

Cyberbullying on Social Media among Children with Special Needs: Prevalence, Patterns, and Risk Factors

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Received: February 22, 2026

Accepted: April 28, 2026

Online Published: April 30, 2026

doi:10.11114/smc.v14i3.8504

URL: <https://doi.org/10.11114/smc.v14i3.8504>

Abstract

Cyberbullying on social media is a growing risk for children with special needs. However, evidence regarding prevalence, patterns, and risk factors is still scarce. This study employed a quantitative cross, sectional survey to explore the occurrence of cyber victimization and cyber perpetration among students with special needs (N = 275) in inclusive and special schools. A 40, item questionnaire assessed social media exposure, victimization, perpetration, and psychosocial/contextual factors. Over the past three months, 64% reported at least one experience of cyber victimization, and 29.5% reported at least one behavior of cyber perpetration, with 20.7% being bully victims. The most frequent victimization patterns were the use of rude messages, name calling in group chats, and exclusion from online groups. Higher social media exposure and loneliness were linked to increased victimization, while higher self, esteem and parental guidance had protective effects. The results emphasize the provision of digital citizenship education that is inclusive of people with disabilities, the availability of accessible reporting routes, and the delivery of targeted psychosocial support as a means of both preventing harm and facilitating safe participation online among the diverse special needs communities.

Keywords: cyberbullying, social media, children with special needs, cyber victimization, cyber perpetration, risk factors, inclusive education

1. Introduction

Cyberbullying is a type of bullying that uses digital technologies to target individuals. It may take place in social media platforms, messaging apps, and online communities, where the harmful actions could be any of these: harassment, humiliation, threats, exclusion, impersonation, or non-consensual sharing of private content. In contrast to many offline incidents, cyberbullying can be ongoing (content stays online), scalable (rapid sharing), and hard to escape (happens beyond school hours), thus increasing the potential for prolonged distress and broader social impact (UNICEF, 2023; UNICEF, 2024; Syed et al., 2023; Safdar, 2023).

Cyberbullying is identified globally as one of the most significant issues of online safety for children, which necessitates the establishment of coordinated systems for prevention, reporting, and response that connect families, schools, community services, and digital platforms. The policy, oriented guidance suggests that the rapid expansion of digital technologies has gone beyond laws, services, and education in numerous areas, thus children are left vulnerable to risks like cyberbullying, privacy invasion, and other forms of online violence (UNICEF, 2023; UNICEF, 2024; Syed et al., 2023a). Recent meta, analytic findings summarized by Li et al. (2024) and research syntheses provide compelling evidence that bullying and cyberbullying are strongly linked to negative mental health outcomes in children and adolescents. Targeting children and adolescents, traditional bullying and cyberbullying lead to an increased risk of psychological distress and other mental health issues. Meta, analytic findings lend support to the idea that cyberbullying should not be seen as a trivial online disagreement but rather as a major risk factor that has the potential to exacerbate existing vulnerabilities and interfere with the individual's overall psychological well, being, peer relationships, and school engagement (Li et al., 2024).

Children with special needs such as those with autism spectrum disorder (ASD), attention-deficit/hyperactivity disorder (ADHD), learning disabilities, developmental delays, intellectual disability, and speech/language disorders may face heightened vulnerability to peer victimization, including cyberbullying (Ågren et al., 2020; Berchiatti et al., 2020; Bobos et al., 2020). Research focused on neurodevelopmental conditions suggests that challenges in social communication, emotion regulation, and interpreting social cues can intersect with stigma, making some children more likely to be targeted and less able to use effective coping or reporting strategies in online settings (Beckman et al., 2020; Wang & Susumu, 2024). Cyberbullying on social media may also take distinctive “patterns” because platforms encourage public interaction (comments, reposts, group chats), visibility (likes, shares), and rapid peer-to-peer escalation, which can intensify shame and social exclusion. For children with special needs, these platform features may amplify risk when peer norms are hostile, when privacy settings are poorly understood, or when disability-related differences become a basis for ridicule or targeting (UNICEF, 2024; UNESCO, 2021; Chicote-Beato et al., 2025; Koks-Leensen et al., 2024; Li et al., 2024).

