the study design is published elsewhere (Haslam et al., 2023). Overall, 8503 Australian residents aged 16 years and

over completed the survey (raw proportions: 49.3% men; 49.2% women; 1.5% gender diverse). The recruited sample size aligned with the target sample size of 8500 needed to have 80% power to estimate prevalence within one percentage point and to detect gender differences of 2.6 percentage points (Haslam et al., 2023). Those aged 16–24 years were oversampled ( $n = 3500$ ) to provide large baseline empirical data for future waves of the ACMS to make comparisons with. All other age strata (25–24 years [ $n = 1000$ ]; 35–44 years [ $n = 1000$ ]; 45–54 years [ $n = 1002$ ]; 55–64 years [ $n = 1001$ ]; and 65 years and older [ $n = 1000$ ]) each had a target of 1000 participants which was met. The study sample was recruited via random digit dialling of mobile phone numbers. Potential participants received an advance text message that provided information about the study, consent information, a link to the study website, and an opportunity to opt in/out of the study. Only those who opted in were then phoned and invited to take part. An individual was deemed eligible for participation if they were aged 16 years and old and also fitted the age group for which participants were required at the time of contact. The response rate for eligible candidates contacted was 14.0%, and all participants provided informed consent.

## Procedure

Trained lay interviewers collected data by computer assisted telephone interview between 9 April and 11 October 2021. The demographic profile of ACMS participants was compared with the 2016 Australian census. With respect to gender, Indigenous identity, region and remoteness category of residence, and marital status, the sample showed similar demographic characteristics to the Australian population in 2016. There was some overrepresentation of participants who were born and whose parents were born in Australia, lived in areas of higher socioeconomic status, had tertiary qualifications, or had income greater than \$1250 per week (highest income group). Population weights were calculated to adjust for minor differences. After population weights were applied, the dataset was considered broadly representative of the Australian adult population (Haslam et al., 2023). Ethical clearance was obtained from the Queensland University of Technology Human Research Ethics Committee (approval number 1900000477), in accordance with the Australian National Statement on Ethical Conduct in Human Research 2007 (updated 2018).

## Measures

### Peer and Sibling Bullying Victimization

The prevalence and nature of childhood bullying victimization experiences were assessed using five screener items, in

a measure specifically designed for the ACMS (Childhood Bullying Victimization Questionnaire – Australian Child Maltreatment Study). The instrument was adapted from the only other behaviorally specific questionnaire designed to retrospectively measure childhood peer-based bullying victimization experiences and validated for use with young adults (Green et al., 2018). The measure assessed three types of peer-based bullying victimization (physical, verbal, and relational) and two broad types of sibling-based bullying victimization (physical and verbal) to comprise the five “yes/no” screener items. The interviewer provided orienting information before presenting the screener items. At the start of the peer victimization screeners, interviewers said: *“These next questions ask about mean or hurtful experiences you might have had with other kids, including teenagers, when you were all under 18 years of age. This includes all peers under 18, not just those in school – but does not include siblings.”* For the sibling victimization module, the interviewer said the following prior to presenting screeners: *“These next questions ask about mean or hurtful experiences you might have had with your siblings when you were all under 18 years of age.”* The physical victimization screener item asked about whether they were *“hit, kicked, punched or attacked, in a mean or hurtful way.”* The verbal victimization screener asked about whether they were *“called names in a mean or hurtful way, or threatened to hurt them or their possessions.”* The relational victimization screener asked whether they were *“excluded from activities on purpose or had rumours spread in a mean or hurtful way.”* The definitional criterion of intention to cause harm was included as part of the introduction to the question set, as well as the wording of each screener item by referring to behavior as “mean or hurtful” (as described above). Participants indicated whether or not they had a sibling. Those who reported no siblings were not administered the sibling items.

Where participants endorsed a screener, two follow-up items were administered to assist in operationalizing the other two core criteria consistent with the concept of bullying. The first follow-up question was used to determine whether the reported experience met the a priori definition of repetition by asking: “When it was at its most frequent, how often did this happen?” using a three-point response: “A few times a year or less”, “A few times a month”, “A few times a week or more.” The second follow-up question was used to determine whether a power criterion was met by asking: “At the time, did you feel as though you could defend yourself or make it stop?” – yes or no, in line with previous studies (Green et al., 2018; Oblath et al., 2020), and where a “no” response indicated the presence of a power imbalance. For the verbal and relational peer victimization screeners, the cohort aged 16–24 years were also asked whether these experiences happened in-person, online or across both contexts, in order to account for the possibility of cyberbullying.



To assess the chronicity of peer bullying experiences interviewers asked participants “Over what period of time did all of these things happen?” with possible responses being either “Less than 1 year”, “1–3 years”, or “More than 3 years.” We termed “chronic bullying” as any peer bullying victimization lasting more than 3 years. For the peer victimization module only (due to survey length limits), participants were also asked to reflect on the nature of the bullying experiences to assess bias-based forms of bullying by asking “Were these experiences with other kids often about any of the following: (i) race or ethnicity, (ii) sexuality or gender identity, (iii) weight or height, and (iv) disability or impairment,” using a “yes/no” response. All items in the question set included “don’t know” and “refused” as additional response options, and were selected by a very small minority (< 1.1%). Overall, these small numbers suggest that the screeners and follow-up items were highly acceptable to study participants.

The measurement approach was developed to maximize the breadth of peer and sibling victimization experiences assessed while minimizing participant burden. Unfortunately due to constraints on survey lengths, it was not possible to include items on chronicity and bias-based bullying for siblings. It was important to ensure the measure was culturally appropriate for the Australian context and relevant to participants of different ages and generations. In line with Green et al. (2018), the question module did not include the term “bullying” to minimize the influence of prior understanding of the term on participant responses. An a priori cut-off of “a few times a month or more often” in terms of frequency and a “no” endorsement of the power imbalance follow-up question (i.e., could not defend self or make it stop) was applied to estimate the prevalence of peer and sibling bullying victimization. The question set was reviewed by two independent expert technical advisors. The items were also piloted with 100 participants aged 16 and over. This process enabled refinements to the instrument ahead of main study data collection. Hereafter, the following terms are used interchangeably: “peer bullying”/“bullied by peers” and “sibling bullying”/“bullied by siblings.”

## Statistical Analyses

Analyses were conducted in Statistical Package for Social Sciences (SPSS; Version 29) and independently checked in Statistical Analytic System (SAS; Version 9) software programs. For those who answered “don’t know” or “refused,” responses were treated as a “no” response to maximize the sample size. Survey-weighted prevalence and 95% confidence intervals (CIs) were calculated using the Taylor series linearization approach. Estimates were calculated for the whole sample, by gender (women, men, and people with diverse gender identities), sexuality (heterosexual, people

with diverse sexuality identities), and age group. The prevalence estimates for peer and sibling victimization that did not meet the conceptual criteria are presented in the Supplementary Materials 1, where the degree of endorsement of the two follow-up items (repetition and power imbalance) can be examined. The prevalence estimates presented in the main text represent experiences that met the bullying conceptual definitional criteria of repetition and power imbalance. The prevalence estimates for sibling bullying victimization presented represent those who reported having a sibling (93.8% of total sample;  $n = 7945$ ). However, we have also presented the sample prevalence estimates adjusting for the total sample in Supplementary Materials 2. Where prevalence estimates combine both peer and sibling bullying victimization-derived variables, they represent the proportion of the total sample. Participants were divided into three age cohorts (16–24 years; 25–44 years; 45 years and older), and where prevalence differences were identified, in those cohorts, subsequent analyses disaggregated participants into six more specific age cohorts (16–24 years; 25–34 years; 35–44 years; 45–54 years; 55–64 years; 65 years and older). Prevalence estimates were weighted based on previously derived weights applied to calibrate the survey sample to the estimated resident population of Australia aged 16 years and older (based on gender, age cohort, Indigenous status, country of birth, highest educational level, and residential socio-economic status (Haslam et al., 2023)).

