

The prevalence and correlates of cyberbullying among South African adolescents

**Authors:**

Camryn L. Twaddle¹ 
Daniel B. le Roux¹ 

Affiliations:

¹Department of Information Science, Faculty of Arts and Social Sciences, Stellenbosch University, Stellenbosch, South Africa

Corresponding author:

Camryn Twaddle
23560444@sun.ac.za

Dates:

Received: 25 Nov. 2025
Accepted: 02 Apr. 2026
Published: 04 June 2026

How to cite this article:

Twaddle, C.L. & Le Roux, D.B., 2026, 'The prevalence and correlates of cyberbullying among South African adolescents', *South African Journal of Information Management* 28(1), a2132. <https://doi.org/10.4102/sajim.v28i1.2132>

Copyright:

© 2026. The Authors.
Licensee: AOSIS. This work is licensed under the Creative Commons Attribution 4.0 International (CC BY 4.0) license (<https://creativecommons.org/licenses/by/4.0/>).

Background: Cyberbullying is recognised as a widespread and persistent challenge for adolescents in the digital age, particularly as smartphone adoption and social media usage increases. The integration of digital communication into everyday life has created new opportunities for connection but has also introduced new risks, such as cyberbullying.

Objectives: This study aimed to explore the frequency of cyberbullying behaviour among adolescents in South Africa, and how these behaviours differ across gender, age and social media platforms. Additionally, the study aimed to investigate whether cyberbullying involvement predicted variance in well-being and academic performance.

Method: A quantitative, cross-sectional research design was employed to analyse survey data collected from 659 learners across four urban high schools in South Africa. The survey included self-report measures of cyberbullying behaviours, social media usage, well-being, academic performance and demographics.

Results: 63.9% of learners reported cyberbullying involvement, of which 19.9% are cybervictims, 6.7% are cyberbullies and 37.3% are both roles. Female (65.1%) and male (62.6%) participants reported similar rates. The most common behaviours were sharing secrets, sending hurtful messages and spreading rumours. Cyberbullying involvement was significantly associated with the use of TikTok, Instagram and Snapchat and with lower levels of perseverance, connectedness and happiness. It also predicted variance in academic performance beyond well-being and demographics.

Conclusion: This study highlights the dynamic nature of negative online engagement, psychological well-being and academic performance, and how interventions should consider the effect cyberbullying can have on emotional and educational outcomes.

Contribution: This study contributes current insights into the prevalence and correlates of cyberbullying among South African adolescents.

Keywords: cyberbullying; cybervictim; cyberbully; adolescents; social media; academic performance; well-being; South Africa.

Introduction

Today's adolescents are more digitally connected than any previous generation. Smartphones enable them to connect with others online, search for information and share aspects of themselves across digital platforms (Barlett et al. 2018a). In South Africa, recent data from Quintile 5 schools indicate that smartphone use among adolescents has increased rapidly to an average of 3.2 h per day, with 99.2% of adolescents reporting that they own a smartphone (Le Roux & Feldman 2024). These numbers reflect the degree to which smartphones have become a central feature of adolescents' social and emotional lives (Vaterlaus & Tarabochia 2021). An important consequence of this trend is that an increasing proportion of adolescent social interactions occur online. Twenge, Spitzberg and Campbell (2019b) found that between 1970 and 2017, there was a substantial decrease in daily in-person socialisation among adolescents in the United States. In addition to this decrease in face-to-face socialisation, adolescents are spending increasing amounts of time on social media platforms. In the US in 2016, 82% of adolescents reported using social media almost every day (Twenge, Martin & Spitzberg 2019a), while adolescents in the United Kingdom reported spending an average of 1 h – 3 h on social media every day (Scott, Biello & Woods 2019). As adolescents engage with social media and other online platforms, they are not only socialising but also experimenting with self-presentation and identity development. Studies suggest that adolescents often construct multiple different identities online, either as idealised versions of themselves or assumed identities (Alvermann et al. 2012; Van der Merwe 2017).

Read online:

Scan this QR code with your smart phone or mobile device to read online.

Social media offers constant and immediate feedback on these digital selves, which can either reinforce or challenge how adolescents perceive themselves in real life (Shapiro & Margolin 2014). However, adolescents' online profiles are not isolated from their offline identities (Alvermann et al. 2012), which makes them just as sensitive to online feedback and criticism (Shapiro & Margolin 2014). This increased digital involvement has introduced a range of unique challenges and risks. Adolescents are especially vulnerable to the negative effects of prolonged online engagement because of ongoing developmental changes in identity formation, self-control and increased sensitivity to social feedback (Branje et al. 2021).

An important dimension of online risk concerns cyberbullying and its implications for adolescent well-being and academic performance (Kowalski et al. 2014). Despite broad agreement that this phenomenon requires research attention, there are few large-scale, recent studies that provide empirical evidence of cyberbullying prevalence and effects among South African adolescents. We address this gap in the literature through a survey-based study of 659 adolescents from four high schools in Gauteng and the Western Cape. Our primary objective is to make an empirical contribution by addressing four primary research questions:

RQ1: What is the prevalence of direct and indirect cyberbullying among South African adolescents?

RQ2: Is the use of particular social media platforms associated with direct and indirect cyberbullying?

RQ3: Does cyberbullying involvement predict variance in psychological well-being among adolescents after controlling for demographic factors?

RQ4: Does cyberbullying involvement predict variance in academic performance among adolescents after controlling for demographic and psychological well-being factors?

Literature review

Cyberbullying is widely recognised as a form of intentional and repeated aggression that occurs through digital devices such as mobile phones, computers and tablets, targeting individuals who often find it difficult to defend themselves (Smith et al. 2008). Definitions of cyberbullying generally emphasise three key elements of intent to harm, repetition and an imbalance of power between the perpetrator and the victim (Olweus 1993; Smith et al. 2008; Tokunaga 2010). While early studies adapted the definition of traditional bullying to online contexts, later research has expanded the concept to include distinctive features of digital communication such as anonymity, permanence and wide audience reach (Patchin & Hinduja 2006; Tokunaga 2010). Unlike traditional bullying, cyberbullying can occur at any time and in any place, extending beyond the school environment and intensifying the psychological impact on victims. The digital nature of these interactions also means

that harmful content can be easily shared or preserved, making escape or resolution more difficult for cyber victims (Alhashmi et al. 2023). Cyberbullying manifests in a wide range of forms, many of which draw from traditional bullying behaviours but are amplified by the unique characteristics of digital platforms. The increasing complexity of online interactions has made it possible for perpetrators to exploit affordances such as anonymity, persistence and audience reach to inflict harm in both direct and indirect ways (Hinduja & Patchin 2014; Kowalski et al. 2014). Recognising the various forms cyberbullying can take is essential for understanding its prevalence and effects (Alhashmi et al. 2023). The typology proposed by Hinduja and Patchin (2014) remains foundational for understanding cyberbullying behaviours, such as harassment, denigration, impersonation and doxing, while the taxonomy proposed by Alhashmi et al. (2023) provides a more structured and multidimensional approach that accounts for evolving technologies and platforms. By categorising cyberbullying according to the nature of the act, delivery mode and type of cyberbullying, the Alhashmi et al. (2023) framework facilitates a deeper understanding of how cyberbullying operates in diverse online contexts. They distinguish between direct cyberbullying as '... a direct interaction between the bully and the victim, such as sending threatening messages or emails' (Alhashmi et al. 2023:6) and indirect cyberbullying as '... spreading rumours or harmful content about the victim to others, often without the victim's knowledge' (Alhashmi et al. 2023:6). Research on the prevalence of cyberbullying among adolescents has developed significantly over the past two decades. However, inconsistencies in definition, measurement and scope remain a challenge when trying to identify trends or compare studies. While some studies define cyberbullying broadly as any form of online harassment (Ybarra & Mitchell 2004), others emphasise specific characteristics, such as intentionality and power imbalance (Patchin & Hinduja 2006; Smith et al. 2008). These differences in definitions, and their impact on the measures adopted in studies contributes to the observed variance in reported prevalence rates of cyberbullying behaviour, from as low as 4% (Ybarra & Mitchell 2004) to as high as 42.8% (Gohal et al. 2023). Longitudinally, an increase in cyberbullying behaviour is observable, with recent systematic literature reviews also indicating an increase in research interest in cyberbullying globally (Brochado, Soares & Fraga 2017). A trend identified across multiple studies is the strong link between traditional and cyberbullying behaviour. Accordingly, adolescents who experience or engage in traditional bullying are more likely to be involved in cyberbullying (Beran et al. 2015; Olanmi, Agbaje & Adeyemi 2020; Ybarra & Mitchell 2004). This suggests that cyberbullying does not exist in isolation but rather extends from or amplifies patterns of offline aggression and/or vice versa. Another consistent finding is the relationship between access to and use of ICT (Information and Communication Technologies) and cyberbullying involvement. Studies conducted in technologically advanced countries, such as Canada (Beran et al. 2015) and South Korea (Lee & Shin 2017), indicate that adolescents who spend more time online

