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Gendered Experiences of Bullying: Insights from TIMSS 2019 Data in South African Schools

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Abstract

Bullying is a prevalent form of violence among children and a pressing public health concern. In South Africa, its high occurrence calls for targeted research and intervention. This study examines gender differences in bullying among South African primary and secondary school students using data from the Trends in International Mathematics and Science Study 2019 Grades 5 and 9 student questionnaires. A quantitative approach with a positivist stance was adopted. Results indicate significant gender differences: boys experience higher levels of direct physical bullying, while girls report fewer incidents of digital or relational bullying. These findings reflect the Social-Ecological Model, highlighting the interaction between individual behaviour, peer dynamics, institutional contexts, and societal norms. The study offers insights into gendered bullying within South Africa's sociocultural environment. It underscores the need for gender-sensitive interventions that foster safer, more inclusive school environments and encourages further research on bullying dynamics in diverse and evolving educational settings.

Keywords: *Gender Differences; Bullying; TIMSS 2019; South Africa; Primary School; Secondary School; Social-Ecological Model*

Introduction

Bullying has been described as a "public health issue" (Waseem & Nickerson, 2024:9270) and it's a common issue in schools worldwide (Izadi & Hart, 2024). In fact, Hosseini (2023:58) lists it as "the most common form of violence among peers in school". Bullying has many definitions, but a recent definition by Hosseini (2023:58) is: "school bullying can be seen as intentional and repeated physical, verbal, or psychological pressure on a student as a victim over a period of time, by one or more students called the bully, usually with an imbalance of physical or psychological power". Other authors reiterate the statement that bullying is characterised by intentional, repetitive behaviour aimed at harming another person (Izadi & Hart, 2024; Larrañaga et al., 2023). The prevalence of bullying in South African schools is alarming, and it affects everyone (Gcelu et al., 2020; Juan et al., 2018; Mullis et al., 2020). In an analysis of bullying prevalence in South Africa, Juan et al. (2018) reported a wide variation in rates - from 12% to 61% - depending on factors such as school location, socio-economic status, and school culture. The Trends in International Mathematics and Science Study (TIMSS) 2019 student bullying report showed that 29% of Grade 5 South African students indicated they were bullied "about weekly" and 45% "about monthly", with these percentages being 18% ("about weekly") and 47% ("about monthly") for Grade 9 South African students (Mullis et al., 2020).

Although the TIMSS data is primarily used to track mathematics and science achievement across various countries at cyclical intervals, the goal of this study is not to examine the effect of bullying on academic performance, despite evidence that bullying negatively impacts achievement (Gimenez et al., 2024) and, more specifically, within a South African context (Graham, 2024; Okeke et al., 2024). The goal of the current study is to conduct a secondary data analysis using the self-reported student data from the TIMSS 2019 Grade 5 and Grade 9 South African student questionnaire on how South African students reported regarding 11 types of bullying (primary level, Grade 5) and 14 types of bullying (secondary level, Grade 9), and how these responses differed across genders. Many studies over the years have shown that gender and bullying share a complex and significant relationship (Sun et al., 2024; Tustin et al., 2014). For example, in a study involving 4,245 students aged 13 to 18 from the Western Cape and Gauteng provinces of South Africa, Tustin et al. (2014) found that while boys were more likely to experience physical bullying and girls emotional bullying, both genders reported

significant negative consequences. Feelings of sadness, depression, and degradation emerged as the most commonly reported effects across the board. A more recent study in China involving 7,159 secondary school students (46.9% female, 53.1% male) utilised a quantitative approach to examine how gender differences influence the psychological and behavioural outcomes of bullying (Sun et al., 2024). The study found that female students reported heightened stress responses and poorer school adaptation compared to male students. These differences, in turn, contributed to more pronounced mental health challenges, including higher levels of suicidal ideation among female students. Such findings underscore the critical role of gender in shaping the psychological impacts of bullying within school environments. However, not all studies have found a significant relationship between gender and bullying. For instance, an earlier South African study by Greeff and Grobler (2008), which surveyed 360 primary school children in the Free State province, found no notable gender differences in bullying prevalence. In a more recent study, Suresh et al. (2025) investigated traditional and online bullying victimisation among school-going adolescents in southern India and found no significant differences in victimisation rates between genders for either traditional or online settings. These results diverge from much of the global literature, where gender differences are often highlighted, suggesting that contextual factors may mediate the role of gender in bullying experiences.

While bullying in South African schools has been documented for decades, limited research has explored the nuanced gendered dimensions of these experiences using nationally representative, large-scale datasets. The TIMSS 2019 presents a unique opportunity to analyse such data, especially since it includes students' self-reported experiences of different bullying types. Despite the existence of research on bullying and gender internationally and within South Africa, few studies have examined these dynamics comparatively across school phases (Grades 5 and 9), nor within the broader social-ecological framework that accounts for the interplay of individual, relational, institutional, community, and societal factors. This study addresses this gap by providing a quantitative, gender-focused analysis of bullying in South African schools, contributing context-specific insights to global understandings of school-based violence. The research question guiding the study is: What are the gender differences in self-reported bullying experiences among South African Grade 5 and Grade 9 students, as reflected in the TIMSS 2019 data, and how do these differences manifest across various types of bullying, e.g.,

physical, relational? The research hypothesis is: There are statistically significant gender differences in self-reported bullying experiences among South African Grade 5 and Grade 9 students, manifesting across various types of bullying.