We provide the 95% confidence intervals (95% CI) for all prevalence estimates reported in this paper. These are derived from the standard normal curve and the corresponding standard error of the point estimate. The 95% CI is used to indicate the reliability of the estimate by providing a range of values that would contain the true population value 95% of the time if the survey were reported on multiple samples of equal size. It is considered a way to combine both statistical significance and effect sizes (Hazra, 2017) and is a conventional approach in epidemiological research particularly for population-level prevalence estimates (Haslam et al., 2023). A conservative interpretation is that non-overlapping confidence intervals are deemed to be significantly different, and additional inferential testing may be conducted. Overlapping pairs of confidence intervals are deemed to be *not* significantly different from each other (Hazra, 2017). In comparing key pairs of prevalence estimates with non-overlapping CIs, the specific  $p$ -value and the corresponding  $t$ -value have been included, to provide a complimentary statistic in probability terms, as an adjunct to the 95% CIs. These were calculated by dividing the point estimate difference by the standard error difference to arrive at a  $t$ -value and corresponding  $p$ -value. In addition to the use of the 95% CIs for each point prevalence estimate reported, the mean difference between prevalence estimates can be used as a simple (unstandardized) effect size. This approach

has significant advantages to standardized effect sizes for being able to evaluate the practical significance of findings (Baguley, 2009). In sum, together, the point prevalence estimate and its corresponding 95% CI provide a measure of both the magnitude and the variability of an effect, which are quantities that are confounded by standardized effect sizes (Baguley, 2009).

## Results

### Prevalence of Peer and Sibling Bullying Victimization Experiences

Overall, 28.7% (95% CI [27.5–29.9]) of the population met full conceptual criteria for peer bullying victimization during childhood and of those who had a sibling, 11.5% (95% CI [10.6–12.4]) met full conceptual criteria for sibling bullying victimization (Table 1). The prevalence of peer bullying was significantly higher than that of sibling bullying, based on non-overlapping confidence intervals ( $t = 22.47$ ,  $p < 0.001$ ). This significant difference in prevalence was found across the six 10-year age groupings of the sample (Fig. 1).

Table 1 presents the survey-weighted national prevalence estimates and 95% CIs for adult retrospective report of childhood experiences of peer and sibling bullying victimization overall and by age group, gender, and sexual orientation. Overall, between 37.9% and 63.3% of participants endorsed each of the five screening items. Those who positively endorsed a screener item were asked the follow-up items assessing repetition and power (Supplementary Materials 1). When the conceptual criterion of repetition (“a few times a month or more frequent”) and power (“could not defend or make stop”) was met and applied to derive an overall prevalence estimate, the proportion of affirmative responses reduced significantly (Fig. 2).

### Prevalence by Age Group

When age was divided into three groups (16–24 years, 25–44 years, and 45 years +), we found that those aged 45 years + had significantly lower prevalence of any peer bullying, compared with younger age groups (Table 1). When age was divided into 10-year age groups, we found that this result was most strongly impacted by the much lower prevalence of any peer bullying, and to a lesser extent any sibling bullying, specifically in the 65 years and older age group only (Fig. 2). There was no significant difference in prevalence of any peer bullying victimization between the cohorts 55 years and younger. There was also no significant difference in prevalence in physical or verbal bullying behavior by peers between the three age cohorts (Table 1) or when examining each 10-year age group (Supplementary Materials 3). There

was evidence that the prevalence of relational-based peer bullying victimization in age groups 54 years and younger compared with those 55 years and older (Table 1, Supplementary Materials 3). There was a significantly lower prevalence of any sibling bullying, as well as low physical and verbal bullying by siblings, in the 16–24-year age group when compared with that for either those aged 25–44 years (Table 1) or those aged just 25–34 years (Supplementary Materials 3). When the co-occurrence of bullying victimization by peers and siblings was examined, we found 22.2% were bullied by peers only (95% CI [21.1–23.3%]), 6.5% by both peers and siblings (95% CI [5.7–7.1%]), and 4.3% by siblings only (95% CI [3.8–4.9%]). This pattern of more prevalent endorsement of screener items for victimization by peers (72.5%; 95% CI [71.3–73.8]) compared to siblings (53.0%; 95% CI [51.6–54.4]) was observed even before the conceptual criteria of the follow-up items were applied (Supplementary Materials 1a, 1b, and 1c).

### Prevalence by Gender and Sexuality

Individuals with diverse genders and women had significantly higher prevalence of any peer bullying (54.6%; 95% CI [41.8–66.8] and 30.6%; 95% CI [28.9–32.4], respectively), compared with men (26.1%; 95% CI [24.5–27.8]) ( $t = 4.43$ ,  $p < 0.001$ ;  $t = 3.73$ ,  $p < 0.001$ , respectively). Additionally, people with diverse genders and women had significantly higher prevalence of any sibling bullying (26.2%; 95% CI [14.6–37.9] and 14.0%; 95% CI [12.7–15.3%], respectively), compared with men (8.6%; 95% CI [7.4–9.7]) ( $t = 2.95$ ,  $p < 0.003$ ;  $t = 2.04$ ,  $p = 0.04$ ). Individuals with diverse sexualities had significantly higher prevalence of any peer bullying, compared with heterosexual individuals (55%; 95% CI [50.6–59.4%] and 26.7%; 95% CI [25.5–28.0], respectively;  $t = 7.41$ ,  $p < 0.001$ ). The same pattern of results was found for any sibling bullying where individuals with diverse sexualities had significantly higher prevalence compared with heterosexual individuals (24.6%; 95% CI [20.8–28.8] and 10.5%; 95% CI [9.6–11.5%], respectively;  $t = 6.72$ ,  $p < 0.001$ ). Overall, verbal forms of peer and sibling bullying were more prevalent than physical bullying (for peer and sibling) and relational bullying (peer only). Peer physical bullying was significantly more prevalent among men and people with diverse genders compared with women, and among individuals with diverse sexualities compared with those who were heterosexual. In contrast, sibling physical and verbal bullying were both significantly more prevalent among women and people with diverse genders; among individuals with diverse sexualities, compared with those who were heterosexual. Among the 16–24-years age group, around half of those who experienced any relational or verbal bullying reported peer bullying occurred in-person only (15.1%; 95% CI [13.8–16.4]) and the other half reported

**Table 1** Prevalence of peer bullying victimization by type, age, gender, and sexuality in Australia based on repetition and power criteria being met