are more likely to become cybervictims or cyberbullies. This trend is supported by studies from regions with lower ICT accessibility, such as Nigeria (Olasanmi et al. 2020), which found that cyberbullying rates vary based on device and Internet availability. Literature reports inconsistent findings regarding the relationship between gender and cyberbullying involvement. While early studies such as those by Ybarra and Mitchell (2004) and Smith et al. (2008) reported minimal or no significant gender differences in cyberbullying behaviour, more recent research employing detailed instruments and differentiated behavioural categories has revealed consistent gendered patterns. Studies such as Lee and Shin (2017), Bergmann and Baier (2018) and Kyrrestad, Kaiser and Fossum (2023) demonstrate that while overall prevalence rates may appear similar, males and females tend to experience and perpetrate cyberbullying in distinct ways. Males are more likely to be involved in direct forms of aggression, particularly through online gaming or visual media, whereas females are more commonly associated with relational cyberbullying such as exclusion, rumour-spreading and ridicule, which reflects patterns observed in offline traditional bullying (Li 2006). Vo et al. (2026) also found no significant gender differences, but that males were more likely to report involvement as cyberbullies, whereas female students tended to report higher involvement as cybervictims. Similarly, Ma et al. (2024) found that males were more likely to engage as cyberbully victims. These discrepancies may be due in part to developmental differences, as the population of these studies often vary across age groups and school grades (Güllü, Karahan & Akçay 2023). Together, these studies suggest that gender differences in cyberbullying lie not in overall prevalence but in the nature and context of these experiences. Adolescence, and particularly early to middle adolescence, is consistently identified as a period of heightened experiences of cyberbullying. This vulnerability is closely linked to neurodevelopmental changes, as adolescents undergo cognitive, emotional and social transformations that influence how they interact with peers and respond to online conflict (Jaworska & MacQueen 2015). As digital connectivity becomes integral to adolescent social life, especially through social networking sites, the structures of peer influence are reconfigured in ways that may reinforce risk behaviours and online aggression (Huang et al. 2014). Digital autonomy typically increases during early adolescence, with most adolescents beginning to use technology independently between the ages of 10 and 14 (Vaterlaus & Tarabochia 2021). This coincides with mid-adolescence, the period in which research suggests cyberbullying behaviour peaks. Across multiple cultural contexts, quantitative studies consistently identify mid-adolescence as the period where adolescents experience the highest rates of cyberbullying behaviour. In Canada, Beran et al. (2015) found that the highest rates of involvement were among 13–15-year-olds, with lower rates among both younger and older age groups. Smith et al. (2008) and Lee and Shin (2017) similarly observed higher cyberbullying rates among 14–16-year-olds in England and South Korea, respectively. Gohal et al. (2023), who surveyed Saudi Arabian adolescents, found that victimisation was highest among

those aged 16–18 years. While these studies differ in specific age groupings, they collectively indicate that cyberbullying involvement intensifies from early into mid-adolescence. As social media platforms grow in popularity and incorporate features that interact with human psychology, they play a central role in cyberbullying patterns (Bayer, Triêu & Ellison 2020). Social media stands out from other online media because of their interactive, dynamic and user-focused nature. Bayer et al. (2020) describe how affordances of social media, such as profiles and streams, encourage both connection and comparison. The accessibility and interactivity of platforms such as Instagram, TikTok, Snapchat and WhatsApp have created digital spaces where social validation and visibility play central roles (Aizenkot 2018; Barlett et al. 2018b; Charteris et al. 2016). Several studies have found that frequent use of social media platforms is associated with higher rates of cyberbullying involvement, both as a victim and as a perpetrator (Abaido 2020; Barlett et al. 2018b; Dredge, Gleeson & De la Piedad Garcia 2014; Lee & Shin 2017; Villanueva-Moya et al. 2023). Cyberbullying behaviours common to social media, which range from spreading rumours and sending hurtful messages to posting embarrassing content, are reinforced by platform features that allow for visibility, permanence and social interaction (Charoenwanit 2019; Villanueva-Moya et al. 2023). As cyberbullying first became a subject of academic study, its effects on adolescents' mental and physical well-being have been investigated. Well-being is a multidimensional concept encompassing physical health, emotional stability, social relationships and overall quality of life (Bharara et al. 2019). The impacts of cyberbullying on adolescent well-being can be severe and may include the disruption of relationships, decreased optimism and happiness and increased stress (Nixon 2014). Being a cybervictim has been consistently linked to anxiety, depression, decreased self-esteem and, in extreme cases, self-harm and suicidal ideation (Agustiniingsih et al. 2024). Mursaleen, Jabeen and Ramzan (2025) highlight adolescence as a crucial developmental stage where such experiences can have lasting effects. Kowalski and Limber (2013) found that those who were both cybervictims and cyberbullies reported higher levels of depression, anxiety and psychosomatic health issues, while Fahy et al. (2016) similarly found long-term associations with depression and social anxiety. Franks (2015) observed declines in self-esteem and confidence and increases in sadness, aggression and paranoia. Although cyberbullying generally harms well-being, Brighi et al. (2019) found that resilience had a small mediating effect, helping to reduce emotional distress. Adolescence is also a critical period for personal and academic development, yet cyberbullying creates challenges that can hinder academic success. Well-being and academic performance are closely related, as emotional distress weakens motivation and engagement (Needham, Crosnoe & Muller 2004). Poor well-being, marked by anxiety, depression and stress, has been linked to concentration difficulties, lower motivation and reduced school engagement (Agustiniingsih et al. 2024; Needham et al. 2004). Cybervictims often experience absenteeism, declining grades and school avoidance (Beran & Li 2007; Charoenwanit 2019; Franks 2015). Gohal et al. (2023) found that over a quarter

of adolescents reported a negative impact on academic performance because of cyberbullying, with nearly 20% considering leaving school. Theoretical perspectives suggest that cyberbullying disrupts motivation and self-perception, leading to poorer academic outcomes (Pintrich 2000; Ryan & Deci 2000). Over the past two decades, research on cyberbullying among South African adolescents has demonstrated both an overall rise in prevalence rates and notable shifts in how it is conducted. Early studies, such as those by Schaffner (2010) and Oosterwyk and Parker (2010), found that approximately 16% – 32% of adolescents reported experiences as cybervictims. Tustin, Zulu and Basson (2014) reported that 15.2% of adolescents who experienced bullying were specifically cybervictims, while Payne (2015) found that 13.5% of adolescents identified as cybervictims in the previous 2 months. As access to mobile phones and Internet-based communication expanded over the past decade, these rates rose. More recent findings by Els (2024) indicate a significant increase, with 43.5% of adolescents reporting experiences as cybervictim. These patterns suggest that as digital connectivity became more common in adolescents' daily lives, so too did their exposure to cyber risks. Additionally, the evolution of cyberbullying definitions over time, from early conceptions limited to social networking platforms (Schaffner 2010) and mobile chat services (Oosterwyk & Parker 2010), to broader definitions encompassing instant messaging apps and anonymous platforms (Els 2024; Payne 2015), has likely contributed to variations in reported prevalence.

While Els (2024) provides valuable insight into the relationships between different forms of bullying among South African adolescents, there is a dearth of data about the prevalence of specific forms of cyberbullying, the social media platforms on which they occur and their associations with well-being and academic performance among this cohort.

Research methods and design

Data and participants

We adopted a post-positivist research philosophy, which assumes that while absolutes are unattainable when studying human behaviour, it is possible to use empirical data and objective measurement to approximate underlying patterns within social contexts (Creswell & Creswell 2018). This approach aligns with the goal of exploring theoretically grounded questions and examining relationships between defined variables. Accordingly, a quantitative approach was adopted to analyse data collected through cross-sectional surveys of learners from five high schools in South Africa. Invitations to participate in the research project were sent to multiple high schools across South Africa, with five responding positively. While invitations were sent to school across Quintiles 1–5, the schools that agreed to participate were all in Quintile 5, classifying them as fee-paying schools located in higher socioeconomic communities. While this limited our ability to generalise any findings across lower quintile schools in South Africa, it did allow for an exploration of cyberbullying behaviours within digitally advanced

school environments. Following each school's agreement to participate, permission to proceed with data collection procedures was obtained from the relevant provincial departments of education. Each school coordinated the data collection process in a way that minimised disruptions to the school's schedule, with learners completing questionnaires in a dedicated 30-min time slot in normal class settings. Prior to questionnaire completion, a teacher introduced the project and explained that participation was voluntary and anonymous, and that no personal information was collected. Learners could choose to complete a paper-based version of the questionnaire or use their smartphones to complete an online version. To access the online version, a quick response (QR) code provided to each teacher could be scanned, and all questionnaires were available in both English and Afrikaans.

A combination of different questionnaires was used at each school, addressing different aspects of adolescent online behaviour. For the purpose of the present study, we analysed the data collected through one of these questionnaires, which was completed by 659 learners across four of the participating schools.

Measures

In addition to items relating to demographic data (school, gender and grade), the questionnaire included measures of academic performance, social media use, well-being and cyberbullying. The sections that follow describe each of the measures.

Academic performance

Participants were asked to indicate their academic average for the previous school year on a scale ranging from *below 30%* to *above 90%* with increments of 5%. We opted for self-reported academic performance data rather than official academic records as it further protected the anonymity of the participants. Prior research has shown that self-reported academic results are reliable and correlate strongly with actual academic results (Sticca et al. 2017).

Social media use

A matrix-style item was used to measure the frequency with which participants used 10 popular social media platforms: WhatsApp, Instagram, TikTok, YouTube, Twitter (or X), Facebook, Reddit, Snapchat, Discord and Twitch. For each platform, participants were asked to select one option on a seven-point frequency scale (*Never; Rarely; About once a week; A couple of times per week; About once a day; Multiple times per day; I constantly check it*).

Well-being

To measure psychological well-being, we used the EPOCH Measure of Adolescent Well-being developed by Kern et al. (2016). The measure is grounded in positive psychology and addresses five dimensions of well-being: Engagement, perseverance, optimism, connectedness and happiness (Kern et al. 2016). Each dimension is measured through four

questions that are scored on a five-point Likert scale ranging from *Almost never* or *Not at all like me* to *Almost always* or *Very much like me*, with higher scores indicating better well-being. Across all dimensions, the measures displayed high internal consistency ($\alpha > 0.74$).