Literature Review

Bullying is a global phenomenon that affects the social development of adolescents and children. Social development is closely linked to various aspects of human functioning such as quality of life (QoL), wellbeing, autonomy and mental health, and research has shown that bullying negatively affects adolescents' and children's QoL (Beckman et al., 2016 [Sweden]; Ngo et al., 2021 [Vietnam]), physical wellbeing (Garbin et al., 2019 [Brazil]; Haraldstad et al., 2019 [Norway]), psychological functioning/wellbeing (Garbin et al., 2019 [Brazil]; Hendricks & Tanga, 2019 [South Africa]), autonomy (Albaladejo-Blázquez et al., 2019 [Spain]; Haraldstad et al., 2019 [Norway]), and mental health (Albaladejo-Blázquez et al., 2019 [Spain]; Boyes et al., 2020 [South Africa]).

School bullying in South Africa has a long history and has been documented over an extended period (Greeff & Grobler, 2008; Liang et al., 2007; Manuel et al., 2021; Smit, 2003; Steyn & Singh, 2018; Tustin et al., 2014). Research consistently highlights gender differences in the prevalence, types, and consequences of bullying. Gender differences in bullying prevalence are considered first, as research consistently shows variability across genders. This discussion begins with a global perspective, followed by insights from the broader African context, and concludes with findings specific to South Africa. Examining studies from diverse regions offers valuable insight into how gendered bullying dynamics manifest across different cultural and socio-economic settings. In China, Huang et al. (2024) analysed the data of 1,964 secondary school children using the Programme for International Student Assessment (PISA) 2018 data from Beijing, Shanghai, Zhejiang, and Jiangsu, and found that boys were more likely to face physical bullying, whereas girls experienced relational bullying. In Benin, a West African nation, Gbordzoe et al. (2024) found that females had a bullying victimisation prevalence of 44.6% compared to 40.1% for males and that females who were physically attacked or engaged in physical fights also showed higher odds of being victims compared to males. In South Africa, an earlier study by Greeff and Grobler (2008) involving 360 primary school children in the Free State province, using the Revised Olweus Bully / Victim Questionnaire (Olweus, 1996) — a self-report instrument on five

dimensions[1] of bullying — found no significant gender differences in the prevalence of bullying. In contrast, around the same time, Liang et al. (2007) found significant gender differences in bullying involvement by surveying 5,074 Grade 8 and Grade 11 children in Cape Town and Durban, South Africa. A more recent study by Manuel et al. (2021), which surveyed 7,067 primary school children across all nine provinces of South Africa, reported that boys were more likely than girls to be physically hit, excluded, or called unkind names. When it comes to cyberbullying, however, studies suggest that both genders are significantly affected, with no clear consensus on which gender is more at risk (Huang et al., 2024 [China]; Liu et al., 2024 [China]; Tustin et al., 2014 [South Africa]).

The impact of bullying and associated behavioural patterns is explored next. Research shows that the effects of bullying often differ by gender: girls are more likely to internalise these experiences, exhibiting higher levels of depression, anxiety, and suicidal ideation (Sun et al., 2024). For example, Sun et al. (2024), who collected data from 7,159 junior high Chinese students using a questionnaire, demonstrated that female victims of bullying were more likely to report heightened stress responses and poorer school adaptation, which contributed to increased suicidal ideation compared to males, On the other hand, boys are more likely to exhibit externalising behaviours such as aggression or substance use as coping mechanisms (Gbordzoe et al., 2024 [West Africa]; Liu et al., 2024 [China]). Tustin et al. (2014) conducted a study on 4,245 13-to-18-year-old students in the Western Cape and Gauteng provinces of South Africa and found that although boys are more prone to physical bullying and females to emotional bullying, both genders reported experiencing negative consequences of bullying with sadness, depression and degradation being the most common.

Cultural norms also influence gender differences in bullying. In India, traditional and online bullying were found to vary regionally, with boys participating more in physical bullying and girls experiencing relational bullying. The cultural dimensions of individualism versus collectivism were noted as significant factors in the types and prevalence of bullying

[1] Five dimensions: "amount of exposure to various forms of bullying/harassment such as physical, verbal, indirect, racial or sexual bullying; various forms of bullying as defined by the pupils; where bullying occurs; pro-bully and pro-victim attitudes; whether and how the social environment (teachers, peers, parents) is informed about and reacts to bullying" (Greeff & Grobler, 2008:132)

(Suresh et al., 2025). Similarly, in Brazil, male students were more prone to being both aggressors and victims of bullying, with socio-economic status and race further influencing these dynamics (Silva et al., 2024). A study conducted in Eswatini in Southern Africa, using data from 2,920 in-school youth and multivariate data analysis, showed that girls who used marijuana and reported low parental connectedness had higher odds of being bullied, whereas boys who went hungry and viewed other children to be unhelpful and unkind, had higher odds of being bullied (Shongwe et al., 2021).