| Peer bullying victimization                                 |           |           |      |              |           |      |                           |           |      |
|---|-----------|-----------|------|--------------|-----------|------|---------------------------|-----------|------|
|   | Physical  |           |      | Verbal       |           |      | Relational                |           |      |
|   | %         | 95% CI    | N    | %            | 95% CI    | N    | %                         | 95% CI    | N    |
| All   | 9.7       | 8.9–10.6  | 795  | 23.6         | 22.5–24.8 | 2119 | 18.6                      | 17.5–19.6 | 1763 |
| 16–24 years   | 8.5       | 7.5–9.5   | 299  | 25.3         | 23.8–26.9 | 913  | 23.1                      | 21.7–24.7 | 829  |
| In-person only  | 8.5       | 7.5–9.5   | 299  | 12.5         | 11.4–13.7 | 464  | 9.9                       | 8.9–11.0  | 364  |
| Online only   | -         | -         | -    | 0.3          | 0.1–0.5   | 11   | 0.1                       | 0.1–0.3   | 6    |
| In-person + online  | -         | -         | -    | 12.6         | 11.4–13.8 | 438  | 13.2                      | 12.0–14.4 | 459  |
| 25–44 years   | 10.6      | 9.1–12.2  | 202  | 28.2         | 26.0–30.4 | 5667 | 24.1                      | 22.1–26.2 | 492  |
| 45 years +  | 9.5       | 8.4–10.8  | 294  | 20.0         | 18.5–21.7 | 639  | 13.5                      | 12.2–14.9 | 442  |
| Women   | 7.4       | 6.4–8.5   | 298  | 25.4         | 23.7–27.0 | 1132 | 21.8                      | 20.2–23.3 | 1054 |
| Men   | 11.9      | 10.7–13.3 | 466  | 21.4         | 19.8–23.0 | 920  | 14.6                      | 13.2–16.0 | 647  |
| Gender diverse  | 24.2      | 15.3–36.1 | 31   | 44.3         | 32.6–56.7 | 67   | 46.3                      | 34.3–58.7 | 62   |
| Heterosexual  | 9.0       | 8.2–9.9   | 620  | 22.0         | 20.9–23.3 | 1648 | 16.7                      | 15.7–17.8 | 1346 |
| Sexuality diverse   | 19.0      | 15.7–22.8 | 163  | 46.1         | 41.8–50.5 | 453  | 43.5                      | 39.2–47.9 | 403  |
| Sibling bullying victimization ( <i>n</i> = 558 no sibling) |           |           |      |              |           |      |                           |           |      |
|   | Physical  |           |      | Verbal       |           |      | Any                       |           |      |
|   | %         | 95% CI    | N    | %            | 95% CI    | N    | %                         | 95% CI    | N    |
| All   | 7.4       | 6.7–8.2   | 580  | 9.8          | 9.0–10.6  | 794  | 11.5                      | 10.6–12.4 | 918  |
| 16–24 years   | 6.9       | 6.0–7.9   | 225  | 9.2          | 8.1–10.3  | 305  | 10.9                      | 9.8–12.1  | 360  |
| 25–44 years   | 9.5       | 8.1–11.2  | 165  | 12.2         | 10.6–13.9 | 225  | 14.1                      | 12.3–15.8 | 254  |
| 45 years +  | 6.2       | 5.3–7.2   | 190  | 8.3          | 7.3–9.5   | 264  | 9.9                       | 8.7–11.1  | 304  |
| Women   | 8.9       | 7.9–10.1  | 349  | 12.2         | 11.0–13.5 | 502  | 14.0                      | 12.7–15.3 | 569  |
| Men   | 5.6       | 4.7–6.7   | 211  | 7.1          | 6.1–8.2   | 267  | 8.6                       | 7.4–9.7   | 318  |
| Gender diverse  | 21.2      | 12.2–34.2 | 20   | 16.1         | 8.1–24.2  | 25   | 26.2                      | 14.6–37.9 | 31   |
| Heterosexual  | 6.7       | 6.0–7.5   | 449  | 9.0          | 8.2–9.9   | 614  | 10.5                      | 9.6–11.5  | 707  |
| Sexuality diverse   | 17.0      | 13.6–21.0 | 128  | 21.2         | 17.6–25.2 | 178  | 24.6                      | 20.8–28.8 | 206  |
| Combined bullying victimization                             |           |           |      |              |           |      |                           |           |      |
|   | Peer only |           |      | Sibling only |           |      | Peer and sibling combined |           |      |
|   | %         | 95% CI    | N    | %            | 95% CI    | N    | %                         | 95% CI    | N    |
| All   | 22.2      | 21.1–23.3 | 2055 | 4.3          | 3.8–4.9   | 361  | 6.5                       | 5.8–7.1   | 557  |
| 16–24 years   | 25.8      | 24.2–27.4 | 931  | 3.7          | 3.0–4.4   | 138  | 6.4                       | 5.6–7.4   | 222  |
| 25–44 years   | 26        | 23.8–28.1 | 536  | 4.8          | 3.9–6.0   | 93   | 8.3                       | 7.0–9.7   | 161  |
| 45 years +  | 18.7      | 17.2–20.3 | 588  | 4.1          | 3.4–5.0   | 130  | 5.2                       | 4.4–6.1   | 174  |
| Women   | 22.5      | 21.0–24.1 | 1053 | 5.1          | 4.3–5.9   | 218  | 8.1                       | 7.0–9.1   | 351  |
| Men   | 21.5      | 19.9–23.1 | 945  | 3.4          | 2.7–4.2   | 136  | 4.6                       | 3.8–5.4   | 182  |
| Gender diverse  | 40.2      | 27.9–52.4 | 57   | 7.1          | 0.1–14.2  | 7    | 14.4                      | 6.8–22.0  | 24   |

**Table 1** (continued)

|                          |      |           |      |     |         |     |      |           |     |
|--------------------------|------|-----------|------|-----|---------|-----|------|-----------|-----|
| <b>Heterosexual</b>      | 21.1 | 19.9–22.3 | 1644 | 4.2 | 3.7–4.8 | 304 | 5.7  | 5.0–6.4   | 403 |
| <b>Sexuality diverse</b> | 38.1 | 34.0–42.4 | 387  | 5.8 | 4.0–8.4 | 55  | 16.9 | 13.8–20.6 | 151 |

Proportions (%) and 95% CIs are weighted. Numbers (n) are unweighted. np = not published as fewer than 5 sample participants. Sexuality diverse individuals who responded “don’t know” or “refused” to the item about sexuality (n = 124). \*Prevalence estimates for sibling bullying victimization represent the proportion of the total population who have a sibling, rather than the total sample. Combined bullying victimization prevalence estimates are calculated for the total sample

in-person *and* online bullying victimization (16.9%; 95% CI [15.6–18.3]). Experiencing online-only bullying victimization was rare (0.3%; 95% CI [0.1–0.5]).

### Chronicity of Any Peer Bullying Victimization

The most common level of chronicity by all age groups, genders, and sexualities was a duration of more than 3 years (Table 2). It was significantly less common for peer bullying experiences to have occurred over a shorter duration (i.e., lower-level chronicity). Overall, 16.3% (95% CI [15.3–17.4%]) of the Australian population had been bullied for longer than 3 years, equivalent to 56.9% (95% CI [54.5–59.4%]) of those who reported being bullied by their peers. Overall, we found that there had been a small but significant decline in the prevalence of peer bullying of more than 3 years in the age group 16–24 years, compared with those 25–34 years, based on non-overlapping confidence intervals (Fig. 3).

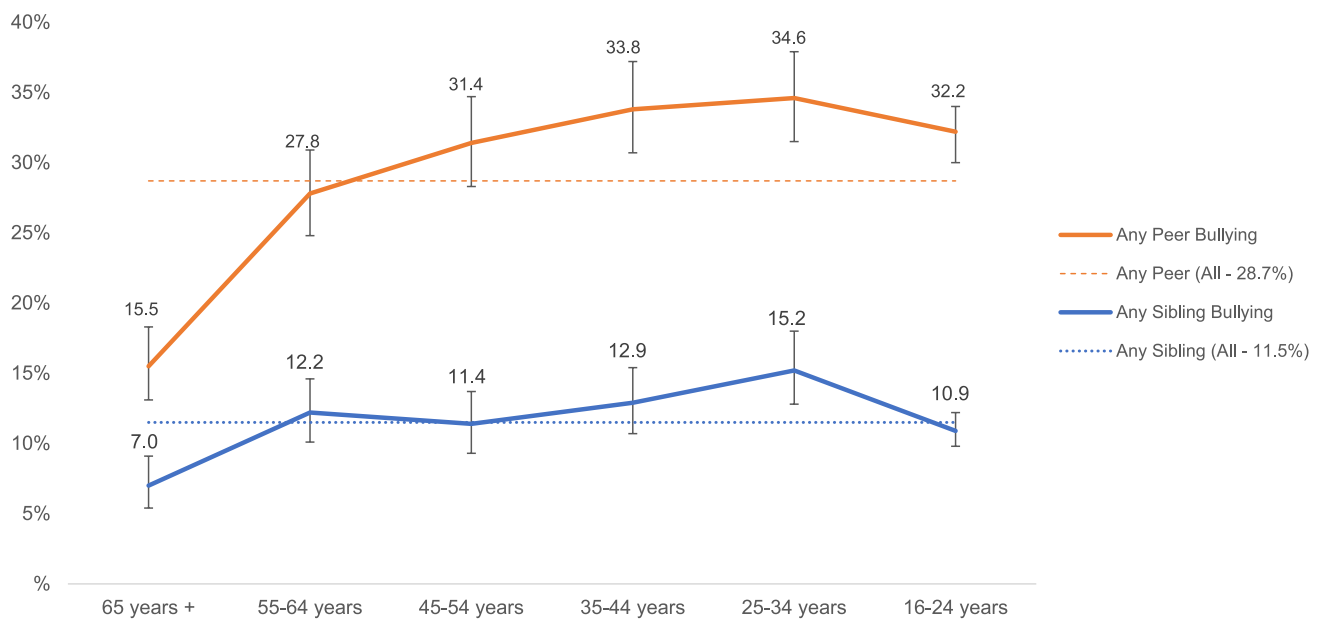
### Bias-Based Peer Bullying Victimization