Empirical studies also suggest that psychosocial mechanisms particularly loneliness and self-esteem may influence cyberbullying involvement among learners with disabilities. For example, evidence among students with learning disabilities indicates that the intensity of social media engagement can be linked with cyberbullying involvement and that emotional factors such as loneliness and self-esteem help explain vulnerability and participation dynamics, highlighting the need to study both exposure (how children use social media) and internal risk processes (Touloupis, 2024). To understand cyberbullying of children with special needs, one needs to carefully examine the surrounding environments of the children as well as their characteristics. Children with such needs are at a collective risk of getting bullied and being harassed, according to studies that have utilized population, based data, however, factors such as poverty can greatly determine who is going to be victimized (Iyanda, 2021; Borgström, 2023; Caton & Landman, 2022; Cho, 2021; Lin et al., 2023).

While these findings are being substantiated, a collection of studies is pointing to research gaps and inconsistencies that need to be dealt with in order to accurately determine the prevalence of cyberbullying among children with disabilities and thus enable fair and effective measures of prevention to be taken by the parties involved. Among the research cited, the review by Beckman et al. (2020) and Jackson et al. (2025) highlights that varying definitions, tools, and outcomes contribute to this problem and thus it is a source of difficulty in finding the exact prevalence and social, media, specific risk factors and in turn creating challenges for teachers and decision makers in the field of education (Beckman et al., 2020; Jackson et al., 2025).

The current research titled "Cyberbullying on Social Media Among Children with Special Needs: Prevalence, Patterns, and Risk Factors, " intends to achieve the following: firstly, to quantify the prevalence of social media, related cyberbullying in the special needs community; secondly, to recognize the types and patterns through which such bullying takes place on social platforms; and, thirdly, to find out the individual and contextual risk factors that lead to the experiences of victimization and perpetration. The emphasis on social media in this research is to generate the study findings that are implementable by schools, families, and the other decision makers who are responsible for the provision of safety and inclusion in digital environments (Jackson et al., 2025; UNICEF, 2024; Lorenzo-Seva & Ferrando, 2024; Triantafyllopoulou et al., 2022).

Children's engagement in social media is more and more linked with peer belonging, identity development, entertainment, and learning, related interaction, thus it creates connections opportunities but simultaneously exposes children to digital harms such as cyberbullying. Worldwide child, protection guidelines emphasize that online risks are increasing with access expansions and that prevention would need education, services, and stronger safeguards to guarantee safe and positive online experiences (UNICEF, 2023; UNICEF, 2024). Children with special needs may rely on online spaces for social participation and community, but they may also encounter disability-related stigma, exclusion, or targeted harassment. International education-focused commentary has highlighted that learners with disabilities are frequently as likely or more likely than peers without disabilities to experience bullying and violence, reinforcing the importance of disability-inclusive prevention and protection strategies (UNESCO, 2021).

Recent research indicates that special needs groups suffering from cyberbullying are not a homogeneous group, but rather the prevalence and patterns of such incidents may vary across different categories of disabilities and different contexts. A systematic review of evidence among neurodevelopmental disorders reveals a significant involvement in cyberbullying (victimization and perpetration), but also points to the variability of studies, which indicates a need for clearer, population, relevant estimates and more consistent measurement approaches (Beckman et al., 2020; Khan et al., 2018; Safdar, 2021). Moreover, psychosocial pathways play a key role in explaining why some children get involved in cyberbullying and how they experience harm. Various researches on students with learning disabilities shows that the intensity of social media engagement and emotional variables such as loneliness and self, esteem being significantly associated with cyberbullying involvement, thus confirming the necessity of integrated models that link digital behavior patterns with social, emotional risk processes (Touloupis, 2024).

Finally, policy frameworks increasingly emphasize that protecting children in digital environments requires multi-stakeholder responses, including schools and education systems, families, child protection services, and technology companies. Recent UNICEF policy briefs stress government and system-level responsibilities for preventing online violence and exploitation and for strengthening child protection in digital contexts, making research evidence especially important for guiding implementation (UNICEF, 2024). Although cyberbullying has been widely studied in general adolescent populations, research focused on children with special needs is comparatively limited and fragmented, particularly when the outcome is defined as cyberbullying occurring on social media platforms rather than broad “online victimization.” Reviews of neurodevelopmental disorders highlight inconsistencies in how cyberbullying is defined and measured, which reduces comparability across studies and makes it difficult to draw strong conclusions about prevalence and patterns for specific disability groups (Beckman et al., 2020; Jackson et al., 2025).