In South Africa, Steyn and Singh (2018) conducted interviews in five secondary schools in the KwaZulu Natal province and reported that an overwhelming majority of students attributed the escalation of bullying in schools directly to the influence at the family level. Steyn and Singh (2018:1029) go on to report that "Broken homes, poor upbringing, the absence of positive role models and the influence of media violence on learners have had a negative impact on the culture of discipline, teaching and learning in the classroom and the general ethos of schools". At school level, they reported many students indicating the problem of peer pressure (i.e., needing to belong to a group) advancing bullying in schools, and at community level, they reported that coming from violent environments was a contributing factor to bullying. In Pillay's (2021) study of six primary schools in Gauteng, South Africa (435 children), bullying was found to be strongly associated with the schools' regional context (inner-city environments having the highest bullying incidents). Pillay (2021) furthermore argues for school-based anti-bullying programmes that take into account the local socio-economic and cultural realities of the students' environment.

Next, the academic consequences of bullying are examined, with attention to how gendered patterns of bullying can impact academic outcomes. In a large-scale study by Gimenez et al. (2024), using data from 79 countries and 612,004 students, bullied boys scored lower in mathematics compared to girls, highlighting gender-specific vulnerabilities in academic domains. For South African studies, although research has shown that bullying negatively affects academic performance (Graham, 2024; Pillay, 2021), no study has considered the gendered effects to the best of our knowledge

Effective anti-bullying interventions must account for these gender differences. For instance, fostering a positive school climate and promoting a sense of belonging were shown to mitigate bullying effects for both genders. Tailored approaches are necessary, such as peer relationship training for girls and addressing aggressive behaviours in

boys (Shongwe et al., 2021 [Eswatini]; Sun et al., 2024 [China]). And for countries such as South Africa, the cultural realities of students must be

taken into account when designing anti-bullying programmes (Pillay, 2021).

In summation: Research demonstrates clear gender differences in bullying experiences and impacts. Boys are more likely to engage in and face physical bullying, whereas girls are disproportionately affected by relational and psychological bullying. The consequences for both genders extend to mental health, academic outcomes, and social development. Future interventions should consider these differences and the cultural contexts to effectively address bullying in schools. In this study, we explore what types of bullying South African primary and secondary students are exposed to using self-reported TIMSS 2019 data to gain insights into bullying patterns in South African schools.

Theoretical Framework

This study is grounded in the Social-Ecological Model (Bronfenbrenner, 1977), which posits that individual behaviours, such as bullying, are influenced by interactions across multiple levels of the social environment. The model outlines five interrelated levels of influence: (i) individual level (personal characteristics such as age, gender, knowledge, attitudes, and behaviours), (ii) relational level (close relationships with family, friends, peers, and teachers that influence behaviour), (iii) institutional level (formal institutions such as schools and workplaces, including their norms, rules, and policies), (iv) community level (broader settings and environments, including neighbourhoods, cultural networks, and the availability of services), (v) public policy/societal level (overarching cultural values, laws, norms, and economic or social policies that shape opportunities and behaviour). With the focus on this study: At the individual level, gender plays a pivotal role in shaping bullying experiences, with boys often engaging in physical forms of bullying and girls more likely to experience relational bullying. At the relational level, peer interactions and family dynamics influence the likelihood of being involved in bullying, either as a perpetrator or victim. For example, relational aggression among girls may stem from peer group dynamics, while boys may face increased physical bullying due to traditional gender norms. At the institutional level, school climate and policies impact the prevalence and reporting of bullying behaviours. Schools with competitive or unsupportive environments may exacerbate bullying

incidents, while a positive climate fosters inclusivity and reduces bullying. Students from communities with high levels of violence or limited social support may be more vulnerable to both experiencing and perpetrating bullying within schools. At the community level, broader social environments - such as neighbourhood safety, community violence, and access to support services - can either exacerbate or mitigate bullying behaviours. At the societal level, cultural norms and gender expectations perpetuate power imbalances that influence how bullying manifests for boys and girls. This framework allows for a holistic examination of gender differences in bullying, acknowledging the interconnectedness of individual behaviours and the broader social systems in which they occur. By applying this model, the study aims to uncover the nuanced ways in which gender and context - specifically within the South African schooling environment - shape bullying experiences in schools. In South Africa, socio-economic inequalities, community violence, and deeply entrenched gender norms add complexity to how bullying is enacted and perceived. The Social-Ecological Model not only facilitates a layered analysis of bullying but also allows for the identification of gender-sensitive intervention points that are responsive to the South African sociocultural and educational context.

Methodology

Research approach and design

A quantitative approach was followed, with a positivist philosophical stance, as this stance is typically associated with quantitative research. With the positivist paradigm, there is objectivity and an absence of bias due to possible researcher influence, as we were neutral and detached from what was researched (Park et al., 2020). Secondary data analysis (SDA) refers to a research design that mostly uses existing data, mostly quantitative data to reapply and reanalyse such data to test hypotheses or to validate models. The current study employed an SDA research design (Mligo, 2016), which offers several advantages. It is time-efficient, cost-effective, and allows the secondary researcher to maintain a level of detachment that can enhance objectivity. However, SDA also presents certain limitations. The data may not align perfectly with the secondary researcher's specific research questions or objectives, leading to potential mismatches. Additionally, the available data may be incomplete, inaccurate, or of poor quality (Boté & Térmens, 2019; Doolan et al., 2017; Gray, 2020).