Cyberbullying

Cyberbullying involvement was measured using the Revised Cyber Bullying Inventory-II (RCBI-II) developed by Topçu and Erdur-Baker (2018). The RCBI-II includes 10 cyberbullying behaviours, ranging from taking over someone else's account to sending threatening or hurtful messages. For each form of behaviour, participants are asked to indicate the frequency of cybervictim experiences (*This happened to me*) and cyberbully experiences (*I did this*) using a four-point scale (*Never, Once, 2 or 3 times* and *More than 3 times*). Both the measure of experiences as a cybervictim ($\alpha = 0.779$) and as a cyberbully ($\alpha = 0.742$) displayed good internal consistency.

Data analysis

To address RQ1, we calculated descriptive statistics for the different forms of cyberbullying based on key demographic indicators (gender, age and school). To address RQ2, we calculated bivariate correlations between the frequencies of use of different social media platforms and involvement with direct and indirect cyberbullying. To address RQ3, we performed linear regressions to predict variance in each of the five different indicators of psychological well-being using demographics and cyberbullying indicators as predictors. Finally, to address RQ4, we conducted a two-step hierarchical linear regression to predict variance in academic performance. In the first model, predictors included demographic and psychological well-being indicators. In the second model, we added cyberbullying indicators.

Ethical considerations

Ethical clearance to conduct this study was obtained from the Stellenbosch University Social, Behavioural and Education Research Ethics Committee (Ref. No. 29470). Permission to conduct research in collaboration with the participating high schools was also obtained from the relevant provincial education departments, as is required by South African legislation. The data contained no personal identifying information of any of the participants. All participants were informed of the purpose and nature of the research, and informed consent was obtained from the learners' parents or guardians prior to their participation in the project. No information that would enable personal identification of participants was collected.

Results

Our final sample included 659 learners across four different schools. Table 1 presents the number of participants by school, gender and grade. The majority identified as female ($n = 455$, 69.0%), followed by male ($n = 195$, 29.6%) and other ($n = 9$, 1.4%). Given the small number of participants that

TABLE 1: Number of participants by school, gender and grade.

School	Gender	Gr. 8	Gr. 9	Gr. 10	Gr. 11	Gr. 12	Total
HS2	Male	0	0	0	0	0	0
	Female	23	28	28	24	24	127
	Other	0	0	1	0	0	1
HS3	Male	13	20	26	10	14	83
	Female	10	10	28	18	10	66
	Other	0	0	2	1	0	3
HS4	Male	0	0	0	1	0	1
	Female	35	36	24	24	14	133
	Other	0	0	0	1	0	1
HS5	Male	22	28	28	12	21	111
	Female	30	27	28	17	17	119
	Other	1	0	0	1	1	3
Total		134	150	165	108	102	659

Gr., Grade; HS, high school.

reported other as their gender, this group was not included in any comparative analyses based on gender.

The majority of participants reported spending more than 4 h per day on their phones ($n = 248$, 37.6%), while the minority reported spending less than 1 h on their phones ($n = 11$, 1.7%). The second highest number of participants reported 3 h – 4 h of daily screentime ($n = 167$, 25.3%), followed by 2 h – 3 h ($n = 144$, 21.9%) and then 1 h – 2 h ($n = 89$, 13.5%). A Mann-Whitney t test revealed that differences in screentime between females ($M = 3.89$, $SD = 1.10$) and males ($M = 3.70$, $SD = 1.16$) were not significant, $U = 40316$, $p = 0.054$, $r = -0.09$.

Cyberbullying involvement and demographics

Nearly two-thirds of participants (64%) reported involvement as either a cybervictim, cyberbully or both at least once in the last 6 months. 19.9% ($n = 131$) of the participants were categorised as only cybervictims, while 6.7% ($n = 44$) were only cyberbullies. The largest category consisted of participants who reported participating in both roles ($n = 246$, 37.3%). The remaining participants ($n = 238$, 36.1%) reported no involvement in cyberbullying at all. Over half of the female participants reported some form of cyberbullying involvement ($n = 296$, 65.1%). Similarly, over half of the male participants also reported some form of cyberbullying involvement ($n = 122$, 62.6%). A slightly higher proportion of females reported being only a cybervictim at least once ($n = 96$, 21.1%) compared to males ($n = 35$, 19.9%). In contrast, a higher percentage of males reported acting as only a cyberbully at least once ($n = 15$, 7.7%) than females ($n = 28$, 6.2%). The largest proportion of involvement for both genders was found in the combined category, with 37.8% of females ($n = 172$) and 36.9% of males ($n = 72$) reporting dual involvement in cyberbullying.

In general, the proportion of participants who reported some form of cyberbullying involvement decreased as the grade increased. Around three-quarters of the participants in Grade 8 reported some form of cyberbullying involvement ($n = 101$, 75.4%), while only about half of the participants in Grade 12 reported some form of cyberbullying involvement ($n = 54$, 52.9%).

Prevalence of specific cyberbullying acts

The means and standard deviations for each of the cyberbullying behaviours in the RCBI-II are presented in Table 2.

Mann–Whitney independent samples *t* tests indicated that females reported higher frequencies of being insulted online ($U = 39\,111$, $p = 0.003$, $r = -0.118$), and having rumours spread about them ($U = 40\,074$, $p = 0.013$, $r = -0.097$), while males reported higher frequencies of threatening others online ($U = 42\,053$, $p = 0.011$, $r = 0.052$) and sharing inappropriate photos and/or videos of others without their permission ($U = 41\,108$, $p < 0.001$, $r = 0.073$). None of the other differences were statistically significant ($p > 0.05$).

The Spearman's rank-order correlations between grade and each of the 10 cyberbullying behaviours, from both the victim and bully perspective, showed that grade had small, negative correlations with someone taking over the password of their account ($r_s = -0.115$, $p = 0.003$) and having an inappropriate photo or video of them shared ($r_s = -0.08$, $p = 0.040$). This suggests that younger adolescents were slightly more likely to report experiencing these behaviours. None of the other cyberbullying behaviours, either experienced or perpetrated, were significantly associated with grade.

Cyberbullying acts and social media platforms

Table 3 presents the means and standard deviations of the frequency of use for social media platforms. WhatsApp was the most frequently used platform ($M = 5.77$, SD [standard deviation] = 1.01), followed by Instagram ($M = 4.50$, SD = 1.98), TikTok ($M = 3.73$, SD = 2.25) and YouTube ($M = 3.72$, SD = 1.69).

Mann–Whitney *U* tests indicated that females reported significantly higher usage of WhatsApp ($U = 30\,103$, $p < 0.001$, $r = -0.32$), Instagram ($U = 33\,480$, $p < 0.001$, $r = -0.25$), TikTok ($U = 30\,536$, $p < 0.001$, $r = -0.31$) and Snapchat ($U = 31\,672$, $p < 0.001$, $r = -0.29$). In contrast, males reported significantly higher usage of YouTube ($U = 35\,431$, $p < 0.001$, $r = 0.20$), Discord ($U = 26\,253$, $p < 0.001$, $r = 0.41$), Reddit ($U = 36\,202$, $p < 0.001$, $r = 0.18$), Twitch ($U = 35\,927$,

$p < 0.001$, $r = 0.19$) and Twitter (X) ($U = 40\,239$, $p < 0.001$, $r = 0.09$). Only Facebook usage did not significantly differ by gender ($U = 43\,168$, $p = 0.418$, $r = 0.03$).

Figure 1 displays the results of the Spearman's correlation that was computed to assess the relationship between the use of four social media platforms and the different types of cyberbullying, as experienced as a cybervictim. The results showed that TikTok use was significantly associated with multiple types of cyberbullying, including being threatened ($r_s = 0.130$, $p < 0.001$), being insulted ($r_s = 0.152$, $p < 0.001$), being sent embarrassing or hurtful messages ($r_s = 0.142$, $p < 0.001$), having a secret shared without permission ($r_s = 0.138$, $p < 0.001$), having inappropriate videos and/or photos shared ($r_s = 0.089$, $p = 0.023$) and having rumours spread about them ($r_s = 0.164$, $p < 0.001$). Instagram use was positively correlated with being insulted ($r_s = 0.124$, $p = 0.001$), having a secret shared without permission ($r_s = 0.104$, $p = 0.008$) and having rumours spread about them ($r_s = 0.125$, $p = 0.001$). Snapchat showed similar correlations to Instagram, with the addition of it being correlated to being sent embarrassing or hurtful messages ($r_s = 0.130$, $p < 0.001$). WhatsApp use had the fewest correlations among the four social media and was only associated with being insulted ($r_s = 0.118$, $p = 0.002$) and having rumours spread about them ($r_s = 0.186$, $p < 0.001$).

TABLE 3: Descriptive statistics of frequency of social media usage per medium.

Social media	All		Female		Male	
	Mean	SD	Mean	SD	Mean	SD
WhatsApp	5.77	1.01	5.95	0.90	5.37	1.11
Instagram	4.50	1.98	4.75	1.92	3.93	2.03
TikTok	3.73	2.25	4.10	2.26	2.88	2.01
YouTube	3.72	1.69	3.52	1.69	4.12	1.64
Twitter (X)	1.18	0.61	1.13	0.54	1.28	0.74
Facebook	1.29	0.78	1.27	0.73	1.35	0.86
Reddit	1.23	0.71	1.11	0.42	1.46	1.01
Snapchat	2.54	1.98	2.84	2.08	1.89	1.54
Discord	1.53	1.28	1.22	0.84	2.24	1.74
Twitch	1.20	0.66	1.08	0.39	1.44	0.99

Notes: The item scale was recoded as *Never* = 1 to *I constantly check it* = 7; therefore, a mean of 5.95 represents that the mean response was between *About once a day* (5) and *Multiple times per day* (6). The analyses that follow limited the social media platforms to the four that demonstrated strong significant correlations across the general cyberbullying classifications, while the other six platforms showed weak or non-significant correlations.