Overall, 19.2% (95% CI [18.2–20.3]) of the population reported any bias-based peer bullying, equivalent to two-thirds of those who reported being bullied by peers. Bias-based bullying about weight or height had a significantly higher prevalence (12.8%; 95% CI [11.9–13.7%]) compared with other forms: race or ethnicity (6.1%; 95% CI [5.5–6.8]), disability or impairment (4.9%; 95% CI [4.3–5.5%]), and sexuality or gender identity (3.8%; 95% CI [3.4–4.4%]) ( $t = 11.83, p < 0.001$ ;  $t = 14.31, p < 0.001$ ;  $t = 17.13, p < 0.001$ , respectively). There was a significantly higher prevalence of any bias-based bullying for gender diverse individuals (48.9%; 95% CI [36.7–61.2]), compared with women (19.7%; 95% CI [18.2–21.3]) and men (18.1; 95% CI [16.7–19.7]) ( $t = 4.64, p < 0.001$ ;  $t = 4.89, p < 0.001$ , respectively). There was no significant difference for bias-based bullying between women and men. This pattern of findings was the same across the four individual forms of bias-based bullying. Sexuality diverse individuals had significantly higher prevalence of any-bias based bullying (46.1%; 95% CI [41.8–50.5]) compared with those who were heterosexual (17.2%; 95% CI [16.1–18.3]) ( $t = 12.62, p < 0.001$ ). Again, this pattern of findings extended to all four individual forms of bias-based bullying.

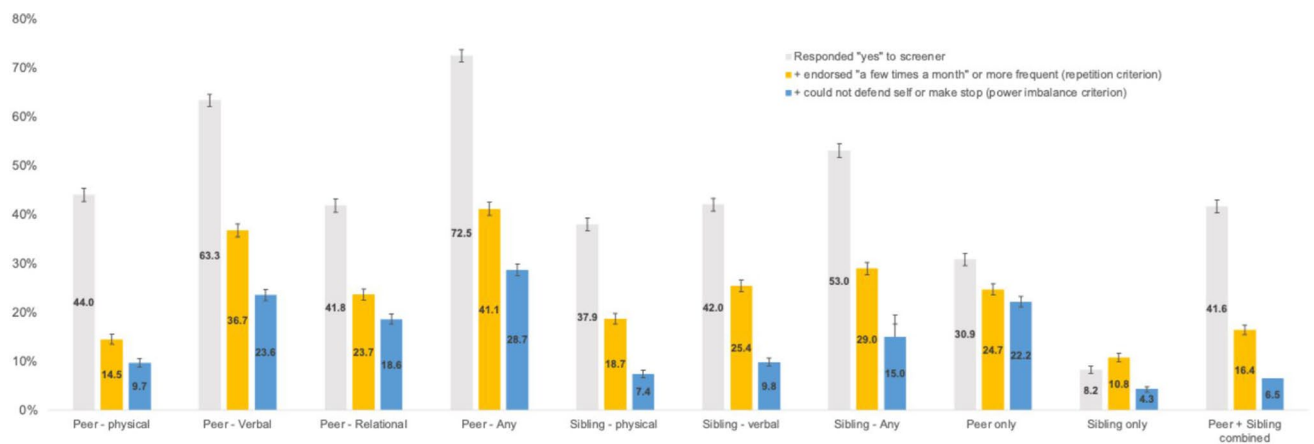
### Bias-Based Peer Bullying Victimization by Age Group

By age group, we found that the younger and middle aged groups (16–24 years: 23.5%; 95% CI [22.0–25.1] and 25–44 years: 23.9%; 95% CI [21.9–26.0]) had significantly higher prevalence of any bias-based bullying compared with the eldest age group (45 years and older: 14.9%; 95% CI [13.5–16.4])





**Fig. 1** Prevalence of peer and sibling bullying victimization by 10-year age cohort based on repetition and power criteria being met



**Fig. 2** Estimation of bullying victimization prevalence by screener and follow-up items for whole of sample

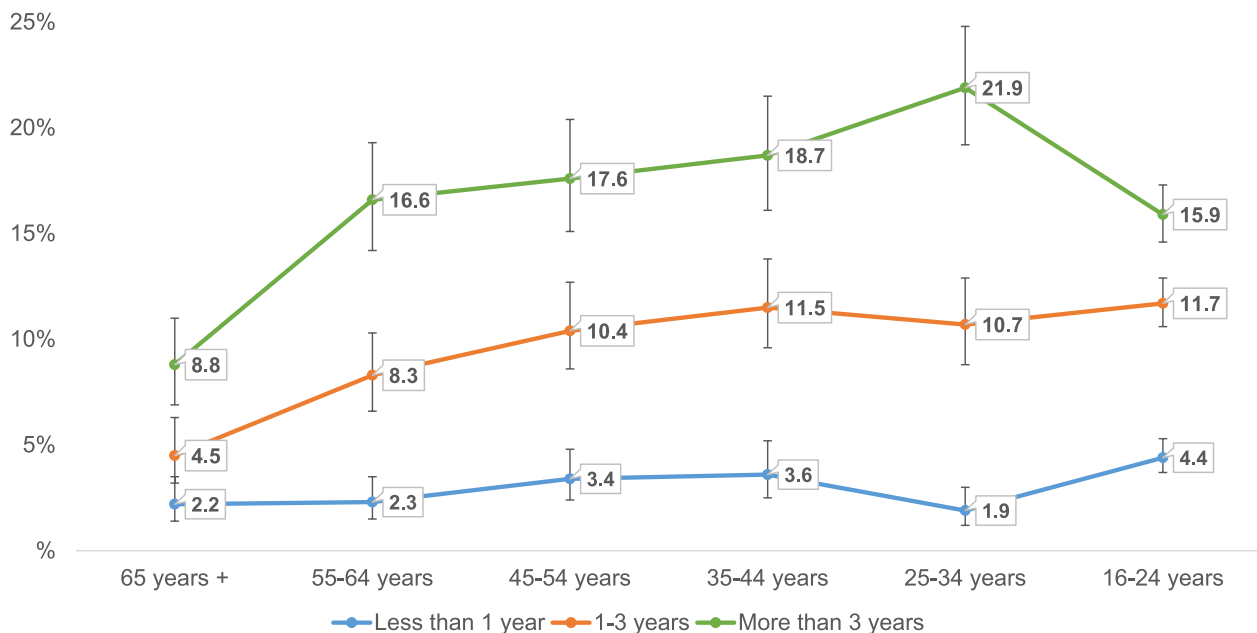
( $t = 7.94, p < 0.001$ ;  $t = 7.03, p < 0.001$ , respectively) (Table 3). The only bias-based form of bullying for which there was a difference across the three age groups was for peer bullying based on weight or height, with highest prevalence in the youngest and middle aged groups (16–24 years: 17.5%; 95% CI [16.2–19.0] and 25–44 years: 16.9%; 95% CI [15.1–18.8]) compared to the eldest age group (45 years and older: 8.7%; 95% CI [7.6–9.9]) ( $t = 9.52, p < 0.001$ ;  $t = 7.38, p < 0.001$ , respectively). Figure 4 presents the prevalence of any bias-based peer bullying victimization as well as the four individual bias types, by 10-year age group. Based on the overlapping 95% CIs, each graph indicates no significant change in prevalence across the six sequential 10-year age groupings, with the