Participants and sampling

TIMSS primarily monitors and compares mathematics and science achievements among countries over regular assessment cycles. At Grade 5 level, 64 countries participated in TIMSS 2019. TIMSS 2019 made use of a two-stage stratified cluster sampling design (LaRoche et al., 2020) of Grade 4, which represented four years of formal schooling, but South Africa chose fifth-graders to "provide a better match with the demands of the assessments"(LaRoche & Foy, 2020:196). For South Africa, the realised sample was 297 schools, 294 mathematics and science teachers, 11,903 students and 11,720 parents/guardians at Grade 5 level (Reddy et al., 2020). At Grade 9 level, a total of 519 schools participated in TIMSS 2019, with 20,829 students, 543 mathematics and science teachers and 519 school principals completing the TIMSS questionnaires (Human Sciences Research Council [HSRC], 2020). Regarding the sampling strategy, TIMSS 2019 used a two-stage sampling approach. Firstly, schools were sampled according to their size with province and school type serving as stratification variables and secondly, one or more intact classes from the target grade of each participating school were selected (LaRoche et al., 2020).

Data collection, instruments and quality assurance

The data collection for TIMSS 2019 in South Africa took place in October 2018 (HSRC, 2021). The TIMSS 2019 assessment has various questionnaires completed by parents, students, teachers and principals; however, in the current study, we are only interested in the self-reported data of the students using the student questionnaires (Grade 5 [International Association for the Evaluation of Educational Achievement (IEA)], 2018a]; Grade 9 [IEA, 2018b]). The TIMSS 2019 developers went through many rigorous steps in developing the TIMSS 2019 achievement instruments. "The assessment frameworks cannot drastically change from cycle to cycle but are routinely updated to keep up with fresh ideas and current information about curricula, standards, and instruction in mathematics and science education around the world" (Cotter et al., 2020:1.9). The interested reader is referred to Cotter et al. (2020) for a detailed account of this process. In terms of quality

assurance, TIMSS 2019 put various measures in place to ensure the reliability and validity of the assessment. Cronbach's alpha (α) coefficients of 0.60 and higher are deemed acceptable (Zhan et al., 2021), and the reliability of the South African data was confirmed through high internal consistency with the majority of the α coefficients being above 0.60 across the various scales and grades, with the highest α equalling 0.94; the α values for the bullying scale were 0.83 and 0.84, respectively (Yin & Fishbein, 2020). Additionally, scoring reliability was high, with exact agreement rates on human-scored items averaging 97–100% in both Gauteng and Western Cape (Mullis et al., 2020). For validity, TIMSS ensured that there was a substantial percentage of equivalent items between the paperTIMSS and the eTIMSS, which could be compared by adhering to best practices in assessment design by "clearly defining the target construct to be measured, specifying the items needed to measure it, establishing standards for items and test forms, and ensuring that the assessments meet the test specifications" (Cotter et al., 2020:1.4). These findings support the validity and reliability of the data for accurately capturing student performance in the South African context. For more details on how TIMSS establishes the reliability and validity of their instruments, the interested reader is referred to Cotter et al. (2020) and LaRoche et al. (2020).

Ethical considerations

No permission was needed to analyse the TIMSS 2019 data, as the database is available for public use on the IEA's website (IEA, 2024). The IEA has very strict guidelines when it comes to conducting research ethically, and they have many procedures in place to ensure that informed consent is provided by all participants (LaRoche & Foy, 2020).

Data Analysis

The IEA International Database (IDB) Analyzer version 5.0 was used to analyse the data; it is typically employed with international large-scale assessments (ILSAs) such as TIMSS and PIRLS[2] to correctly account for plausible values, variance, weights etc (IEA, 2025). The 11 bullying items from the Grade 5 student TIMSS 2019 questionnaire (see Table 1 in the Results section for example items), and the 14 bullying items from the

[2] PIRLS stands for "Progress in International Reading Literacy Study"

Grade 9 student TIMSS 2019 questionnaire (see Table 2 in the Results section for example items), were used for the analysis. The difference in reporting between boys and girls are statistically significant if the absolute value of the *t* test statistic is greater than 1.96. The *t* test statistic is a measure used in statistical analysis to determine whether the difference

between two groups (in this case, boys and girls) is statistically significant. The absolute value of the *t*-value indicates how strong the evidence is against the null hypothesis (the idea that there is no difference between the groups). A larger *t*-value (in absolute terms) suggests a larger and more statistically significant difference between the percentages reported by boys and girls for a specific response option.

Results

The differences in reported bullying are presented in Tables 1 and 2 for Grades 5 and 9, respectively. Note that the abbreviations "s.e.", "diff" and "*t*" stand for "standard error", "difference" and "*t* test statistic", respectively. The latter is computed by dividing the percentage difference (% diff) by its standard error, i.e. t = (% diff)/(% diff s.e.). Furthermore, the percentage difference (% diff) was computed as (Girl – Boy). This means:

- If the % diff (and, by association, *t*) is positive, girls reported a higher percentage for that response option.

- If the % diff (and, by association, *t*) is negative, boys reported a higher percentage for that response option.

For Table 1, the question was asked, "During this school year, how often have other students from your school done any of the following things to you, including through texting or the Internet?" (IEA, 2018a:10). The 11 options presented to the Grade 5 students along with their responses are shown in Table 1.