SD, standard deviation.

TABLE 2: Modes of cyberbullying behaviours.

Behaviour	Victim						Perpetrator					
	Female		Male		All		Female		Male		All	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
1. Taking over the password of someone's account	1.23	0.59	1.35	0.78	1.26	0.65	1.12	0.41	1.21	0.59	1.14	0.47
2. Using someone's account without their permission	1.05	0.29	1.08	0.37	1.06	0.32	1.02	0.19	1.05	0.23	1.03	0.21
3. Threatening someone	1.19	0.51	1.25	0.71	1.21	0.57	1.06	0.30	1.15	0.51	1.08	0.38
4. Insulting someone	1.55	0.90	1.33	0.74	1.48	0.86	1.27	0.65	1.25	0.66	1.27	0.66
5. Sending embarrassing and hurtful messages	1.51	0.89	1.48	0.93	1.51	0.90	1.23	0.60	1.35	0.80	1.27	0.67
6. Sharing an inappropriate photo or video of someone	1.20	0.56	1.26	0.68	1.22	0.60	1.06	0.33	1.18	0.59	1.09	0.42
7. Sharing a secret without the owner's permission	1.55	0.92	1.48	0.88	1.52	0.90	1.36	0.71	1.33	0.76	1.35	0.72
8. Spreading rumours	1.53	0.91	1.38	0.84	1.49	0.89	1.12	0.41	1.11	0.45	1.12	0.42
9. Creating an account for someone without their knowledge	1.05	0.26	1.06	0.26	1.06	0.26	1.02	0.19	1.02	0.12	1.02	0.17
10. Creating a humiliating website	1.01	0.13	1.03	0.24	1.02	0.17	1.01	0.15	1.01	0.14	1.01	0.15

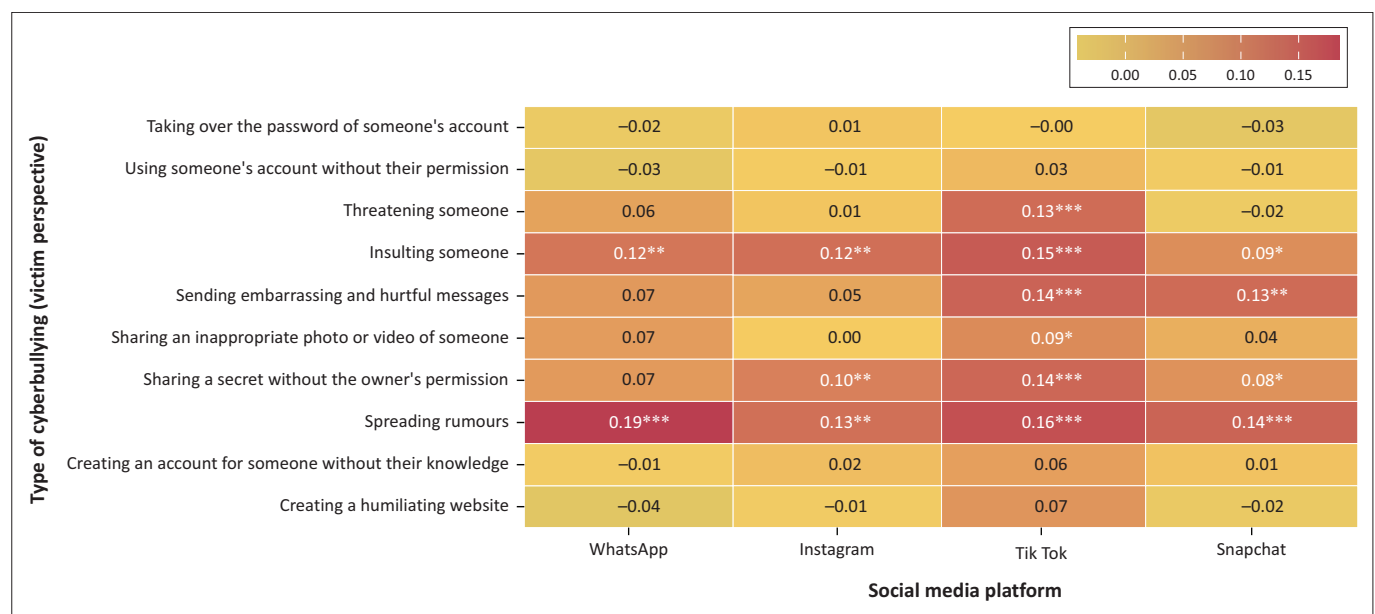
SD, standard deviation.

Figure 2 presents the results of Spearman's correlation that was computed to assess the relationship between the use of four social media platforms and the different types of cyberbullying, as engaged in as a cyberbully. The results showed that the use of Instagram was significantly correlated with four of the types of cyberbullying, including taking over the password of an account ($r_s = 0.114$, $p = 0.003$), insulting someone ($r_s = 0.089$, $p = 0.023$), sending embarrassing or hurtful messages ($r_s = 0.143$, $p < 0.001$) and sharing secrets ($r_s = 0.134$, $p < 0.001$). TikTok use was also associated with multiple types, such as sending embarrassing or hurtful messages ($r_s = 0.163$, $p < 0.001$), sharing secrets ($r_s = 0.165$, $p < 0.001$) and insulting someone ($r_s = 0.090$, $p = 0.021$). WhatsApp

use was significantly positively correlated with two types of cyberbullying, insulting someone ($r_s = 0.125$, $p = 0.001$) and sharing secrets ($r_s = 0.080$, $p = 0.040$). Snapchat usage showed similar correlations to WhatsApp, with the addition of sending embarrassing or hurtful messages ($r_s = 0.089$, $p = 0.022$).

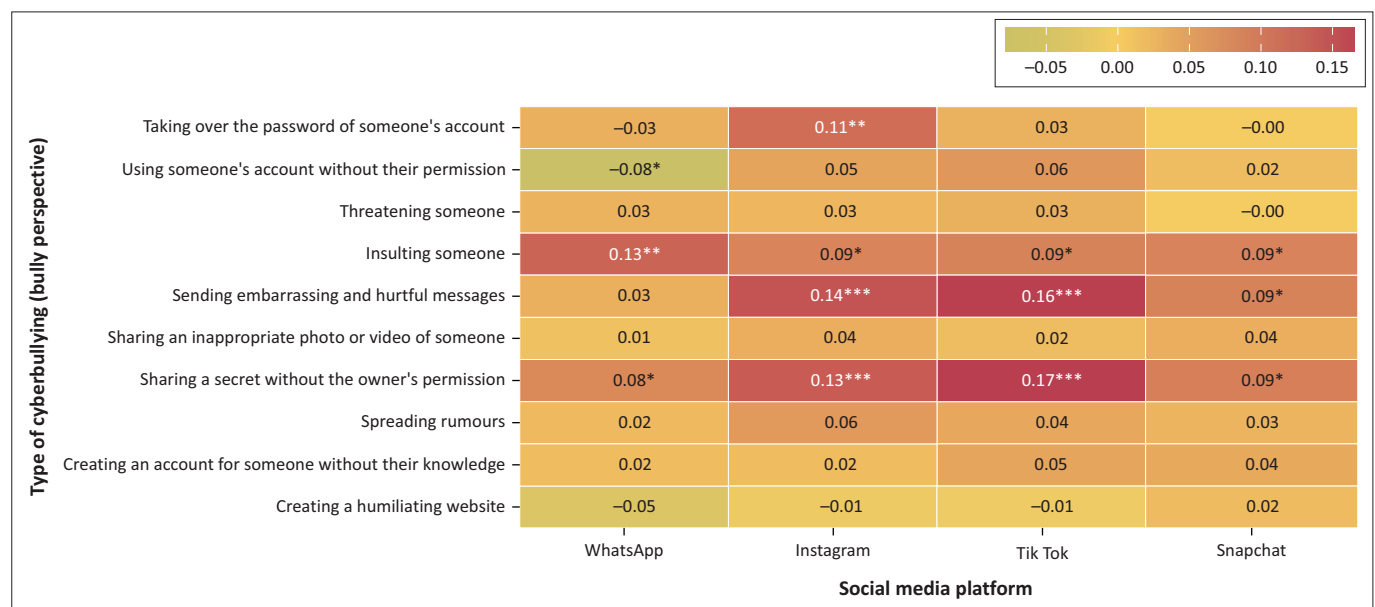
Cyberbullying, well-being and academic performance

We classified each of the cyberbullying behaviours as either *direct* or *indirect* based on Alhashmi et al.'s (2023) taxonomy. This produced four scales: Indirect cybervictim ($\alpha = 0.629$), indirect cyberbully ($\alpha = 0.628$), direct cybervictim ($\alpha = 0.713$) and direct cyberbully ($\alpha = 0.611$). While the alpha values for



* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

FIGURE 1: Spearman's correlation coefficients between frequency of social media use and types of cybervictim experiences.



* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

FIGURE 2: Spearman's correlation coefficients between frequency of social media use and types of cyberbully engagement.

these subscales fell below the 0.7 threshold, each displayed good mean inter-item correlation ($MIC > 0.35$), making them acceptable for use in further analyses (Briggs & Cheek 1986). Table 4 presents the Spearman's correlation coefficients between the four forms of cyberbullying involvement, the five well-being dimensions and academic performance. Academic performance was significantly negatively associated with being a direct ($r_s = -0.173$, $p < 0.001$) and indirect cybervictim ($r_s = -0.186$, $p < 0.001$). Conversely, four of the well-being dimensions were positively associated with academic performance, including perseverance ($r_s = 0.256$, $p < 0.001$), optimism ($r_s = 0.155$, $p < 0.001$), connectedness ($r_s = 0.165$, $p < 0.001$) and happiness ($r_s = 0.146$, $p < 0.001$). Perseverance, optimism and happiness all displayed significant associations with multiple cyberbullying variables.

Cyberbullying as a predictor of well-being

To examine the relationship between cyberbullying and well-being, we tested linear regression models predicting each of the well-being dimensions with the four modes of cyberbullying involvement while controlling for demographic factors (school, grade and gender). Three of the models were statistically significant. For perseverance ($F(12, 637) = 2.93$, $p < 0.001$, $R^2 = 0.0524$), the model explained just over 5% of variance with direct cyberbullying emerging as a significant negative predictor ($\beta = -0.1440$, $p = 0.008$). By contrast, in the model predicting connectedness ($F(12, 637) = 3.07$, $p < 0.001$, $R^2 = 0.0547$), direct cyberbullying was a significant positive predictor ($\beta = 0.1190$, $p = 0.028$). Finally, for happiness, the model was significant ($F(12, 637) = 2.26$, $p = 0.002$, $R^2 = 0.0470$), with experiences as a direct cybervictim emerging as a significant negative predictor ($\beta = -0.1133$, $p = 0.049$).

Cyberbullying and well-being as predictors of academic performance

A hierarchical linear regression model was tested to examine the extent to which cyberbullying involvement predicted academic performance, over and above the predictive capacity of well-being and demographic factors. The analysis included two models. Model 1 included the demographic variables and the five dimensions of well-being as predictors. It was statistically significant ($F(13, 636) = 10.65$, $p < 0.001$) and explained 16.2% of the variance in academic performance ($R^2 = 0.179$, adjusted $R^2 = 0.1620$). Perseverance emerged as

the strongest positive predictor of academic performance ($\beta = 0.2471$, $p < 0.001$), while engagement was a significant negative predictor ($\beta = -0.0943$, $p = 0.027$). Connectedness, happiness and optimism did not significantly predict academic performance in the model. Model 2, which is presented in Table 5, included the cyberbullying involvement indicators and was also statistically significant ($F(17, 632) = 9.37$, $p < 0.001$). It improved the model fit ($F(4, 632) = 4.45$, $p = 0.001$, $\Delta R^2 = 0.0225$) and explained 18% of the observed variance in academic performance. While a significant predictor in Model 1, engagement was not significant ($\beta = -0.0804$, $p = 0.057$) in Model 2, but perseverance remained a strong predictor ($\beta = 0.2346$, $p < 0.001$). Experiences as a victim of direct cyberbullying was a negative predictor ($\beta = -0.1120$, $p = 0.035$) in Model 2.

Discussion

In this study, we explored the prevalence and patterns of cyberbullying behaviour among adolescents in South Africa. Nearly two-thirds of our sample (63.9%) reported involvement as either cybervictims, cyberbullies or both, with dual-role participants (37.3%) representing the largest proportion. The most common experiences involved having a secret shared (31.0%), being insulted (29.0%) or being sent embarrassing or hurtful messages (28.7%). Similarly, the most frequently reported behaviours engaged in as a cyberbully were sharing a secret without permission (23.2%), insulting someone (17.3%) and sending embarrassing and hurtful messages (17.1%). The least common cyberbullying behaviours were related to impersonation, such as creating an account on behalf of someone else or creating a humiliating website. This suggests that adolescents experience and engage in cyberbullying behaviours that are emotionally driven, impulsive and require little planning or technical skill more often than those that require sustained effort and planning. In contrast to early studies such as Patchin and Hinduja (2006), where impersonation and exclusion were more common, the prominence of rumour spreading and the sharing of private content in our data suggests that the affordances of social networking platforms have impacted cyberbullying behaviours. Given that the use of these platforms has become increasingly ingrained in adolescents' social interaction patterns, this finding is certainly not surprising. However, it is important to

TABLE 4: Spearman's correlation coefficients between cyberbullying involvement, well-being and academic performance.

Measures	1	2	3	4	5	6	7	8	9	10
1. Direct CV	-	-	-	-	-	-	-	-	-	-
2. Direct CB	0.560***	-	-	-	-	-	-	-	-	-
3. Indirect CV	0.628***	0.430***	-	-	-	-	-	-	-	-
4. Indirect CB	0.459***	0.481***	0.492***	-	-	-	-	-	-	-
5. Engagement	-0.030	-0.028	-0.021	-0.046	-	-	-	-	-	-
6. Perseverance	-0.128**	-0.159***	-0.102**	-0.113**	0.318***	-	-	-	-	-
7. Optimism	-0.100**	-0.107**	-0.056	-0.030	0.365***	0.442***	-	-	-	-
8. Connectedness	-0.071	-0.006	-0.089*	-0.043	0.354***	0.282***	0.477***	-	-	-
9. Happiness	-0.142***	-0.101**	-0.089*	-0.070	0.464***	0.328***	0.566***	0.540***	-	-
10. Academic performance	-0.173***	-0.073	-0.186***	-0.089*	0.057	0.256***	0.155***	0.165***	0.146***	-

CV, cybervictim; CB, cyberbully.

*, $p < 0.05$; **, $p < 0.01$; ***, $p < 0.001$.

TABLE 5: Model 2 coefficients (Academic performance).

Predictor	Estimate	SE	<i>t</i>	<i>p</i> -value	Standard estimate	95% CI	
						Lower	Upper
Intercept^a	65.1985	3.664	17.796	< 0.001	-	-	-
School:							
HS3 – HS2	-2.4107	1.418	-1.700	0.090	-0.20595	-0.4439	0.03196
HS4 – HS2	5.6736	1.346	4.215	< 0.001	0.48469	0.2589	0.71051
HS5 – HS2	2.5780	1.308	1.971	0.049	0.22024	0.0009	0.43962
Grade:							
Gr. 8 – Gr. 10	1.6825	1.277	1.318	0.188	0.14373	-0.0704	0.35791
Gr. 9 – Gr. 10	1.9286	1.220	1.580	0.115	0.16475	-0.0400	0.36948
Gr. 11 – Gr. 10	0.4306	1.342	0.321	0.748	0.03679	-0.1883	0.26192
Gr. 12 – Gr. 10	-0.4300	1.363	-0.315	0.753	-0.03673	-0.2654	0.19198
Gender:							
Male – Female	-2.4858	1.111	-2.238	0.026	-0.21236	-0.3987	-0.02603
Engagement	-1.1097	0.582	-1.905	0.057	-0.08035	-0.1632	0.00246
Perseverance	3.1933	0.568	5.624	< 0.001	0.23458	0.1527	0.31649
Optimism	0.0980	0.644	0.152	0.879	0.00734	-0.0873	0.10202
Connectedness	0.5436	0.653	0.832	0.405	0.03900	-0.0530	0.13099
Happiness	0.9875	0.678	1.457	0.146	0.07579	-0.0264	0.17793
Direct CV	-2.0767	0.983	-2.112	0.035	-0.11200	-0.2161	-0.00785
Direct CB	2.3534	1.360	1.731	0.084	0.08786	-0.0118	0.18752
Indirect CV	-1.5250	1.709	-0.893	0.372	-0.04426	-0.1416	0.05312
Indirect CB	-4.4232	2.318	-1.908	0.057	-0.08720	-0.1769	0.00255

Gr., Grade; CB, cyberbully; CV, cybervictim; SE, standard error; CI, confidence interval; HS, high school.

a, represents reference level.

acknowledge the various ways in which social media affordances such as anonymity and ubiquity lubricate cyberbullying behaviour. Additionally, the persistent nature of online information can increase the degree of harm experienced by cybervictims (John et al. 2018). The gender differences we observed were small but consistent with the literature: Females reported slightly higher rates of cybervictimisation, whilst males reported marginally higher rates of cyberbullying (Beran et al. 2015; Oosterwyk & Parker 2010; Smith et al. 2008; Tustin et al. 2014; Vo et al. 2026; Ybarra & Mitchell 2004). Additionally, females were found to experience relational or verbal cyberbullying more frequently, such as having rumours spread about them, being excluded and being ridiculed or insulted (Kyrrestad et al. 2023; Lee & Shin 2017). Vo et al. (2026) similarly found that females reported higher instances of being ignored or excluded. Ma et al. (2024) suggest that adolescent males are more prone to impulsive behaviour and poor self-control, which could increase their likelihood of becoming a cyberbully, while female tendency towards relational and indirect bullying is facilitated by the nature of cyberbullying. While smartphone use volume did not differ significantly between genders, differences in usage of social media platforms did. Females reported significantly higher usage of WhatsApp, Instagram, TikTok and Snapchat, while males reported higher usage of YouTube, Discord, Reddit and Twitch. These platforms each afford online engagement in different ways and may contribute to different experiences for females and males. For example, female adolescents' use of social media that focus on communication, connection and presentation may increase their vulnerability to insults and rumours through comments, posts and messages. Conversely, the platforms more commonly used by males are centred around content consumption, gaming and group