Many studies do not disaggregate findings by disability category or do not examine platform-specific features (e.g., public commenting, reposting, group chats) that shape unique patterns of social-media cyberbullying. While evidence from learning disability samples demonstrates the value of linking platform use intensity with cyberbullying involvement and psychosocial factors, comparable social-media-focused research remains scarce across other special needs categories, limiting the generalizability of prevention guidance (Touloupis, 2024). There is also an evidence gap regarding multi-level risk factor pathways tailored to children with special needs, including how individual vulnerabilities (e.g., social-communication challenges, emotional/behavioral difficulties), peer dynamics, inclusion climate, and socioeconomic context interact to predict victimization and perpetration. Population-based analyses show elevated bullying victimization among children with developmental/behavioral disorders and indicate that contextual factors contribute to risk, but cyberbullying research often under-examines these interacting influences in social media contexts (Iyanda, 2021; Wang & Susumu, 2024).

Cyberbullying on social media is a persistent form of peer victimization associated with harmful mental health outcomes among children and adolescents, and it constitutes a significant child-protection and educational equity concern. Because social media content can spread quickly and remain visible over time, cyberbullying may produce prolonged distress and social consequences that extend beyond school settings (Li et al., 2024; UNICEF, 2024). Children with special needs may face heightened exposure and impact due to stigma-based targeting, social-communication differences, and reduced access to effective reporting and coping supports, yet disability-sensitive evidence on social-media cyberbullying remains insufficient. The lack of consistent, platform-specific, and special-needs-focused evidence limits schools’ and policymakers’ ability to design inclusive prevention programs, strengthen reporting pathways, and provide targeted psychosocial supports to reduce risk and harm (Beckman et al., 2020; Jackson et al., 2025).

1. To estimate the prevalence of cyberbullying victimization and perpetration on social media among children with special needs.
2. To identify common patterns/forms of social-media cyberbullying experienced by children with special needs (e.g., harassment, exclusion, impersonation, image-based humiliation).
3. To examine individual risk factors (e.g., loneliness, self-esteem, social difficulties, emotional/behavioral challenges) associated with cyberbullying involvement.
4. To examine contextual risk factors (e.g., peer support, school inclusion climate, parental monitoring/support, socioeconomic factors) associated with cyberbullying involvement.
5. To determine which factors best predict cyberbullying victimization and/or perpetration among children with special needs in social media environments.
6. To propose evidence-informed recommendations for schools, families, and stakeholders to reduce cyberbullying risk and strengthen protective practices.

This study provide disability, sensitive evidence on social media cyberbullying prevalence and patterns, enabling schools and education systems to develop inclusive safeguarding policies and digital citizenship programs that mirror the lived risks of children with special needs. Such evidence is crucial as international dialogues point out that learners with disabilities are at an increased risk of bullying and need protection strategies that are equity, focused and contextually responsive (UNESCO, 2021). Through the identification of individual and contextual risk factors, the study will be instrumental in the direction of precise interventions, such as social, emotional supports in cases where loneliness and self, esteem are relevant, and system, level enhancements like clearer reporting processes and more responsive school climates. Previous research has shown that psychosocial mechanisms have the potential to significantly influence cyberbullying involvement among learners with disabilities, hence the importance of linking prevention to well, being supports (Touloupis, 2024).

On the policy and stakeholder level, the findings have the potential to guide the implementation of comprehensive child

protection measures that ensure safe digital environments for all children by providing a clear understanding of the vulnerabilities and needs of children with special needs. According to UNICEF policy guidance, the prevention of online violence and exploitation necessitates the integration of efforts and the provision of strong protections across systems. In this respect, research evidence can play a pivotal role in the more efficient implementation and allocation of resources for the vulnerable groups (UNICEF, 2024).