Table 1: *Grade 5 gender differences in bullying (n = 11,903)*

Description	Response option	Boy		Girl		Difference		
		%	% s.e.	%	% s.e.	% diff	% diff s.e.	*t*
ASBG11A: "Made fun of me or called me names"	**"At least once a week"**	**36.5**	**1.17**	**30.5**	**1.03**	**-5.97**	**0.99**	**-6.04***
	"Once or twice a month"	13.2	0.61	12.4	0.44	-0.83	0.65	-1.27
	"A few times a year"	15.3	0.71	19.4	0.77	4.09	0.75	5.48*
	"Never"	35.0	1.35	37.7	1.25	2.70	0.97	2.77*
ASBG11B: "Left me out of their games or activities"	"At least once a week"	25.1	0.94	21.0	0.90	-4.12	1.02	-4.02*
	"Once or twice a month"	17.9	0.79	13.8	0.58	-4.12	0.82	-5.05*
	"A few times a year"	13.7	0.56	13.3	0.60	-0.39	0.92	-0.42
	"Never"	43.3	1.45	52.0	1.21	8.63	1.49	5.79*
ASBG11C: "Spread lies about me"	"At least once a week"	26.0	0.98	23.8	0.99	-2.16	1.04	-2.08*
	"Once or twice a month"	16.6	0.87	16.1	0.66	-0.50	0.77	-0.65
	"A few times a year"	16.7	0.73	20.6	0.78	3.81	0.99	3.85*
	"Never"	40.6	1.41	39.5	1.28	-1.15	1.26	-0.91
ASBG11D: "Stole something from me"	"At least once a week"	31.5	1.20	29.5	1.17	-2.03	0.93	-2.19*
	"Once or twice a month"	18.9	0.80	20.6	0.80	1.73	1.15	1.50
	"A few times a year"	19.3	0.69	23.7	0.89	4.38	0.82	5.37*
	"Never"	30.3	1.48	26.2	1.27	-4.08	1.33	-3.06*
ASBG11E: "Damaged something of mine on purpose"	"At least once a week"	22.3	0.87	19.4	0.67	-2.88	1.05	-2.74*
	"Once or twice a month"	17.4	0.84	15.8	0.59	-1.59	0.69	-2.30*
	"A few times a year"	16.0	0.74	16.3	0.66	0.28	0.90	0.32
	"Never"	44.3	1.42	48.4	1.19	4.18	1.46	2.87*
ASBG11F: "Hit or hurt me (e.g., shoving, hitting, kicking)"	"At least once a week"	23.1	0.86	19.6	0.69	-3.47	0.94	-3.69*
	"Once or twice a month"	16.5	0.57	14.3	0.60	-2.21	0.74	-3.01*
	"A few times a year"	16.7	0.69	17.0	0.75	0.21	0.88	0.24
	"Never"	43.7	1.08	49.2	0.99	5.48	1.09	5.04*
ASBG11G: "Made me do things I didn't	"At least once a week"	20.7	0.94	15.9	0.94	-4.75	1.04	-4.58*
	"Once or twice a month"	13.6	0.59	11.8	0.57	-1.73	0.83	-2.08*

want to do"	"A few times a year"	13.0	0.58	13.3	0.68	0.29	0.94	0.31
	"Never"	52.7	1.39	58.9	1.31	6.19	1.44	4.30*
ASBG11H: "Sent me nasty or hurtful messages online"	"At least once a week"	16.2	0.80	12.9	0.77	-3.32	0.71	-4.68*
	"Once or twice a month"	12.6	0.68	9.3	0.60	-3.34	0.74	-4.54*
	"A few times a year"	11.1	0.73	10.4	0.62	-0.64	0.64	-0.99
	"Never"	**60.1**	**1.63**	**67.3**	**1.56**	**7.30**	**1.00**	**7.28***
ASBG11I: "Shared nasty or hurtful messages about me online"	"At least once a week"	15.8	0.77	12.4	0.88	-3.32	1.05	-3.17*
	"Once or twice a month"	12.5	0.74	9.9	0.67	-2.58	0.75	-3.46*
	"A few times a year"	11.5	0.59	10.6	0.53	-0.85	0.69	-1.23
	"Never"	60.3	1.51	67.0	1.61	6.75	1.38	4.89*
ASBG11J: "Shared embarrassing photos of me online"	"At least once a week"	16.0	0.77	11.7	0.94	-4.27	0.89	-4.80*
	"Once or twice a month"	11.6	0.75	8.2	0.74	-3.42	0.74	-4.65*
	"A few times a year"	9.9	0.89	8.2	0.51	-1.70	0.92	-1.85
	"Never"	**62.5**	**1.87**	**71.9**	**1.64**	**9.39**	**1.36**	**6.89***
ASBG11K: "Threatened me"	"At least once a week"	21.8	1.06	18.1	0.88	-3.74	1.37	-2.73*
	"Once or twice a month"	13.5	0.54	11.0	0.56	-2.57	0.63	-4.06*
	"A few times a year"	15.0	0.71	16.9	0.70	1.92	0.88	2.18*
	"Never"	49.6	1.41	54.0	1.37	4.40	1.38	3.19*

Note. Direct quotes are from IEA (2018a:10); *statistically significant

The analysis reveals significant gender differences in reported bullying for 33 out of 44 response options (11 variables with 4 response options each), accounting for 75% of the rows in Table 1. Boys and girls reported bullying experiences differently across most categories. The three largest *t*-values (in absolute values) in Table 1 are indicated in bold, and are interpreted here for illustration purposes. For Grade 5, the largest *t*-values (in absolute value) were 7.28, 6.89, and 6.04, corresponding to the following variables:

ASBG11H: Sent me nasty or hurtful messages online (Never)

- Girls reported never experiencing this significantly more than boys (% diff = 7.30, $t = 7.28$).