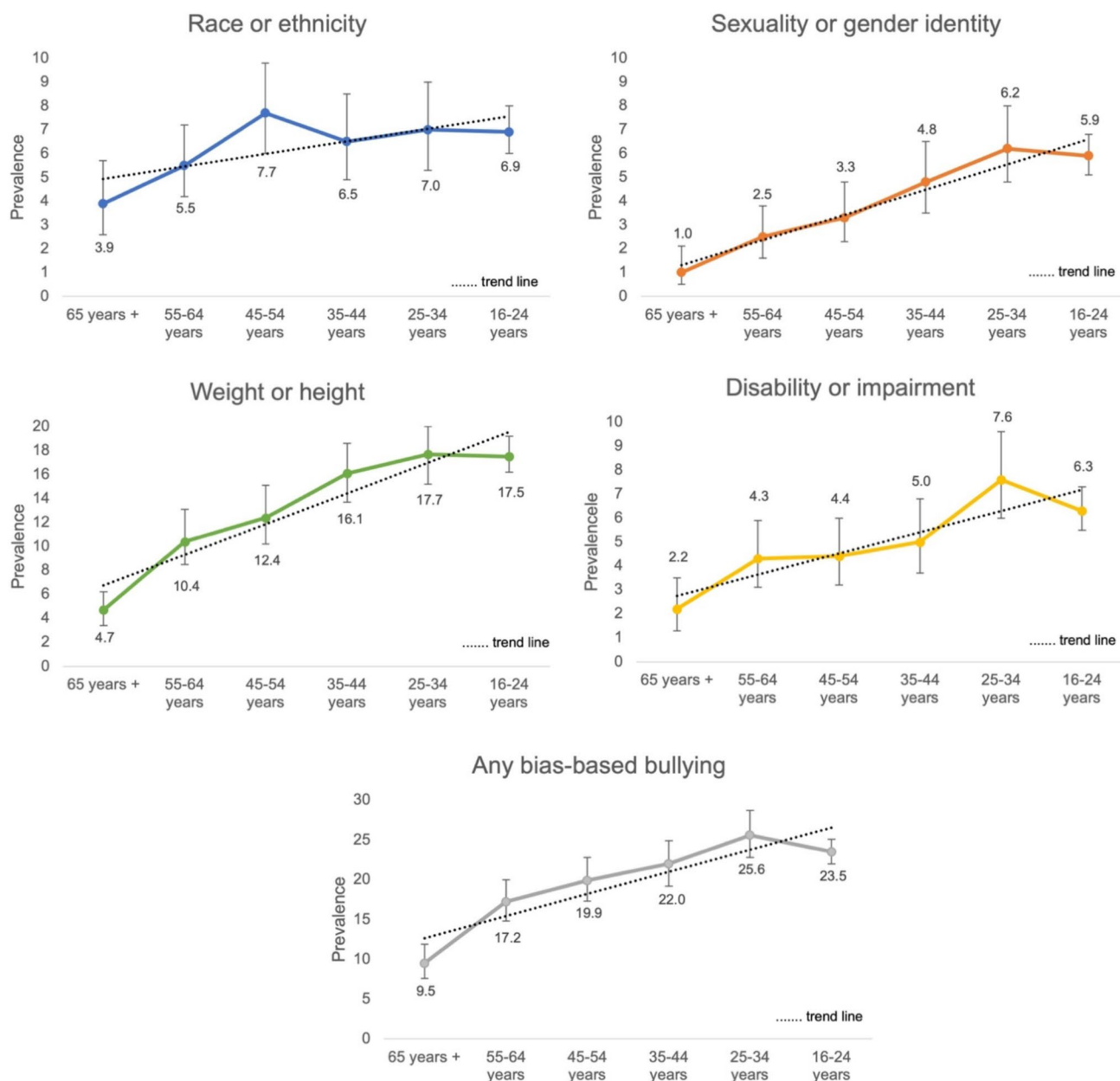
exception of the 65 year and older group who had significantly lower prevalence than the 55–64 year group for weight or height, and any bias-based bullying. Inspection of trend lines suggests that there has been a trend for increasing prevalence up to at least the 25–34-year age group (though CIs also overlap between 25–34-year age and the 16–24-year group for each graph, suggesting no significant difference between these two age groups). The prevalence of bias-based bullying by number of types (no bias-based bullying, 1 type, 2 types, or 3–4 types) is available in Supplementary Materials 4. Of those who experienced bias-based bullying, the most common response was to have experienced a single type of bias-based bullying only. There were two exceptions: the prevalence of multiple types

**Table 2** Chronicity of any peer bullying victimization by age, gender, and sexuality (% , 95% CI)

|                    | N    | Overall prevalence [N = 8503]  |           |           |        |                   |        |      |           |      |
|--------------------|------|--|-----------|-----------|--------|-------------------|--------|------|-----------|------|
|                    |      | Less than 1 year   |           | 1–3 years |        | More than 3 years |        |      |           |      |
|                    |      | %  | 95% CI    | %         | 95% CI | %                 | 95% CI |      |           |      |
| All persons        | 8503 | 2.9  | 2.5–3.4   | 280       | 9.3    | 8.6–10.1          | 919    | 16.3 | 15.3–17.4 | 1399 |
| 16–24-years        | 3500 | 4.4  | 3.7–5.3   | 140       | 11.7   | 10.6–12.9         | 434    | 15.9 | 14.6–17.3 | 572  |
| 25–44 year         | 1929 | 2.7  | 2.0–3.6   | 55        | 11.1   | 9.7–12.7          | 241    | 20.3 | 18.4–22.4 | 400  |
| 45 years and older | 3003 | 2.6  | 2.0–3.3   | 85        | 7.4    | 6.4–8.5           | 244    | 13.7 | 12.4–15.1 | 427  |
| Women              | 4182 | 3.3  | 2.7–4.0   | 165       | 10.5   | 9.4–11.7          | 523    | 16.7 | 15.3–18.2 | 708  |
| Men                | 4195 | 2.5  | 2.0–3.2   | 111       | 7.9    | 7.0–9.0           | 376    | 15.5 | 14.2–17.0 | 635  |
| Gender diverse     | 126  | 1.5  | 0.5–44.2  | 4         | 14.2   | 7.8–24.5          | 20     | 38.5 | 27.5–50.8 | 56   |
| Heterosexual       | 7420 | 2.9  | 2.5–3.4   | 241       | 8.9    | 8.1–9.7           | 738    | 14.8 | 13.8–15.9 | 1060 |
| Sexuality diverse  | 959  | 2.5  | 1.6–3.8   | 34        | 16.1   | 13.3–19.5         | 174    | 36.1 | 32.0–40.5 | 326  |
|                    | N    | Prevalence among those who have experienced any peer bullying [N = 2612] |           |           |        |                   |        |      |           |      |
|                    |      | Less than 1 year   |           | 1–3 years |        | More than 3 years |        |      |           |      |
|                    |      | %  | 95% CI    | %         | 95% CI | %                 | 95% CI |      |           |      |
| All persons        | 2612 | 10.1   | 8.7–11.6  | 280       | 32.4   | 30.2–34.8         | 919    | 56.9 | 54.5–59.4 | 1399 |
| 16–24 years        | 1153 | 13.7   | 11.6–16.2 | 140       | 36.3   | 33.3–39.3         | 434    | 49.3 | 46.1–52.5 | 572  |
| 25–44 years        | 697  | 7.9  | 5.9–10.5  | 55        | 32.5   | 28.8–36.4         | 241    | 59.4 | 55.3–63.3 | 400  |
| 45 years +         | 762  | 10.8   | 8.6–13.6  | 85        | 31.0   | 27.4–34.9         | 244    | 57.3 | 53.2–61.2 | 427  |
| Women              | 1404 | 10.7   | 8.9–12.8  | 165       | 34.4   | 31.2–37.6         | 523    | 54.4 | 51.1–57.8 | 708  |
| Men                | 1127 | 9.6  | 7.6–12.1  | 111       | 30.3   | 27.0–33.8         | 376    | 59.5 | 55.7–63.1 | 635  |
| Gender diverse     | 81   | 2.8  | 1.0–7.7   | 4         | 26.0   | 14.7–41.7         | 20     | 70.5 | 55.2–82.3 | 56   |
| Heterosexual       | 2407 | 10.9   | 9.3–12.7  | 241       | 33.1   | 30.6–35.8         | 738    | 55.5 | 52.8–58.2 | 1060 |
| Sexuality diverse  | 538  | 4.5  | 3.0–6.9   | 34        | 29.3   | 24.4–34.8         | 174    | 65.7 | 60.1–70.8 | 326  |

Proportions (%) and 95% CIs are weighted. Numbers (n) are unweighted. Sexuality diverse excludes individuals who responded “don’t know” or “refused” to the item about sexuality (n = 124)

**Fig. 3** Chronicity of any peer bullying victimization by 10-year age cohort



**Fig. 4** Prevalence and 95% CIs for bias-based forms of peer bullying victimization by 10-year age grouping

of bias-based bullying (two or more types) was significantly higher among gender diverse and sexuality diverse groups, compared to their respective reference groups.