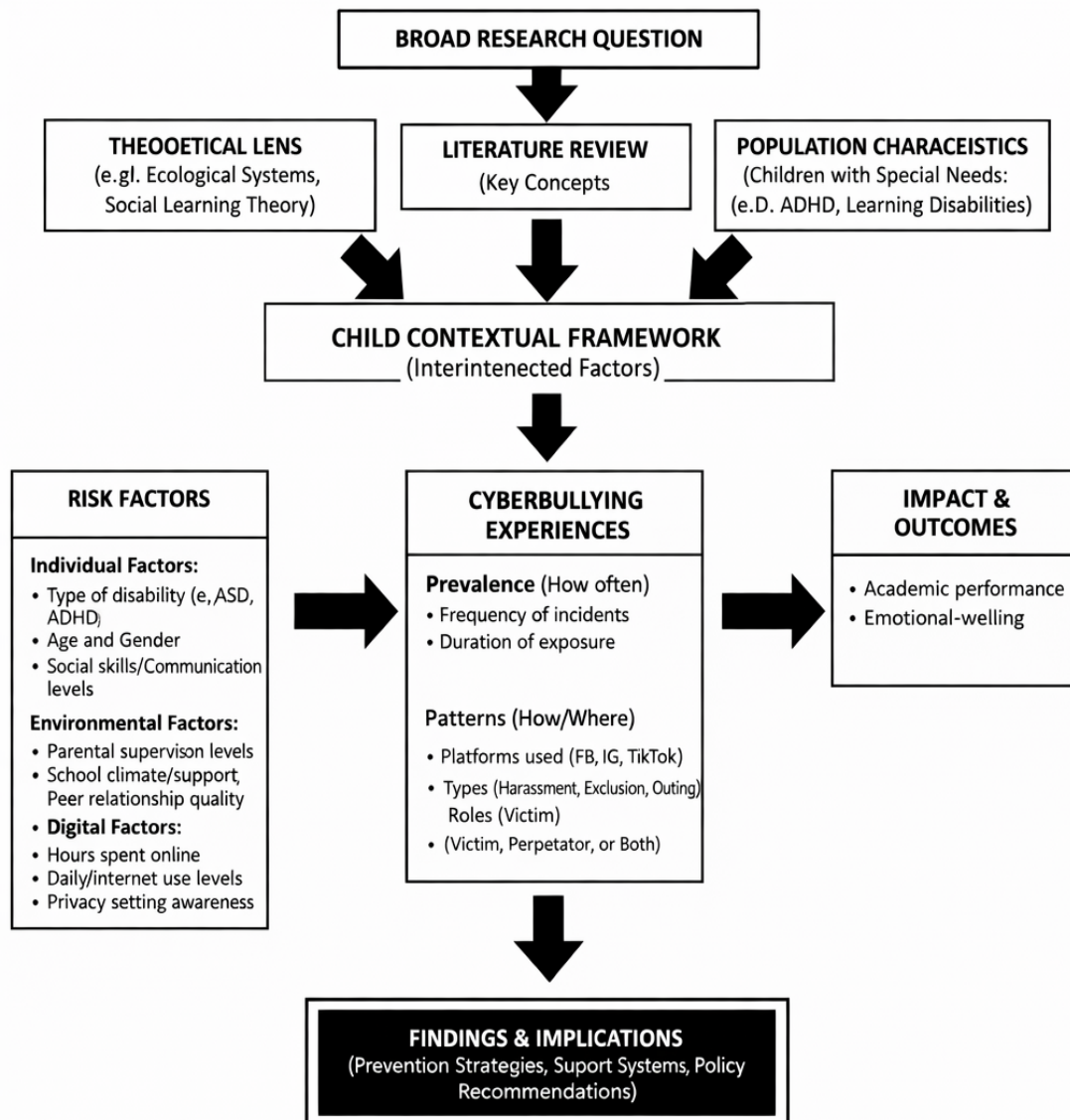


Figure 1. Conceptual Framework

This conceptual map depicts in *Figure 1* the dynamic of cyberbullying experiences of children with special needs considering different interconnected factors that influence these experiences and the resulting effects or outcomes.

At the top of the schematic, the Broad Research Question appears which is the main guide of the study's overall direction. This question is the result of the interaction of three components: theoretical lenses, literature review, and population characteristics. The theoretical lenses taken from, for example, the Ecological Systems Theory and the Social Learning Theory, offer a conceptual ground that helps explain how personal behavior is shaped by social, environmental and digital influences. The literature review brings the main ideas and supporting evidence to the concept of cyberbullying, whereas the population characteristics are about the children with special needs, e.g., children with ADHD and learning disabilities.

All these factors are integrated into the Child Contextual Framework that highlights that cyberbullying is not a one, off event but it is the outcome of the complex interplay of various factors around the child.

Within this framework, Risk Factors are divided into three domains:

1. Individual factors are personal attributes like type of disability, age, gender, social or communication skills, etc.;
2. Environmental factors are aspects of the person's surroundings such as the level of parental supervision, the school climate, peer relationships, and availability of support systems;
3. Digital factors could be traits related to internet habits like time spent online, internet use patterns, digital literacy, and knowledge of privacy settings.

These risk factors bring about Cyberbullying Experiences, which are at the center of the framework. Cyberbullying experiences are analyzed in terms of:

- a) Prevalence refers to how frequently cyberbullying occurs and how long the victim has been exposed to it;
- b) Patterns provide information about the location and manner of cyberbullying (e.g., social media platforms), the types of cyberbullying (e.g., harassment, exclusion, outing), and the roles children take up (victim, perpetrator, or both).