- This indicates that girls are far more likely to report not being subjected to online bullying than boys.

ASBG11J: Shared embarrassing photos of me online (Never)

- Girls also reported never experiencing this more frequently than boys (% diff = 9.39, t = 6.89)

- This suggests a significant gender difference, with girls less likely to have such experiences.

ASBG11A: Made fun of me or called me names (At least once a week)

- Boys reported this behaviour significantly more than girls (% diff = -5.97, t = -6.04).

- This illustrates that boys are more frequently targeted with name-calling or teasing on a weekly basis.

For Grade 9, the question was asked, "During this school year, how often have other students from your school done any of the following things to you, including through texting or the Internet?" (IEA, 2018b:12). The 14 options presented to the Grade 9 students, along with their responses, are shown in Table 2.

Table 2: *Grade 9 gender differences in bullying (n = 20,829)*

Description	Response option	Boy		Girl		Difference		
		%	% s.e.	%	% s.e.	% diff	% diff s.e.	*t*
BSBG14A: "Said mean things about my physical appearance (e.g., my hair, my size)"	**"At least once a week"**	**30.7**	**0.66**	**26.3**	**0.66**	**-4.46**	**0.85**	**-5.26***
	"Once or twice a month"	18.0	0.42	16.8	0.44	-1.25	0.58	-2.14*
	"A few times a year"	18.4	0.59	23.7	0.59	5.30	0.81	6.56*
	"Never"	32.9	0.65	33.3	0.70	0.40	0.89	0.45
BSBG14B: "Spread lies about me"	"At least once a week"	15.7	0.46	17.3	0.52	1.60	0.71	2.25*
	"Once or twice a month"	20.1	0.49	19.0	0.49	-1.05	0.71	-1.47
	"A few times a year"	22.5	0.61	26.6	0.49	4.09	0.75	5.43*
	"Never"	41.8	0.71	37.1	0.62	-4.65	1.02	-4.54*
BSBG14C: "Shared my secrets with others"	"At least once a week"	14.7	0.58	14.9	0.58	0.16	0.76	0.21
	"Once or twice a month"	15.0	0.52	13.2	0.33	-1.83	0.62	-2.95*
	"A few times a year"	16.5	0.50	19.3	0.52	2.81	0.58	4.88*
	"Never"	53.8	0.82	52.6	0.83	-1.14	1.03	-1.11
BSBG14D: "Refused to talk to me"	"At least once a week"	19.6	0.59	19.9	0.59	0.25	0.74	0.35
	"Once or twice a month"	15.4	0.51	14.7	0.47	-0.75	0.68	-1.09
	"A few times a year"	17.0	0.50	17.0	0.48	0.05	0.68	0.08

	"Never"	48.0	0.75	48.4	0.74	0.44	0.91	0.48
BSBG14E: "Insulted a member of my family"	"At least once a week"	17.3	0.59	12.6	0.53	-4.66	0.73	-6.37*
	"Once or twice a month"	11.8	0.48	10.1	0.39	-1.69	0.62	-2.71*
	"A few times a year"	15.2	0.43	13.4	0.40	-1.83	0.56	-3.27*
	"Never"	**55.7**	**0.82**	**63.9**	**0.68**	**8.17**	**1.03**	**7.93***
BSBG14F: "Stole something from me"	"At least once a week"	28.6	0.73	32.3	0.67	3.70	0.78	4.74*
	"Once or twice a month"	20.5	0.64	20.3	0.56	-0.13	0.84	-0.15
	"A few times a year"	21.2	0.67	22.2	0.57	0.99	0.84	1.18
	"Never"	29.7	0.81	25.2	0.80	-4.56	0.97	-4.69*
BSBG14G: "Made me do things I didn't want to do"	"At least once a week"	12.0	0.54	9.8	0.46	-2.21	0.63	-3.50*
	"Once or twice a month"	14.1	0.52	10.8	0.44	-3.30	0.70	-4.71*
	"A few times a year"	16.3	0.56	14.1	0.44	-2.17	0.69	-3.14*
	"Never"	**57.7**	**0.88**	**65.4**	**0.72**	**7.68**	**0.95**	**8.10***
BSBG14H: "Sent me nasty or hurtful messages online"	"At least once a week"	11.0	0.48	9.8	0.40	-1.20	0.56	-2.12*
	"Once or twice a month"	11.1	0.44	9.6	0.38	-1.45	0.55	-2.66*
	"A few times a year"	13.9	0.50	14.0	0.36	0.01	0.63	0.02
	"Never"	63.9	0.80	66.6	0.64	2.64	0.87	3.03*
BSBG14I: "Shared nasty or hurtful things about me online"	"At least once a week"	8.6	0.54	7.7	0.38	-0.96	0.60	-1.60
	"Once or twice a month"	10.3	0.54	9.3	0.41	-1.05	0.60	-1.76
	"A few times a year"	12.8	0.46	11.7	0.39	-1.10	0.58	-1.89
	"Never"	68.3	0.92	71.4	0.73	3.11	0.92	3.38*
BSBG14J: "Shared embarrassing photos of me online"	"At least once a week"	7.5	0.56	4.3	0.28	-3.21	0.56	-5.68*
	"Once or twice a month"	7.4	0.40	4.8	0.29	-2.69	0.45	-5.99*
	"A few times a year"	9.4	0.38	7.1	0.39	-2.27	0.51	-4.44*
	"Never"	**75.7**	**0.84**	**83.8**	**0.60**	**8.16**	**0.76**	**10.74***
BSBG14K: "Threatened me"	"At least once a week"	11.5	0.56	9.8	0.40	-1.64	0.57	-2.89*
	"Once or twice a month"	10.8	0.42	10.3	0.43	-0.50	0.65	-0.77
	"A few times a year"	18.9	0.53	16.5	0.50	-2.41	0.68	-3.52*
	"Never"	58.8	0.82	63.4	0.76	4.55	0.90	5.05*
BSBG14L: "Physically hurt me"	"At least once a week"	10.4	0.35	11.0	0.48	0.65	0.53	1.22
	"Once or twice a month"	11.2	0.39	10.7	0.45	-0.45	0.57	-0.78
	"A few times a year"	18.6	0.58	15.9	0.49	-2.67	0.67	-3.99*
	"Never"	59.9	0.75	62.3	0.85	2.47	0.97	2.55*
BSBG14M: "Excluded me from their group (e.g., parties, messaging)"	"At least once a week"	12.5	0.60	11.7	0.50	-0.75	0.58	-1.29
	"Once or twice a month"	14.5	0.53	11.9	0.50	-2.54	0.60	-4.24*
	"A few times a year"	17.1	0.57	18.4	0.44	1.36	0.74	1.85
	"Never"	56.0	0.98	57.9	0.68	1.92	0.92	2.09*