## Discussion

### Prevalence of Peer and Sibling Bullying Victimization by Age Group

The current study is the first to report national prevalence estimates of childhood bullying victimization by peers and

siblings, as retrospectively reported by Australian adults 16 years and older. Prevalence by age group confirmed that bullying victimization has been and continues to be a major form of exposure to interpersonal violence in childhood. Overall, we found that 28.7% were bullied by peers (more than 1 in 4) and 11.5% were bullied by siblings (more than 1 in 10). There were some age-related differences in prevalence that were driven largely by the lower prevalence of peer and also sibling bullying victimization in the age group 65 years and older, compared with younger age groups. Apart from one exception, when examining the five younger 10-year age cohorts (16–24, 25–34, 35–44, 45–54,

**Table 3** Prevalence and 95% CIs for bias-based forms of peer bullying victimization age, gender, and sexuality

| Overall prevalence [N = 8503]  |                    |                              |           |           |                  |           |           |                          |           |           |                         |           |           |        |           |           |
|--|--------------------|------------------------------|-----------|-----------|------------------|-----------|-----------|--------------------------|-----------|-----------|-------------------------|-----------|-----------|--------|-----------|-----------|
| Race or ethnicity  |                    | Sexuality or gender identity |           |           | Weight or height |           |           | Disability or impairment |           |           | Any bias-based bullying |           |           |        |           |           |
| N  | %                  | 95% CI                       | N         | %         | 95% CI           | N         | %         | 95% CI                   | N         | %         | 95% CI                  | N         | %         | 95% CI |           |           |
| All persons  | 8503               | 6.1                          | 5.5–6.8   | 505       | 3.8              | 3.4–4.4   | 402       | 12.8                     | 11.9–13.7 | 1230      | 4.9                     | 4.3–5.5   | 446       | 19.2   | 18.2–20.3 |           |
|  | 16–24-years        | 3500                         | 6.9       | 6.0–8.0   | 214              | 5.9       | 5.1–6.8   | 215                      | 17.5      | 16.2–19.0 | 625                     | 6.3       | 5.5–7.3   | 221    | 23.5      | 22.0–25.1 |
|  | 25–44 year         | 1929                         | 6.7       | 5.5–8.1   | 126              | 5.5       | 4.5–6.7   | 113                      | 16.9      | 15.1–18.8 | 338                     | 6.4       | 5.3–7.7   | 125    | 23.9      | 21.9–26.0 |
|  | 45 years and older | 3003                         | 5.5       | 4.6–6.5   | 165              | 2.1       | 1.6–2.8   | 74                       | 8.7       | 7.6–9.9   | 267                     | 3.5       | 2.8–4.3   | 100    | 14.9      | 13.5–16.4 |
| Women  | 4182               | 6.0                          | 5.1–7.1   | 250       | 3.2              | 2.6–3.9   | 166       | 13.8                     | 12.6–15.2 | 686       | 4.7                     | 4.0–5.6   | 206       | 19.7   | 18.2–21.3 |           |
|  | Men                | 4195                         | 6.1       | 5.2–7.1   | 237              | 4.0       | 3.3–4.8   | 191                      | 11.2      | 10.1–12.5 | 493                     | 4.7       | 3.9–5.5   | 202    | 18.1      | 16.7–19.7 |
|  | Gender diverse     | 126                          | 14.3      | 7.6–25.2  | 18               | 30.0      | 20.3–41.9 | 45                       | 33.8      | 23.5–45.9 | 51                      | 24.5      | 15.8–36.0 | 38     | 48.9      | 36.7–61.2 |
|  | Heterosexual       | 7420                         | 5.9       | 5.2–6.6   | 413              | 2.4       | 2.0–2.9   | 184                      | 11.4      | 10.5–12.3 | 906                     | 4.1       | 3.5–4.7   | 300    | 17.2      | 16.1–18.3 |
| Sexuality diverse  | 959                | 9.6                          | 7.4–12.4  | 88        | 21.7             | 18.4–25.5 | 215       | 31.4                     | 27.5–35.5 | 312       | 15.5                    | 12.5–18.9 | 142       | 46.1   | 41.8–50.5 |           |
| Prevalence among those who have experienced any peer bullying [N = 2612] |                    |                              |           |           |                  |           |           |                          |           |           |                         |           |           |        |           |           |
| Race or ethnicity  |                    | Sexuality or gender identity |           |           | Weight or height |           |           | Disability or impairment |           |           | Any bias-based bullying |           |           |        |           |           |
| N  | %                  | 95% CI                       | N         | %         | 95% CI           | N         | %         | 95% CI                   | N         | %         | 95% CI                  | N         | %         | 95% CI |           |           |
| All persons  | 2612               | 21.3                         | 19.3–23.5 | 505       | 13.4             | 11.8–15.1 | 402       | 44.5                     | 42.1–47.0 | 1230      | 17.0                    | 15.2–19.0 | 446       | 67.1   | 64.7–69.3 |           |
|  | 16–24-years        | 1153                         | 21.4      | 18.7–24.3 | 214              | 18.3      | 16.0–20.8 | 215                      | 54.4      | 51.2–57.5 | 625                     | 19.6      | 17.2–22.2 | 221    | 72.9      | 70.1–75.6 |
|  | 25–44 years        | 697                          | 19.6      | 16.4–23.3 | 126              | 16.1      | 13.4–19.3 | 113                      | 49.3      | 45.2–53.4 | 338                     | 18.6      | 15.6–22.1 | 125    | 69.7      | 65.8–73.3 |
|  | 45 years and older | 762                          | 23.0      | 19.7–26.7 | 165              | 9.0       | 6.9–11.5  | 74                       | 36.3      | 32.5–40.3 | 267                     | 14.5      | 11.9–17.6 | 100    | 62.4      | 58.4–66.2 |
| Women  | 1404               | 19.7                         | 17.0–22.7 | 250       | 10.5             | 8.7–12.8  | 166       | 45.2                     | 41.9–48.6 | 686       | 15.4                    | 13.1–18.0 | 206       | 64.4   | 61.1–67.6 |           |
|  | Men                | 1127                         | 23.2      | 20.1–26.6 | 237              | 15.2      | 12.8–18.0 | 191                      | 43.0      | 39.3–46.7 | 493                     | 17.9      | 15.2–20.9 | 202    | 69.4      | 65.9–72.7 |
|  | Gender diverse     | 81                           | 26.3      | 14.6–42.6 | 18               | 55.0      | 39.7–69.4 | 45                       | 61.9      | 46.3–75.4 | 51                      | 45.0      | 30.6–60.3 | 38     | 89.6      | 77.7–95.5 |
|  | Heterosexual       | 2407                         | 21.9      | 19.6–24.4 | 413              | 9.0       | 7.5–10.7  | 184                      | 42.5      | 39.8–45.3 | 906                     | 15.2      | 13.3–17.3 | 300    | 64.2      | 61.5–66.8 |
| Sexuality diverse  | 538                | 17.4                         | 13.5–22.2 | 88        | 39.5             | 34.0–45.2 | 215       | 57.0                     | 51.2–62.6 | 312       | 28.1                    | 23.1–33.7 | 142       | 83.8   | 79.1–87.5 |           |

Proportions (%) and 95% CIs are weighted. Numbers (n) are unweighted. np = not published as fewer than 5 sample participants. Sexuality diverse excludes individuals who responded “don’t know” or “refused” to the item about sexuality (n = 124)

and 55–64 years), non-overlapping confidence intervals would suggest the prevalence of peer bullying victimization across the age groups was similar. The exception was the youngest age group (16–24 years) for which the prevalence of sibling bullying victimization was significantly lower than the estimated prevalence for the next oldest age group (25–34 years). This finding could suggest there has been a reduction in sibling bullying in more recent times, across both physical and verbal behaviors. In contrast, there was no significant reduction in physical, verbal, or relational bullying by peers when examining prevalence by the different age cohorts. There was a degree of exposure to both peer and sibling bullying victimization, though bullying by peers alone remained the most commonly reported experience. We found that 22.2% of the population were bullied by peers only, 6.5% by both peers *and* siblings, and 4.3% by siblings only. The most comparable previous Australian study is a systematic review and meta-analysis of bullying victimization prevalence as measured in childhood and adolescence that estimated the lifetime prevalence of bullying victimization to be 25.1% (Jadambaa et al., 2019).