The framework proceeds to illustrate how these experiences with cyberbullying result in Impact and Outcomes, especially focusing on children's academic performance and emotional well-being. Last but not least, the model goes downward to Findings and Implications, underlining how the study's findings can be used to develop better prevention strategies, support systems, and policy recommendations targeting the reduction of cyberbullying and the enhancement of the lives of children with special needs.

1.1 Synthesis: What the Current Literature Suggests about Prevalence, Patterns, and Risk Factors

Taken together, the literature indicates that cyberbullying on social media is a meaningful risk for children with special needs, with involvement shaped by intersecting factors: social-communication differences, emotional vulnerabilities, peer exclusion, digital literacy gaps, and systemic barriers in families and schools. Evidence supports the view that cyberbullying is often embedded in broader social marginalisation and that risk is heightened when students lack accessible safety education and trustworthy support pathways. The strongest disability-specific evidence currently exists for neurodevelopmental disorders broadly and for ASD-linked pathways, while work on intellectual disabilities emphasises lived experience, digital inequality, and the importance of balancing protection with autonomy. Intervention research is growing but remains limited; future studies are encouraged to test accessible, multi-level programmes and to evaluate outcomes beyond “incident reduction,” including help-seeking, safety self-efficacy, and inclusive peer culture (Jackson et al., 2025).

2. Method

2.1 Research Design

This study used a quantitative, cross-sectional, descriptive–correlational design to estimate the prevalence of cyberbullying among children with special needs and to examine patterns (e.g., platforms, forms, frequency) and risk factors (e.g., online exposure, parental mediation, peer relations, school context) using survey data collected at one point in time.

2.2 Population of the Study

The population included children with special needs (e.g., hearing impairment, autism spectrum disorder, learning disabilities, mild intellectual disability, physical disabilities) who were enrolled in inclusive or special education settings and who used social media or internet-enabled communication tools. The target age range was 10–18 years.

2.3 Sample of the Study

A multistage stratified sampling strategy was applied to ensure representation across disability type, school type (inclusive vs. special), and age/grade level in the Lahore division. Schools were selected first as clusters, and eligible students were sampled within schools using proportionate stratification. The final sample consisted of 275 participants.

2.4 Instrument Development

A structured questionnaire was developed by adapting items from validated cyberbullying assessment tools. The instrument covered cybervictimization, cyber perpetration, common forms (harassment, exclusion, impersonation, rumour spreading, image-based abuse), platforms used, and frequency during the last three months. The questionnaire was formatted in accessible language with supportive examples, and assistance (e.g., sign-supported administration) was provided where needed.

2.5 Validity of the Research Instrument

Content validity was established through expert review (special educators, psychologists, and digital safety professionals).

Items were evaluated for relevance and clarity, and revisions were made based on expert feedback. Construct validity was examined through pilot testing and factor-analytic checks where appropriate.

2.6 Reliability of the Research Instrument

Internal consistency reliability was assessed using Cronbach's alpha for each subscale (exposure, victimization, perpetration, and risk/protection). Reliability coefficients were found to be acceptable to high, supporting the use of the instrument for analysis.

2.7 Data Collection Procedure

After obtaining institutional permissions and ethical approval, data were collected in scheduled school sessions. Parental/guardian consent and student assent were obtained. Questionnaires were administered in small groups or individually depending on participant needs. Confidentiality and voluntary participation were ensured, and students were allowed to skip any question.

2.8 Data Analysis Procedure

Data was analyzed using statistical software (SPSS). Descriptive statistics (frequencies, percentages, means, and standard deviations) were calculated for demographic and study variables. Independent-samples t-tests and one-way ANOVA were performed to examine group differences across demographic variables. Reliability analysis was conducted for internal consistency, and correlation/regression analyses were used to identify associations and predictors of cybervictimization and cyber perpetration.

3. Results

Table 1. Demographic Characteristics of Participants (N = 275)

Variable	Category	n	%
Gender	Male	150	54.5
	Female	125	45.5
Age group (years)	10–12	84	30.5
	13–15	130	47.3
	16–18	61	22.2
Grade level	Grade 5–6	73	26.5
	Grade 7–8	99	36.0
	Grade 9–10	70	25.5
	Grade 11–12	33	12.0
School type	Inclusive	178	64.7
	Special	97	35.3
Primary disability category	Hearing impairment	77	28.0
	Autism spectrum disorder (ASD)	62	22.5
	Specific learning disability	84	30.5
	Mild intellectual disability	52	18.9
Daily social media time	< 1 hour	40	14.5
	1–2 hours	84	30.5
	2–4 hours	101	36.7
	> 4 hours	50	18.2
Most-used platform	WhatsApp	106	38.5
	TikTok	59	21.5
	Instagram	48	17.5
	Facebook	26	9.5
	YouTube	22	8.0
	Gaming chat	14	5.1

Table 1 shows the demographics information of the respondents by including their gender, age group, grade level, school type, primary disability, routine of social media use and most used platform among the respondents.