BSBG14N: "Damaged something of mine on purpose"	"At least once a week"	13.9	0.54	13.7	0.55	-0.19	0.70	-0.27
	"Once or twice a month"	14.2	0.47	13.0	0.45	-1.15	0.64	-1.80
	"A few times a year"	21.3	0.66	19.7	0.42	-1.61	0.80	-2.03*
	"Never"	50.7	0.79	53.6	0.75	2.96	1.03	2.88*

Note. Direct quotes are from IEA (2018b:12); *statistically significant

For Grade 9, significant gender differences were observed in 35 out of 56 response options (14 variables with 4 response options each), which is in 62.5% of the response rows in Table 2. Boys and girls reported bullying experiences differently across most categories. The three largest *t*-values (in absolute values) in Table 2 are indicated in bold and are interpreted here for illustration purposes. For Grade 9, the largest *t*-values (in absolute value) were 10.74, 8.10, and 7.93, corresponding to:
BSBG14J: Shared embarrassing photos of me online (Never)

- Girls reported never experiencing this significantly more than boys (% diff = 8.16, $t = 10.74$).

- This reflects a substantial gender difference, with girls being far less likely to report experiencing this type of bullying.

BSBG14G: Made me do things I didn't want to do (Never)

- Girls also reported never experiencing this more than boys (% diff = 7.68, $t = 8.10$).

- This indicates that girls are less likely to face coercion compared to boys.

BSBG14E: Insulted a member of my family (Never)

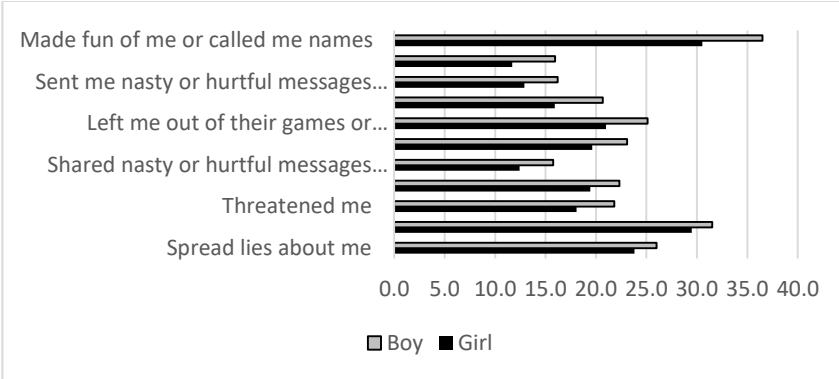
- Girls reported never experiencing this more often than boys (% diff = 8.17, $t = 7.93$).

- This suggests a significant difference in how this form of bullying is reported by gender.

For Grades 5 and 9, although not all the significant results are considered above (for conciseness and due to space limitations), in Figures 1 and 2, the "at least once a week" statistically significant responses are

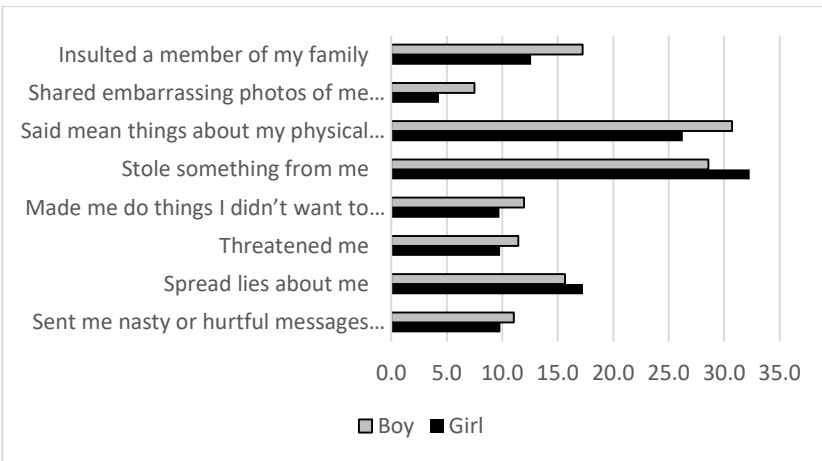
summarised and shown from the largest *t*-value (in absolute value) to the smallest one

Figure 1. "At least once a week" percentages for significant gender differences for Grade 5



From Figure 1, it is evident that all 11 Grade 5 bullying items had significant gender differences, with boys reporting the specific bullying item occurring "at least once a week" significantly more than girls.