### Prevalence of Peer and Sibling Bullying Victimization by Gender and Sexuality

More than 1 in 2 individuals with diverse gender identities (54.6%) and almost 1 in 3 women (30.6%) reported peer bullying victimization, compared to 1 in 4 men (26.1%). A similar pattern was found for sibling bullying victimization where it was reported by more than 1 in 4 individuals with diverse gender identities (26.2%), 1 in 7 women (14.0%), and 1 in 12 men (8.6%). Similar to those who identified with diverse genders, the prevalence of peer and sibling bullying victimization was significantly higher for individuals with diverse sexualities (55.0% for peers and 24.6% for siblings) compared to the estimated prevalence for heterosexual individuals (26.7% for peers and 10.5% for siblings). Of the four behavioral forms measured, verbal forms of bullying victimization were most common for both peers and siblings. For the 16–24 years group, peer bullying victimization that occurred in online settings *only* was extremely rare (0.3%). Half of people reporting bullying experienced in-person only, and the other half experienced in-person *and* online. This finding that online bullying is rarely experienced on its own, and that about half experience both in-person and online, is highly consistent with a previous national prevalence study of Australian adolescents (Thomas et al., 2017b). It also aligns with meta-analytic findings which found that in-person bullying experiences were about twice as common as online experiences (Modecki et al., 2014).

### Chronicity of Peer Bullying Victimization

For peer bullying, we examined the chronicity of the experience and found that around 1 in 6 Australians reported being bullied in childhood for more than 3 years (16.3%), accounting for over half of those who reported being bullied by their peers (56.9%). This suggests that more than half of Australians who experienced peer bullying had what we term chronic exposure (duration of 3 or more years). Across all subgroups based on age, gender, and sexuality, chronic peer bullying victimization had the highest prevalence compared to peer bullying of shorter duration. In longitudinal studies of children conducted outside Australia, chronic peer bullying victimization that continued over 3 years was experienced by ~12% of children (Baly et al., 2014; Wolke et al., 2014). Researchers have demonstrated that bullying is associated with greater adverse effects when it is chronic (Brunstein Klomek et al., 2019; Zwierzyńska et al., 2013). Additionally, we found some age-related differences in the prevalence of chronic peer bullying victimization, whereby those aged 16–24 years reported significantly lower prevalence compared with those 25–34 years. This result is suggestive of a reduction in the prevalence of more persistent bullying in more recent times (caveat being that 16–17 year old participants had less years to report on). This could possibly be explained by the implementation of the Australian Student Wellbeing Framework and associated targeted funding toward the wellbeing of school communities. This is an initiative that provides schools with best practice recommendations for developing and applying policies and support mechanisms to build positive and safe learning environments, based on empirical evidence demonstrating the relationship between wellbeing, safety, and learning (Department of Education, 2020; Education Council, 2020). It could suggest that these policy and practice changes have made a small impact in intervening in the issue of peer-based bullying, but perhaps not successful at a population level of preventing cases of peer-based bullying victimization. We also found that individuals with diverse genders or sexualities disproportionally experienced chronic peer bullying. Again, this finding is broadly consistent with research showing that gender and sexuality diverse adolescents experience social inequality and unique stressors that are complex and mutually constitutive, explaining why they tend to experience bullying victimization to a greater extent than cisgender and heterosexual individuals (Eisenberg et al., 2019). This finding is also consistent with other work using the ACMS showing that this sub-group are also at higher risk of child maltreatment which further underpins a pattern of vulnerability (Higgins et al., 2024).



## Bias-Based Peer Bullying Victimization

Our study showed that bias-based forms of peer bullying victimization are highly common. Around 1 in 5 reported at least one form of bias-based peer bullying victimization (19.2%), which represented more than two-thirds of those who reported any peer bullying victimization. Bias-based peer bullying concerning weight or height was around twice as common as the other three types assessed (12.8%; compared with 6.1% for race or ethnicity, 4.9% for disability or impairment, and 3.8% for sexuality or gender identity). Bias-based bullying targeting an internal, stable, and non-modifiable characteristic is particularly harmful because it devalues an identity and draws attention to marginalized status (Lessard et al., 2020). Bias-based bullying about race or ethnicity likely reflects the wider national challenge of structurally entrenched and interpersonally pervasive racial discrimination in an increasingly culturally diverse Australian population (Ben et al., 2024). As in other countries, discrimination based on weight or height and disability or impairment remain pressing social issues in Australia (Australian Institute of Health & Welfare, 2024; Lawrence et al., 2022). Ongoing support for policy and practice reform that address these social issues more broadly may have a positive flow on effect for children in the future.

One in two individuals with diverse genders and/or sexualities experienced any bias-based forms of bullying (48.9% and 46.1%, respectively), which was more than double the prevalence compared with men and women, or heterosexual individuals, respectively. This result is consistent with a similar study in adolescents (Green et al., 2024). Individuals with diverse genders and/or sexualities were also more likely to report any of the four types of bias-based bullying, not just bullying victimization based on sexuality or gender identity, but also on race or ethnicity, weight or height, or disability or impairment. These two subgroups were also more likely to experience multiple types of bias-based bullying (two or more types). This could suggest that while their bullying experience seems to commonly target this feature of their identity, it also seems to be part of a broader way in which they are viewed by some as being different/marginal due to perceived additional prejudicial characteristics. Overall, these findings are consistent with previous studies showing that individuals with diverse genders and/or sexualities have a disproportionate vulnerability to experiencing bullying, particularly bias-based forms (Bucchianeri et al., 2016). When examined by age group, we found evidence that bias-based bullying victimization (any, and specific types: sexuality or gender identity and weight or height) has increased in prevalence in the two youngest age groups. Efforts have been made toward shifting community attitudes toward greater inclusion of all individuals, as well as for promoting positive body image. However, some of the large societal changes in

Australia such as the legalization of same sex marriage have only happened in recent years (2017) and the benefits may not be seen in the retrospective reports of the 16–25 year old cohort. It is also unclear if the increased prevalence of bias-based bullying is a problem of societal non-acceptance by some. It may also be that young people are more open about their diverse gender and/or sexuality and it is this greater openness that increases the potential of exposure to victimization by individuals who continue to discriminate despite public messaging.

## Limitations

We recognize that the response rate of 14% of eligible study candidates contacted may be considered low; however, the demographic characteristics and health behaviors of the sample were similar to those based on Australian census data (Haslam et al., 2023). The vast majority of those who declined the study invitation reported having insufficient time to take part. Of those who commenced interviews 97.4% completed the full survey (Haslam et al., 2023). The study response rate was also driven by needing to fill each strata to achieve the target sample composition, and this in and of itself required more contact attempts for the 16–24-year old age group (3500 participants) whom we intentionally set out to oversample compared to all other age strata (1000 participants each). The response rate was similar to that of the National Community Attitude Towards Violence Against Women also conducted in 2021, which had an 11% response rate using random digit dialling and telephone interviews (Coumarelos et al., 2023). Overall the ACMS response rate is consistent with the general trend of decreasing telephone survey response rates, particularly through the COVID-19 pandemic years (Krieger et al., 2023).