interactions, which may facilitate hostile interactions or uploading harmful content. The results revealed a downward trend of overall cyberbullying involvement among the grades, with Grade 8s reporting the most frequent involvement in cyberbullying (75.4%) and Grade 12s the least frequent (52.9%). The higher rate of cyberbullying involvement among Grade 8 learners could be attributed to their newness to the high school environment and their more recent adoption of social media, where they may be socially and digitally vulnerable. In the early stages of adolescence, individuals are still developing emotionally and are more likely to take risks and act impulsively, which increases their exposure to cyberbullying (Jaworska & MacQueen 2015). Their identities are still developing and are heavily influenced by external interactions and validation (Branje et al. 2021), which makes them more susceptible to peer pressure and the desire for social acceptance. They may also view cyberbullying as a way to gain favour among certain peers and climb the social hierarchy. In contrast, older adolescents show more emotional stability and regulation, as well as a more stable identity, which enhances their ability to cope with cyberbullying. Our data indicate that cyberbullying involvement varies significantly across social media platforms. Adolescents who reported frequent use of TikTok were more likely to send or receive embarrassing or hurtful messages and to spread rumours, while Instagram use correlated with sharing secrets, sending hurtful messages and exclusionary behaviour. Snapchat use was also linked with both victim and perpetrator experiences. These patterns reflect the inherently performative and highly visual affordances of these platforms, which amplify opportunities for comparison, impulsive interactions and public commentary (Abaido 2020; Barlett et al. 2018b; Villanueva-Moya et al. 2023).

Conversely, WhatsApp showed weaker associations, primarily linked to indirect behaviours such as gossiping and exclusion, which are more characteristic of private, closed-group communication (Lee & Shin 2017). YouTube, in contrast, showed weak negative correlations with cyberbullying involvement, supporting prior evidence that platforms focused on passive content consumption rather than interpersonal exchange present fewer opportunities for cyberbullying. Cyberbullying involvement also emerged as a significant predictor of psychological well-being. Regression analyses demonstrated that direct forms of cyberbullying, both perpetration and victimisation, were most strongly associated with well-being outcomes. The model predicting perseverance was significant, with direct cyberbullying emerging as a significant negative predictor ($\beta = -0.144$, $p = 0.008$). Adolescents who engaged in direct cyberbullying reported lower perseverance, suggesting that such behaviour may reflect underlying frustration, poor self-regulation or social tension that diminishes goal-directed persistence. The model predicting happiness was also significant, with direct cybervictimisation emerging as a significant negative predictor ($\beta = -0.113$, $p = 0.049$). This is consistent with research showing that cybervictims often experience emotional exhaustion, decreased life satisfaction and depressive symptoms as a result of persistent exposure to online aggression (Agustiniingsih et al. 2024; Nixon 2014; Payne 2015). Interestingly, direct cyberbullying was a significant positive predictor of connectedness ($\beta = 0.119$, $p = 0.028$). These findings suggest that adolescents may use cyberbullying as a strategy for navigating social hierarchies and a means to gain social capital. Moyo (2017) found that around half of the adolescents they interviewed viewed cyberbullying as a normal and expected part of online interactions, which could contribute to the normalisation of these behaviours within peer groups. The analysis of academic performance showed that cyberbullying involvement predicted variance even after controlling for demographic and well-being factors. Specifically, being a victim of direct cyberbullying was a significant negative predictor of academic performance. Similarly, acting as an indirect cyberbully approached significance as a negative predictor. This suggests that cyberbullying involvement uniquely affects academic performance, even after other demographic and psychological variables are controlled for. While the overall effect sizes for the models were modest, the increase in explained variance from one model to the next highlighted the contribution of well-being and cyberbullying to predicting academic performance. These findings echo research demonstrating that adolescents who experience cyberbullying often report lower academic engagement, reduced concentration and increased absenteeism because of stress and social withdrawal (Beran & Li 2007; Charoenwanit 2019; Gohal et al. 2023). While the relationship between perpetration and academic performance was weaker, the borderline significance of being an indirect cyberbully could suggest cognitive dissonance, internal conflict or feelings of guilt, which may disrupt academic focus. Learners may turn to cyberbullying as a way of coping with underachieving in their academics and to gain some feelings of control by

targeting other learners. Conversely, the opposite relationship may hold true, where cyberbullies are more concerned with peer social status and less with academics. The association of cyberbullying involvement with academic performance suggests that online experiences and behaviours can shape real-world outcomes. Adolescents who are targeted directly online may experience lower self-esteem, which reduces confidence in their ability to perform academically, as well as decreased ability to focus and complete assignments both inside and outside of school. Adolescents who experience being a cybervictim may turn to maladaptive coping strategies that actively harm their academic performance but may keep their well-being profile stable, such as avoiding school or procrastinating tasks that they feel they will not perform well on. The findings suggest that involvement in cyberbullying is an important factor to consider when addressing academic struggles, even when an adolescent has a stable demographic or psychological profile. These findings also highlight how adolescents may be balancing or navigating social and academic pressures simultaneously. It is possible that learners who are underachieving academically may engage in cyberbullying as a way to redirect from their own insecurities. These complex dynamics reinforce the importance of cyberbullying as a factor in adolescents' academic performance. The findings suggest that involvement in cyberbullying is an important factor to consider when addressing academic struggles, even when an adolescent has a stable demographic or psychological profile. These findings also highlight how adolescents may be balancing or navigating social and academic pressures simultaneously. Being a victim of direct cyberbullying may reduce academic performance through emotional distress, impaired concentration and reduced classroom participation. Similarly, the negative relationship between academics and being an indirect cyberbully may reflect a change in priorities during adolescents, where learners see social acceptance or peer approval as more important than achieving academically. Furthermore, it is also possible that learners who are underachieving academically may engage in cyberbullying as a way to redirect from their own insecurities. These complex dynamics reinforce the importance of cyberbullying as a factor in adolescents' academic performance.

In conclusion, the findings of this study highlight the complex nature of cyberbullying among adolescents in South Africa. Cyberbullying involvement was widespread and most commonly manifested through relational and emotionally driven behaviours such as rumour spreading, insults and the sharing of private information. While gender differences in overall involvement were small, patterns reflected broader trends in the literature, with females reporting more relational forms of cyberbullying and males slightly higher engagement in bullying behaviours. Differences across grade levels and social media platforms further suggest that developmental stage and platform affordances shape adolescents' online experiences. Importantly, cyberbullying involvement was associated with lower psychological well-being and poorer academic performance, underscoring the real-world

consequences of online interactions. Together, these findings emphasise the need for targeted prevention and intervention strategies that consider developmental factors, platform-specific dynamics and the broader social context in which adolescents navigate their online relationships. Future research would benefit greatly from the inclusion of qualitative analysis in order to further explore these trends and potential motivations behind them.

Limitations

This study is subject to several limitations that should be acknowledged and was considered when interpreting the findings. Firstly, this study made use of a cross-sectional survey design, where the data were collected at a single point in time. This approach does not allow causal inferences to be made between any of the study's key variables. The temporal order of the variables is unknown, and therefore, the directionality cannot be determined. The cross-sectional nature also introduces the risk of temporal bias, as responses at a single point in time may not accurately reflect long-term effects or patterns. Additionally, the survey data were entirely quantitative, consisting of fixed-response items. While this method facilitated comprehensive statistical analysis, it limited the depth of the insights and interpretations of the data. As no open-ended questions were included, there was also no opportunity to explore the motivation or context behind the reported experiences. The data used in this study were collected via self-report survey items, the reliability and validity of which are often limited as they require the participant to be highly self-aware. The approach also introduces potential biases, such as recall bias or social desirability bias. Adolescents may have misremembered past cyberbullying involvement or inaccurately reported the frequency of their involvement. Additionally, they may have underrepresented their involvement for fear of judgement or social stigma. Furthermore, the participants' mood, attention or understanding of the questions at the time of the survey may have influenced their responses. Another limitation of the study was that a portion of the data from one school, HS1, was unusable. HS1 was an all-boys school, which impacted the gender distribution and resulted in the usable sample consisting of more females than males. While the analysis controlled for this in gender-based comparisons, the skewed distribution may influence the generalisability of the findings. Some of the gender-related trends may have been masked as a result. In addition, the final sample for the study consisted of learners from only Quintile 5 schools, which represents the highest socioeconomic areas in South Africa. These schools are typically more digitally advanced and were therefore relevant for this study. However, this did limit the generalisability of the findings, as South Africa is a digitally divided and diverse country. Secondly, while the survey made use of validated scales to assess constructs such as cyberbullying involvement and well-being, these complex concepts were measured and collected via structured survey items with fixed-response options. While these measures increase consistency and enable statistical

analysis, they can only approximate the true experience lived by adolescents. For instance, while the EPOCH scale offers a robust method for well-being measurement, it may not capture the personal or cultural contexts that shape an adolescent's actual well-being. Therefore, these responses should be viewed as a general indicator of the constructs being measured.

Conclusion

This study explored the prevalence, forms and consequences of cyberbullying involvement among adolescents in South Africa. Particular attention was given to differences across demographics, social media use, and the relationship between cyberbullying, well-being, and academic performance. The findings revealed that cyberbullying involvement was highly prevalent among adolescents in the sample. The exploration of cyberbullying across demographics revealed some nuanced patterns of cyberbullying involvement that highlighted the complex nature of cyberbullying dynamics. Specific forms of cyberbullying were more commonly experienced and engaged in than others, particularly through visual and high-use platforms like TikTok and Instagram.