Figure 2. "At least once a week" percentages for significant gender differences for Grade 9



From Figure 2, it is evident that only 8 of the 14 items Grade 9 bullying items showed significant gender differences. Of those 8 items, boys reported the specific bullying item occurring "at least once a week" significantly more than girls for 6 of the items. The only 2 items where

girls reported a higher frequency of occurrence are "stole something from me" and "spread lies about me".

Discussion

The analysis of bullying experiences among South African Grade 5 and Grade 9 students revealed significant gender differences in self-reported responses across multiple types of bullying. These findings are aligned with the assumptions of the Social-Ecological Model, which posits that individual behaviours, such as bullying, are shaped by interactions across individual, relational, institutional, community and societal levels (Bronfenbrenner, 1977). At the individual level, boys were more likely to report experiencing direct forms of bullying, such as being made fun of or called names on a weekly basis (Grades 5 and 9). Boys' higher reporting of overt bullying behaviours aligns with global findings that boys are often subjected to more physical and direct forms of bullying (Gbordzoe et al., 2024). This pattern is also evident in South Africa, where traditional norms around masculinity may perpetuate these dynamics, particularly in competitive school environments (Bhana et al., 2021). In contrast, girls were more likely to report that something was stolen from them or that lies were spread about them (only Grade 9). Except for the latter item of lies being spread, for all other relational items, boys reported being bullied more than girls, which is in contrast to what has been reported in the literature. It is unclear whether Grade 5 and Grade 9 South African girls are experiencing relational bullying less than boys, or whether they don't disclose it. Studies have shown that children are reluctant to disclose bullying for various reasons, including feeling ashamed, concerns about escalation, the belief that there would be no appropriate response, not wanting to worry their parents or be labelled a snitch (Li & Hesketh, 2021; Lui et al., 2022).

These gendered experiences suggest that bullying's psychological and behavioural impacts are deeply influenced by societal norms and expectations. These findings underscore the need for school interventions that address the distinct forms of bullying experienced by boys and girls. Interestingly, not all studies have found a significant relationship between gender and bullying. Suresh et al. (2025), for instance, observed no significant gender differences in bullying

victimisation among adolescents in southern India, suggesting that contextual factors may mediate the role of gender. Such discrepancies highlight the importance of considering cultural and regional variations when interpreting gendered patterns of bullying. South Africa's unique sociocultural context, characterised by a history of inequality and a diverse student population, may shape how bullying manifests across genders, as suggested by Silva et al. (2024). Finally, the community and societal levels influence, particularly cultural expectations and gender norms, are evident in how boys and girls report their experiences of bullying. Boys' higher reports of direct bullying may reflect societal pressures to conform to traditional masculinity, while girls' self-reported avoidance of digital bullying may indicate a stronger adherence to relational dynamics that prioritise social cohesion over confrontation.

Limitations

It should be noted that, while writing this article and analysing the TIMSS 2019 data, the TIMSS 2023 *results* were released; however, the TIMSS 2023 data had not yet been released to the public, so we could not make use of the most recent TIMSS cycle (TIMSS 2023) for our analysis; von Davier et al. (2024). Furthermore, Although there are clear benefits to ILSAs, such as fostering interdisciplinary and international collaboration and providing information on processes and contexts of education, there are many limitations, such as (Klemenčič & Mirazchiyski, 2018): "(1) ranking is relative to the other participating educational systems; (2) significant differences between the ranked systems are often insufficient; (3) the role of contextual factors related to student achievement is disregarded; (4) single number estimates are not representative of the whole spectrum of the distribution; and (5) non-cognitive (personality, psychological) aspects are ignored" (p. 321).

Conclusion

The findings of this study reveal significant gender differences in how South African Grade 5 and Grade 9 students experience and report bullying, underscoring the need for gender-sensitive approaches to address this pervasive issue. The use of the Social-Ecological Model in this study allowed for a holistic understanding of how individual behaviours, peer dynamics, school environments, community and societal norms interact to shape bullying experiences. This framework highlights the importance of addressing bullying not only at the

individual level but also by fostering positive peer relationships, supportive school and community climates, and challenging harmful societal norms around gender and power.

From a policy perspective, these results call for the implementation of targeted interventions that address the specific needs of boys and girls. School policies should also incorporate training for educators to recognise and respond to gender-specific bullying behaviours effectively. Additionally, the findings have broader implications for education systems in diverse sociocultural contexts like South Africa. Given the intersection of gender, socio-economic disparities, and cultural norms, future research should explore how these factors collectively influence bullying experiences. Expanding this analysis to include the forthcoming TIMSS 2023 data could provide deeper insights into trends over time and inform more effective anti-bullying policies.

In conclusion, addressing gender differences in bullying requires a concerted effort that combines data-driven research, culturally sensitive interventions, and ongoing collaboration between educators, policymakers, and communities. By fostering inclusive and supportive environments, schools can play a critical role in reducing the prevalence of bullying and promoting the wellbeing and academic success of all students.

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