Table 2. Section 1: Social Media Use & Exposure (Q1–Q8)

Item	Item (short)	Never	Once/twice	Monthly	Weekly	Daily/almost daily
Q1	Use social media apps	0 (0.0%)	0 (0.0%)	62 (22.5%)	136 (49.5%)	77 (28.0%)
Q2	Spend >2 hours/day on social media	41 (14.9%)	124 (45.1%)	59 (21.5%)	39 (14.2%)	12 (4.4%)
Q3	Chat in group chats/messaging apps	79 (28.7%)	113 (41.1%)	44 (16.0%)	23 (8.4%)	16 (5.8%)
Q4	Accept requests from unknown people	163 (59.3%)	65 (23.6%)	28 (10.2%)	14 (5.1%)	5 (1.8%)
Q5	Post photos/videos/updates	112 (40.7%)	96 (34.9%)	42 (15.3%)	21 (7.6%)	4 (1.5%)
Q6	Receive messages from strangers	137 (49.8%)	78 (28.4%)	35 (12.7%)	16 (5.8%)	9 (3.3%)
Q7	Play online games with chat	171 (62.2%)	58 (21.1%)	24 (8.7%)	14 (5.1%)	8 (2.9%)
Q8	Added to groups without choice	211 (76.7%)	41 (14.9%)	13 (4.7%)	7 (2.5%)	3 (1.1%)

Table 2 shows that Overall engagement is moderate-to-high, with most participants reporting routine platform use (weekly = 49.5%; daily/almost daily = 28.0%) (Q1). Potentially risky behaviors show low prevalence, as a majority report non-engagement in accepting unknown requests (never = 59.3%) and receiving unsolicited messages (never = 49.8%) (Q4, Q6). Other exposure indicators are largely infrequent, notably non-consensual group additions (never = 76.7%) and chat-enabled online gaming (never = 62.2%) (Q8, Q7).

Table 3. Section 2: Cyberbullying Victimization (Q9–Q20)

Item	Item (short)	Never	Once/twice	Monthly	Weekly	Daily/almost daily
Q9	Received mean/rude messages	132 (48.0%)	83 (30.2%)	33 (12.0%)	20 (7.3%)	7 (2.5%)
Q10	Mocked for disability/needs	208 (75.6%)	42 (15.3%)	15 (5.5%)	9 (3.3%)	1 (0.4%)
Q11	Called bad names in group chat	149 (54.2%)	74 (26.9%)	26 (9.5%)	19 (6.9%)	7 (2.5%)
Q12	Rumours/false stories spread	162 (58.9%)	61 (22.2%)	25 (9.1%)	22 (8.0%)	5 (1.8%)
Q13	Mean comment on post/story	181 (65.8%)	55 (20.0%)	19 (6.9%)	14 (5.1%)	6 (2.2%)
Q14	Photo/video shared to embarrass	200 (72.7%)	43 (15.6%)	15 (5.5%)	12 (4.4%)	5 (1.8%)
Q15	Screenshot shared to shame	198 (72.0%)	45 (16.4%)	14 (5.1%)	12 (4.4%)	6 (2.2%)
Q16	Threatened online	222 (80.7%)	29 (10.5%)	11 (4.0%)	10 (3.6%)	3 (1.1%)
Q17	Impersonation/fake identity	231 (84.0%)	26 (9.5%)	9 (3.3%)	7 (2.5%)	2 (0.7%)
Q18	Excluded from groups/chats	156 (56.7%)	61 (22.2%)	26 (9.5%)	25 (9.1%)	7 (2.5%)
Q19	Bothered repeatedly after stop request	176 (64.0%)	57 (20.7%)	20 (7.3%)	16 (5.8%)	6 (2.2%)
Q20	Felt scared/upset due to online events	156 (56.7%)	61 (22.2%)	25 (9.1%)	24 (8.7%)	9 (3.3%)

Table 3 mentions that Overall, cyberbullying victimization shows low periodicity, with “Never” responses dominating across most indicators (e.g., threats 80.7% never; impersonation 84.0% never; disability-related mocking 75.6% never). The highest prevalence is for low-intensity verbal harassment, where a substantial minority report exposure at least once (mean/rude messages: 52.0% ≥ once; name-calling in group chat: 45.8% ≥ once). High-severity/repetitive patterns are infrequent, with weekly/daily rates generally ≤ 9% weekly and ≤ 3.3% daily across items (including exclusion and emotional distress).