We acknowledge that the retrospective design involving adult report of experiences during childhood and adolescence can involve challenges of recall. Participants were reporting on experiences that happened over a long period of time and for older participants many decades ago. This may have led to an underestimation of bullying victimization prevalence, particularly if experiences were forgotten or appraised as normative, which might account for the lower prevalence in the oldest age group (65 years and older). We aimed to reduce this risk by using behaviorally specific screener and follow-up items that avoided using the term “bullying.” This approach is consistent with that used to measure child maltreatment and peer-based sexual harassment within the ACMS (Hunt et al., 2024; Mathews et al., 2023). We found that items were generally well-accepted by participants, and very few responded with “don’t know.”

Application of the repetition and power imbalance criteria in line with longstanding conceptual models of bullying may have discounted harmful peer and sibling victimization

experiences in childhood that did not have characteristics of repetition and power imbalance. As acknowledged earlier, there is currently ongoing work in the field that may help to further elucidate these conceptual issues. However, it is argued that the most empirical approach, as undertaken in the current study is to use a behaviorally specific measurement approach, and then assess additional characteristics of these behavioral experiences. For transparency and comparison with future studies, non-repeated acts and/or those that did not involve a power differential but perceived as harmful were still reported. It is also recognized that the item about bias-based bullying combined distinct but related constructs, e.g., sexual orientation and gender identity, so it is not possible to determine which of the two was more common. Related to this, unfortunately specific demographic information was not collected on race/ethnicity or disability to be able to further elucidate these findings on bias-based forms of bullying by peers.

Sibling bullying victimization used one less screener item than that used for peers, which may have led to an underestimation of prevalence, and due to survey length limitations were unable to collect additional information for siblings as it was done for peers (chronicity and bias-based forms of bullying), and including cyberbullying by siblings in the cohort 16–24 years. Based on the five screener items, we found that the vast majority of participants (up to 1 in 6) reported exposure to peer and/or sibling bullying victimization. To minimize participant burden, it was necessary to prioritize survey items for feasibility, not because they are unimportant. Unfortunately it was not possible to include further follow-up questions on sibling victimization in the current study, e.g., about bias-based bullying, and chronicity. This is an important area of future enquiry given emerging evidence that sibling bullying victimization may permeate harmful gender and sexuality-based biases, in particular (Martinez & McDonald, 2021), and is associated with family violence and child maltreatment (Tucker et al., 2020). The current findings may be used to further justify more in depth enquiry in future studies.

Finally, whether retrospective reporting is an optimal method for assessing power imbalance remains unclear. The way adults retrospectively reflect on their experiences of power imbalance might be qualitatively different to that of children (Green et al., 2018). Further studies are planned to disentangle these conceptual and measurement issues by examining the strength of association with between childhood bullying victimization and adult mental health outcomes in the ACMS cohort.

## Implications for Practice

Bullying victimization prevention and intervention continues to be a priority area for improving child and adolescent well-being in many countries, including Australia, and particularly for peer-based victimization (Rivara et al., 2019). Peer bullying remains a major and widespread form of childhood

violence victimization, though sibling bullying victimization also deserves more distinct attention and routine measurement. Given their prevalence in the population, both peer and sibling bullying victimization should be considered for inclusion in child adversity inventories, such as the Adverse Childhood Experiences questionnaires for example.

Understanding the context of bullying victimization experiences (form of behavior, setting, chronicity, and presence of bias-based prejudice) and its prevalence among demographic subgroups can inform policy, prevention and intervention initiatives across the developmental span of childhood, and be used to direct resources where they are most needed and/or will have most positive impact. The current findings broadly suggest that prevalence of peer and sibling bullying victimization have remained largely stable in Australia. This is despite government and educational prevention efforts, particularly for peer bullying. Acknowledging methodological differences between our study and others, our findings are largely consistent with a systematic review and metaregression which found no significant time trend between 1998 and 2017 in studies from the US (Kennedy, 2021), and another that found some evidence of a declining trend between 1990 and 2017 (Rigby & Smith, 2011). However, both previous studies identified shifting patterns suggestive of an increasing time trend for cyberbullying. Our study's findings suggests that when a wide age range of adults self-reported on their childhood experiences of bullying by peers, accounting for the potential for cyberbullying in the youngest cohort, there has been no significant change over time in Australia for peer bullying victimization. The exception is for sibling bullying victimization, and this is the first study to our knowledge to identify a reduction in sibling bullying prevalence between our youngest two cohorts (16–24-year group had significantly lower prevalence than the 25–34-year age group). Although the proportion of the sample with a sibling was not significantly different between these two age groups, this finding could be explained in part by changes in household/family composition (Qu et al., 2023).

Overall, the findings of this study further underscore the continued investment in and enhancement of policy and practice to support a population-level reduction in the prevalence of childhood bullying victimization by peers and siblings. In particular, these findings show the importance of targeted strategies to support those who are most vulnerable: girls/women, individuals with diverse gender identities and/or sexualities, and those who experience chronic bullying and/or any form of bias-based bullying (weight or height, race or ethnicity, sexuality or gender identity, or disability or impairment). The overarching objective must not only be to continue to prevent bullying but also successfully intervene when it does occur to reduce duration of exposure and therefore subsequent harm. There is also increasing recognition of

developmental cascades of childhood violence exposures that are used to establish interpersonal dominance (bullying and sexual violence pathway in particular) and interrupting this pathway should be a priority (Espelage et al., 2022). This is particularly concerning given that in the ACMS cohort we have also found that there has been an increase in adolescent-perpetrated child sexual abuse in Australia in the 16–24-year age group (Mathews et al., 2024).

## Future Research Directions

Monitoring trends over time with repeated epidemiological studies is one robust way to assess changes in prevalence over time. It can also inform reviews of the impact of policy and practice changes over the longer term (Mathews et al., 2023). The issue of bullying is widely understood as having social-ecological influences, through interactions across individual, family, school/peer, and community/societal contexts (Thomas et al., 2018). This is no different to the systemic influences associated with other forms of child victimization. We need to better understand the co-occurrence of various childhood victimization experiences, given that they are likely to make-up a substantial proportion of children exposed to violence (Finkelhor et al., 2007). This will enable us to identify unique versus common risk and protective factors that could be used to help further research efforts and ultimately contribute to enhanced prevention, best practice approaches, and policy reform across *all* forms of childhood victimization.

## Conclusion

Relationships with peers and siblings strongly influence development and wellbeing across the child and adolescent years. Both peer and sibling bullying victimization during childhood have been and remain common forms of interpersonal violence in Australia. Women and people with gender or sexuality diverse identities are most likely to have this experience. Of note, peer bullying victimization is most often chronic and bias-based. The current study is the first to demonstrate these nuances in bullying victimization experiences by peers and siblings using Australian nationally representative data, and the first to do so using an adult-report method in a nation-wide study. Our finding that there has been a reduction in reported prevalence of peer-based bullying victimization that endured for more than 3 years is promising. However, this conclusion must be tempered by findings that bias-based peer bullying victimization has largely remained stable over time. Overall, our findings can assist in contextualizing the prevalence and nature of the full range of childhood victimization experiences, including bullying victimization, which can co-occur and/or have overlapping

features (i.e., other forms of violence perpetrated by peers). This knowledge can then be used to identify ways to inform systemic changes that are needed to reduce the prevalence of *all* childhood victimization experiences, especially those based on prejudice or bias, and experienced by our most vulnerable members of society.

## Abbreviations

**ACMS:** Australian Child Maltreatment Study; **CI:** Confidence interval; **SAS:** Statistical Analytic System; **SPSS:** Statistical Package for the Social Sciences; **UNESCO:** United Nations Educational, Scientific, and Cultural Organization

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**Data Availability** The authors had full access to all ACMS data. Under a registered data management plan, final data sets will be stored on the Australian Data Archive, with details for access from 2024 made available on the ACMS website. Under a multi-institutional agreement, the survey instrument is the intellectual property of the research team. It will be made available through a Creative Commons licence after an embargo period.

## Declarations

**Ethics Approval** Ethical clearance was obtained from the Queensland University of Technology Human Research Ethics Committee (approval number 1900000477), in accordance with the Australian National Statement on Ethical Conduct in Human Research 2007 (updated 2018).

**Consent to Participate** Verbal informed consent was obtained prior to interview.

**Consent for Publication** Not applicable.

**Conflict of Interest** The authors declare no competing interests.

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