Notably, the study found that cyberbullying involvement was significantly associated with certain dimensions of adolescent well-being. Engaging as a direct cyberbully was a negative predictor of perseverance but a positive predictor of connectedness, while being a direct cybervictim was a negative predictor of happiness. These results suggest that cyberbullying can affect how adolescents persist through challenges, feel socially supported, and experience joy.

When examining academic performance, certain dimensions of well-being, namely perseverance and engagement, significantly predicted it. Furthermore, cyberbullying involvement added unique predictive value over and above demographics and well-being. Specifically, experiences as a victim of direct cyberbullying were significantly associated with lower academic performance.

These findings reinforce that cyberbullying involvement not only affects adolescents emotionally but can also disrupt motivation and academic focus. Online experiences, psychological aspects, and academic achievement are all interconnected and need to be understood together to create effective interventions.

Acknowledgements

This article is based on research originally conducted as part of Camryn L. Twaddle's master's thesis titled 'Trends of Adolescent Cyberbullying Behaviour and the Implications for Well-being and Academic Performance in South Africa', submitted to the Information Science Department, Stellenbosch University in 2025. The thesis is currently unpublished and not publicly available. The thesis was supervised by Daniel B. le Roux. The thesis was reworked, revised and adapted into a journal article for publication.

The author confirms that the content has not been previously published or disseminated and complies with ethical standards for original publication. We would like to acknowledge the management teams, educators and learners at the schools that participated in the study. Their assistance in the planning and execution of data collection activities was a key enabler of the study's execution.

Competing interests

The authors reported that they received funding from a National Research Foundation Grant (Grant Number: CSUR23041894319), which may be affected by the research reported in the enclosed publication. The author has disclosed those interests fully and has implemented an approved plan for managing any potential conflicts arising from their involvement. The terms of these funding arrangements have been reviewed and approved by the affiliated university in accordance with its policy on objectivity in research.

CRedit authorship contribution

Camryn L. Twaddle: Conceptualisation; Data curation; Formal analysis; Investigation; Methodology; Visualisation; Writing – original draft; and Writing – review & editing. Daniel le Roux: Conceptualisation; Data curation; Funding acquisition; Investigation; Methodology; Project administration; Resources; Supervision; and Writing – review & editing. All authors reviewed the article, contributed to the discussion of results, approved the final version for submission and publication and take responsibility for the integrity of its findings.

Funding information

This research was funded by a National Research Foundation Grant (Grant Number: CSUR23041894319).

Data availability

Because of agreements with the participating schools, the publication of raw data was not permitted. Derived data supporting the findings of this study are available from the corresponding author, Camryn L. Twaddle, upon reasonable request.

Disclaimer

The views and opinions expressed in this article are those of the authors and are the product of professional research. They do not necessarily reflect the official policy or position of any affiliated institution, funder, agency or that of the publisher. The authors are responsible for this article's results, findings and content.

References

Abaido, G.M., 2020, 'Cyberbullying on social media platforms among university students in the United Arab Emirates', *International Journal of Adolescence and Youth* 25(1), 407–420. <https://doi.org/10.1080/02673843.2019.1669059>

- Agustiniingsih, N., Yusuf, A., Ahsan, A. & Fanani, Q., 2024, 'The impact of bullying and cyberbullying on mental health: A systematic review', *International Journal of Public Health Science* 13(2), 513–520. <https://doi.org/10.11591/ijphs.v13i2.23683>
- Aizenkot, D., 2018, 'Cyberbullying in WhatsApp classroom groups among children and adolescents: Exposure and victimization', *The Eurasia Proceedings of Educational & Social Sciences* 10, 1–10.
- Alhashmi, A.A., Kumar, K.M.A., Eid, A.A., Mansouri, W.A., Othmen, S., Miled, A.B. et al., 2023, 'Taxonomy of cyberbullying: An exploration of the digital menace', *Journal of Intelligent Systems and Applied Data Science* 1(2), 1–10.
- Alvermann, D.E., Marshall, J.D., McLean, C.A., Huddleston, A.P., Joaquin, J. & Bishop, J., 2012, 'Adolescents' web-based literacies, identity construction, and skill development', *Literacy Research and Instruction* 51(3), 179–195. <https://doi.org/10.1080/19388071.2010.523135>
- Barlett, C.P., DeWitt, C.C., Maronna, B. & Johnson, K., 2018a, 'Social media use as a tool to facilitate or reduce cyberbullying perpetration: A review focusing on anonymous and nonanonymous social media platforms', *Violence and Gender* 5(3), 147–152. <https://doi.org/10.1089/vio.2017.0057>
- Barlett, C.P., Gentile, D.A., Chng, G., Li, D. & Chamberlin, K., 2018b, 'Social media use and cyberbullying perpetration: A longitudinal analysis', *Violence and Gender* 5(3), 191–197. <https://doi.org/10.1089/vio.2017.0047>
- Bayer, J.B., Triêu, P. & Ellison, N.B., 2020, 'Social media elements, ecologies, and effects', *Annual Review of Psychology* 71, 471–497. <https://doi.org/10.1146/annurev-psych-010419-050944>
- Beran, T. & Li, Q., 2007, 'The relationship between cyberbullying and school bullying', *The Journal of Student Wellbeing* 1(2), 15–33. <https://doi.org/10.21913/JSW.v1i2.172>
- Beran, T., Mishna, F., McInroy, L.B. & Shariff, S., 2015, 'Children's experiences of cyberbullying: A Canadian national study', *Children & Schools* 37(4), 207–214. <https://doi.org/10.1093/cs/cdv024>
- Bergmann, M.C. & Baier, D., 2018, 'Prevalence and correlates of cyberbullying perpetration. Findings from a German representative student survey', *International Journal of Environmental Research and Public Health* 15(2), 274. <https://doi.org/10.3390/ijerph15020274>
- Bharara, G., Duncan, S., Jarden, A. & Hinckson, E., 2019, 'A prototype analysis of New Zealand adolescents' conceptualizations of wellbeing', *International Journal of Wellbeing* 9(4), 1–25. <https://doi.org/10.5502/ijw.v9i4.975>
- Branje, S., De Moor, E.L., Spitzer, J. & Becht, A.I., 2021, 'Dynamics of identity development in adolescence: A decade in review', *Journal of Research on Adolescence* 31(4), 908–927. <https://doi.org/10.1111/jora.12678>
- Briggs, S.R. & Cheek, J.M., 1986, 'The role of factor analysis in the development and evaluation of personality scales', *Journal of Personality* 54(1), 106–148. <https://doi.org/10.1111/j.1467-6494.1986.tb00391.x>
- Brighi, A., Mameli, C., Menin, D., Guarini, A., Carpani, F. & Slee, P.T., 2019, 'Coping with cybervictimization: The role of direct confrontation and resilience on adolescent wellbeing', *International Journal of Environmental Research and Public Health* 16(24), 4893. <https://doi.org/10.3390/ijerph16244893>
- Brochado, S., Soares, S. & Fraga, S., 2017, 'A scoping review on studies of cyberbullying prevalence among adolescents', *Trauma, Violence, & Abuse* 18(5), 523–531. <https://doi.org/10.1177/1524838016641668>
- Charoenwanit, S., 2019, 'The relationship of cyber-bullying and academic achievement, general health, and depression in adolescents in Thailand', *Walailak Journal of Science and Technology* 16(4), 231–241. <https://doi.org/10.48048/wjst.2019.4059>
- Charteris, J., Gregory, S., Masters, Y., Maple, M. & Kennedy, A., 2016, 'Snapchat at school – "Now you see it ...": Networked affect – Cyber bullying, harassment and sexting', in S. Barker, S. Dawson, A. Pardo & C. Colvin (eds.), *ASCLITE 2016 Conference Proceedings: Show Me the Learning*. Presented at the ASCLITE Conference, Adelaide, November 27–30, 2016, pp. 111–115, ASCLITE Publications.
- Creswell, J.W. & Creswell, J.D., 2018, *Research design: Qualitative, quantitative, and mixed methods approaches*, 5th edn., SAGE Publications, Los Angeles, CA.
- Dredge, R., Gleeson, J. & De la Piedad Garcia, X., 2014, 'Presentation on Facebook and risk of cyberbullying victimisation', *Computers in Human Behavior* 40, 16–22. <https://doi.org/10.1016/j.chb.2014.07.035>
- Els, A., 2024, 'The prevalence and nature of bullying (victimisation and perpetration) in high school learners', Master's thesis, University of Johannesburg, Johannesburg.
- Fahy, A.E., Stansfeld, S.A., Smuk, M., Smith, N.R., Cummins, S. & Clark, C., 2016, 'Longitudinal associations between cyberbullying involvement and adolescent mental health', *Journal of Adolescent Health* 59(5), 502–509. <https://doi.org/10.1016/j.jadohealth.2016.06.006>
- Franks, T.S., 2015, 'The experiences of adolescents regarding cyberbullying', Master's mini-dissertation, University of Pretoria, Pretoria.
- Gohal, G., Alqassim, A., Eltyeb, E., Rayyani, A., Hakami, B., Al Faqih, A. et al., 2023, 'Prevalence and related risks of cyberbullying and its effects on adolescent', *BMC Psychiatry* 23, 39. <https://doi.org/10.1186/s12888-023-04542-0>
- Güllü, H., Karahan, E. & Akçay, A.O., 2023, 'A comprehensive investigation of cyberbullying and cyber victimization among secondary school students', *Education and Information Technologies* 28(10), 12633–12650. <https://doi.org/10.1007/s10639-023-11687-8>
- Hinduja, S. & Patchin, J.W., 2014, *Bullying beyond the schoolyard: Preventing and responding to cyberbullying*, 2nd edn., Corwin Press, Thousand Oaks, CA.
- Huang, G.C., Unger, J.B., Soto, D., Fujimoto, K., Pentz, M.A., Jordan-Marsh, M. et al., 2014, 'Peer influences: The impact of online and offline friendship networks on adolescent smoking and alcohol use', *Journal of Adolescent Health* 54, 508–514. <https://doi.org/10.1016/j.jadohealth.2013.07.001>
- Jaworska, N. & MacQueen, G., 2015, 'Adolescence as a unique developmental period', *Journal of Psychiatry and Neuroscience* 40(5), 291–293. <https://doi.org/10.1503/jpn.150268>