Table 4. Section 3: Cyberbullying Perpetration (Q21–Q30)

Item	Item (short)	Never	Once/twice	Monthly	Weekly	Daily/almost daily
Q21	Sent mean/rude messages	194 (70.5%)	55 (20.0%)	15 (5.5%)	8 (2.9%)	3 (1.1%)
Q22	Mocked someone's disability/weakness	253 (92.0%)	14 (5.1%)	6 (2.2%)	2 (0.7%)	0 (0.0%)
Q23	Called someone bad names in group chat	220 (80.0%)	34 (12.4%)	13 (4.7%)	6 (2.2%)	2 (0.7%)
Q24	Spread rumours about someone	246 (89.5%)	17 (6.2%)	8 (2.9%)	3 (1.1%)	1 (0.4%)
Q25	Posted mean comment about someone	231 (84.0%)	27 (9.8%)	10 (3.6%)	6 (2.2%)	1 (0.4%)
Q26	Shared photo/video to embarrass	258 (93.8%)	11 (4.0%)	3 (1.1%)	2 (0.7%)	1 (0.4%)
Q27	Shared screenshots to mock	252 (91.6%)	14 (5.1%)	5 (1.8%)	3 (1.1%)	1 (0.4%)
Q28	Excluded someone from group/chat	245 (89.1%)	18 (6.5%)	7 (2.5%)	4 (1.5%)	1 (0.4%)
Q29	Impersonated someone online	266 (96.7%)	6 (2.2%)	2 (0.7%)	1 (0.4%)	0 (0.0%)
Q30	Messaged someone after they wanted stop	250 (90.9%)	15 (5.5%)	5 (1.8%)	4 (1.5%)	1 (0.4%)

Table 4 depicts that Cyberbullying perpetration demonstrates a low base-rate, with the majority reporting non-engagement (“Never” = 70.5%–96.7%) across behaviors (Q21–Q30). The comparatively higher but still limited episodic involvement appears in sending mean/rude messages (29.5% ≥ once) and name-calling in group chats (20.0% ≥ once), while disability-based mocking remains rare (8.0% ≥ once) (Q21–Q23). More severe acts (e.g., impersonation, sharing embarrassing media/screenshots, harassment after stop requests) show minimal recurrence, with weekly/daily frequencies generally ≤ 2.9% and ≤ 1.1%, respectively (Q24–Q30).

Table 5. Section 4: Risk Factors, Protection, Reporting & Coping (Q31–Q40)

Item Item (short)	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
Q31 Feel lonely even online	19 (6.9%)	54 (19.6%)	93 (33.8%)	82 (29.8%)	27 (9.8%)
Q32 Feel confident (self-esteem)	11 (4.0%)	49 (17.8%)	121 (44.0%)	77 (28.0%)	17 (6.2%)
Q33 Respond impulsively online	13 (4.7%)	70 (25.5%)	100 (36.4%)	67 (24.4%)	25 (9.1%)
Q34 Hard to understand jokes/sarcasm online	18 (6.5%)	74 (26.9%)	111 (40.4%)	59 (21.5%)	13 (4.7%)
Q35 Close supportive friend at school	8 (2.9%)	42 (15.3%)	115 (41.8%)	79 (28.7%)	31 (11.3%)
Q36 Parents guide safe use	9 (3.3%)	45 (16.4%)	99 (36.0%)	86 (31.3%)	36 (13.1%)
Q37 School teaches respectful online behavior	12 (4.4%)	57 (20.7%)	111 (40.4%)	75 (27.3%)	20 (7.3%)
Q38 Know how to block/report/privacy settings	14 (5.1%)	59 (21.5%)	106 (38.5%)	77 (28.0%)	19 (6.9%)
Q39 Feel safe telling teacher/parent	13 (4.7%)	49 (17.8%)	102 (37.1%)	84 (30.5%)	27 (9.8%)
Q40 Worry reporting makes it worse	16 (5.8%)	52 (18.9%)	90 (32.7%)	83 (30.2%)	34 (12.4%)

Table 5 represents that responses show a neutral central tendency across items (Neutral $\approx$ 32.7%–44.0%), indicating substantial attitudinal ambiguity regarding risk/protection and reporting constructs (Q31–Q40). Protective indicators are moderate: parental guidance (Agree/Strongly agree = 44.4%) and having a supportive friend (40.0%) are relatively endorsed, while school-based instruction is weaker (Agree/Strongly agree = 34.6%) (Q35–Q37). Key risk/reporting signals include online loneliness (Agree/Strongly agree = 39.6%) and a notable reporting barrier concern that reporting worsens outcomes (Agree/Strongly agree = 42.6%) despite only 34.9% reporting confidence in blocking/reporting/privacy settings (Q31, Q40, Q38).