- John, A., Glendenning, A.C., Marchant, A., Montgomery, P., Stewart, A., Wood, S. et al., 2018, 'Self-harm, suicidal behaviours, and cyberbullying in children and young people: Systematic review', *Journal of Medical Internet Research* 20(4), e129. <https://doi.org/10.2196/jmir.9044>
- Kern, M.L., Benson, L., Steinberg, E.A. & Steinberg, L., 2016, 'The EPOCH measure of adolescent well-being', *Psychological Assessment* 28(5), 586–597. <https://doi.org/10.1037/pas0000201>
- Kowalski, R.M., Giumetti, G.W., Schroeder, A.N. & Lattanner, M.R., 2014, 'Bullying in the digital age: A critical review and meta-analysis of cyberbullying research among youth', *Psychological Bulletin* 140(4), 1073–1137. <https://doi.org/10.1037/a0035618>
- Kowalski, R.M. & Limber, S.P., 2013, 'Psychological, physical, and academic correlates of cyberbullying and traditional bullying', *Journal of Adolescent Health* 53, S13–S20. <https://doi.org/10.1016/j.jadohealth.2012.09.018>
- Kyrrestad, H., Kaiser, S. & Fossum, S., 2023, 'Frequency of bullying and cyberbullying victimization and associated factors among Norwegian adolescents', *International Journal of Bullying Prevention* 7, 102–112. <https://doi.org/10.1007/s42380-023-00182-w>
- Le Roux, D.B. & Feldman, J.A., 2024, *Smartphone use among South African adolescents: Key figures and statistics*, OSF, Stellenbosch University, Stellenbosch.
- Lee, C. & Shin, N., 2017, 'Prevalence of cyberbullying and predictors of cyberbullying perpetration among Korean adolescents', *Computers in Human Behavior* 68, 352–358. <https://doi.org/10.1016/j.chb.2016.11.047>
- Li, Q., 2006, 'Cyberbullying in schools: A research of gender differences', *School Psychology International* 27(2), 157–170. <https://doi.org/10.1177/0143034306064547>
- Ma, J., Su, L., Li, M., Sheng, J., Liu, F., Zhang, X. et al., 2024, 'Analysis of prevalence and related factors of cyberbullying-victimization among adolescents', *Children* 11(10), 1193. <https://doi.org/10.3390/children11101193>
- Moyo, B., 2017, 'Cyberbullying in high school: A study of Soweto high school learners' behaviours and beliefs about the phenomenon', Master's thesis, University of the Witwatersrand.
- Mursaleen, D.M., Jabeen, S. & Ramzan, A.M., 2025, 'Social media and adolescent mental health: The role of cyberbullying in depression and self-harm', *Al-Aasar* 2, 86–97.
- Needham, B.L., Crosnoe, R. & Muller, C., 2004, 'Academic failure in secondary school: The inter-related role of health problems and educational context', *Social Problems* 51(4), 569–586. <https://doi.org/10.1525/sp.2004.51.4.569>
- Nixon, C.L., 2014, 'Current perspectives: The impact of cyberbullying on adolescent health', *Adolescent Health, Medicine and Therapeutics* 5, 143–158. <https://doi.org/10.2147/AHMT.S36456>
- Olasanmi, O.O., Agbaje, Y.T. & Adeyemi, M.O., 2020, 'Prevalence and prevention strategies of cyberbullying among Nigerian students', *Open Journal of Applied Sciences* 10, 351–363. <https://doi.org/10.4236/ojapps.2020.106026>
- Olweus, D., 1993, *Bullying at school: What we know and what we can do*, John Wiley & Sons.
- Oosterwyk, G.W. & Parker, M.B., 2010, 'Investigating bullying via the mobile web in Cape Town schools', in A. Koch & P.A. van Brakel (eds.), *12th Annual Conference on World Wide Web Applications*, September 21–23, 2010, pp. 4–18, Cape Peninsula University of Technology, Durban.
- Patchin, J.W. & Hinduja, S., 2006, 'Bullies move beyond the schoolyard: A preliminary look at cyberbullying', *Youth Violence and Juvenile Justice* 4(2), 148–169. <https://doi.org/10.1177/1541204006286288>
- Payne, A., 2015, 'The nature and impact of cyberbullying among South African youth: An explanatory analysis', Master's thesis, University of Cape Town, Western Cape.
- Pintrich, P.R., 2000, 'An achievement goal theory perspective on issues in motivation terminology, theory, and research', *Contemporary Educational Psychology* 25(1), 92–104. <https://doi.org/10.1006/ceps.1999.1017>
- Ryan, R.M. & Deci, E.L., 2000, 'Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being', *American Psychologist* 55(1), 68–78. <https://doi.org/10.1037/0003-066X.55.1.68>
- Schaffner, S.H.C., 2010, 'An exploratory study on how factors such as gender, age groups and race affect incidence and type of bullying in a private high school in Pretoria', Master's dissertation, University of Pretoria.
- Scott, H., Biello, S.M. & Woods, H.C., 2019, 'Social media use and adolescent sleep patterns: Cross-sectional findings from the UK millennium cohort study', *BMJ Open* 9, e031161. <https://doi.org/10.1136/bmjopen-2019-031161>
- Shapiro, L.A.S. & Margolin, G., 2014, 'Growing up wired: Social networking sites and adolescent psychosocial development', *Clinical Child and Family Psychology Review* 17, 1–18. <https://doi.org/10.1007/s10567-013-0135-1>
- Smith, P.K., Mahdavi, J., Carvalho, M., Fisher, S., Russell, S. & Tippett, N., 2008, 'Cyberbullying: Its nature and impact in secondary school pupils', *Journal of Child Psychology and Psychiatry* 49(4), 376–385. <https://doi.org/10.1111/j.1469-7610.2007.01846.x>
- Sticca, F., Goetz, T., Bieg, M., Hall, N.C., Eberle, F. & Haag, L., 2017, 'Examining the accuracy of students' self-reported academic grades from a correlational and a discrepancy perspective: Evidence from a longitudinal study', *PLoS One* 12(11), e0187367. <https://doi.org/10.1371/journal.pone.0187367>
- Tokunaga, R.S., 2010, 'Following you home from school: A critical review and synthesis of research on cyberbullying victimization', *Computers in Human Behavior* 26(3), 277–287. <https://doi.org/10.1016/j.chb.2009.11.014>
- Topçu, C. & Erdur-Baker, Ö., 2018, 'RCBI-II: The second revision of the revised cyber bullying inventory', *Measurement and Evaluation in Counseling and Development* 51(1), 32–41. <https://doi.org/10.1080/07481756.2017.1395705>
- Tustin, D.H., Zulu, G.N. & Basson, A., 2014, 'Bullying among secondary school learners in South Africa with specific emphasis on cyber bullying', *Child Abuse Research in South Africa* 15(2), 13–25. <https://doi.org/10.10520/EJC161329>
- Twenge, J.M., Martin, G.N. & Spitzberg, B.H., 2019a, 'Trends in U.S. adolescents' media use, 1976–2016: The rise of digital media, the decline of TV, and the (near) demise of print', *Psychology of Popular Media Culture* 8(4), 329–345. <https://doi.org/10.1037/ppm0000203>
- Twenge, J.M., Spitzberg, B.H. & Campbell, W.K., 2019b, 'Less in-person social interaction with peers among U.S. adolescents in the 21st century and links to loneliness', *Journal of Social and Personal Relationships* 36(6), 1892–1913. <https://doi.org/10.1177/0265407519836170>
- Van der Merwe, P., 2017, 'Adolescent identities in the cyberworld', *Journal of Psychology in Africa* 27, 203–207. <https://doi.org/10.1080/14330237.2017.1303129>
- Vaterlaus, J.M. & Tarabochia, D., 2021, 'Adolescent smartphone acquisition: An exploratory qualitative case study with late adolescents and their parents', *Marriage & Family Review* 57(2), 143–164. <https://doi.org/10.1080/01494929.2020.1791302>
- Villanueva-Moya, L., Herrera, M.C., Sánchez-Hernández, M.D. & Expósito, F., 2023, 'Instagram comparison: Social comparison and envy as correlates of exposure to Instagram and cyberbullying perpetration', *Psychological Reports* 126(3), 1284–1304. <https://doi.org/10.1177/00332941211067390>
- Vo, D.V., Nguyen, P.N.T., Huynh, V.T. & Nguyen, G.M.T., 2026, 'Cyberbullying among high school students: Digital literacy as a protective factor?', *Social Psychology of Education* 29(1), 7. <https://doi.org/10.1007/s11218-026-10174-5>
- Ybarra, M.L. & Mitchell, K.J., 2004, 'Online aggressor/targets, aggressors, and targets: A comparison of associated youth characteristics', *Journal of Child Psychology and Psychiatry* 45(7), 1308–1316. <https://doi.org/10.1111/j.1469-7610.2004.00328.x>