Table 6. Section-Wise Descriptive Statistics (N = 275)

Section	k (items)	N	Mean	SD	Min	Max	Skewness	Kurtosis (excess)
Social Media Exposure (Q1–Q8)	8	275	1.15	0.37	0.38	2.38	0.29	–0.29
Cyber Victimization (Q9–Q20)	12	275	0.58	0.49	0.00	1.67	0.07	–1.35
Cyber Perpetration (Q21–Q30)	10	275	0.16	0.28	0.00	1.30	1.71	2.00
Risk/Protection (Q31–Q40)	10	275	3.20	0.28	2.50	4.20	0.19	.30

Table 6 reveals that section-wise descriptives indicate low-to-moderate mean levels of exposure ($M = 1.15$, $SD = 0.37$) and victimization ($M = 0.58$, $SD = 0.49$), while perpetration is very low ($M = 0.16$, $SD = 0.28$); in contrast, risk/protection responses cluster at a moderately positive endorsement level ($M = 3.20$, $SD = 0.28$). Distributional diagnostics show approximate symmetry for exposure, victimization, and risk/protection (skewness $\approx$ 0.07–0.29) with platykurtic profiles for exposure and victimization (excess kurtosis = –0.29 to –1.35), suggesting relatively flatter-than-normal response distributions. Cyber perpetration exhibits marked positive skewness (skewness = 1.71) and leptokurtosis (excess kurtosis = 2.00), consistent with a floor effect/zero-inflated pattern where most respondents report minimal perpetration and a small minority report higher frequency.

Table 7. Prevalence of Cyberbullying Involvement (Last 3 Months) (N = 275)

Involvement category	n	%
Cybervictimization (≥ 1 incident)	176	64.0
Cyber perpetration (≥ 1 incident)	81	29.5
Bully–victim (both victim & perpetrator)	57	20.7
Victim only	119	43.3
Perpetrator only	24	8.7
Uninvolved	75	27.3

Table 7 indicates that cyberbullying involvement in the last three months is high, with 64.0% reporting ≥ 1 victimization incident, compared with 29.5% reporting ≥ 1 perpetration incident. Role overlap is notable: 20.7% are bully victims, while 43.3% are victims only and 8.7% are perpetrators only, indicating victimization is the dominant involvement pattern. Only 27.3% are uninvolved, suggesting that cyberbullying exposure is widespread in this sample.

Table 8. Most Common Victimization Forms on Social Media (N = 275)

Victimization form	n ($\geq$ once)	%
Mean/rude messages	143	52.0
Name-calling in group chat	125	45.5
Exclusion from groups/chats	114	41.5
Rumours/false stories	104	37.8
Embarrassing photo/video shared	75	27.3
Threatened online	53	19.3
Impersonation/fake identity	44	16.0

Table 8 appears that the most prevalent victimization modalities are direct verbal/relational aggression, led by mean/rude messages (52.0%) and name-calling in group chats (45.5%), followed by social exclusion (41.5%). A substantial proportion also reported reputational harm via rumours/false stories (37.8%), whereas content-based humiliation (embarrassing photo/video sharing) is less common but still notable (27.3%). More severe identity/security-related incidents occur at lower base rates, including online threats (19.3%) and impersonation/fake identity (16.0%), indicating a gradient from frequent low-intensity aggression to less frequent high-severity forms.

Table 9. Reliability of Study Scales (N = 275)

Scale/Subscale	No. of items	Cronbach's α	McDonald's ω
Social Media Exposure (Items 1–8)	8	.79	.80
Cybervictimization (Items 9–20)	12	.92	.93
Cyberperpetration (Items 21–30)	10	.88	.89
Risk/Protection (Items 31–40)	10	.83	.84
Overall questionnaire (All items)	40	.90	.91

Table 9 indicates that all study scales demonstrate adequate to excellent internal consistency reliability, with Cronbach's α ranging from .79 to .92 and McDonald's ω ranging from .80 to .93, reflecting stable item intercorrelations and coherent measurement across subscales. The Cybervictimization scale shows the strongest reliability ($\alpha = .92$, $\omega = .93$), followed by Cyber perpetration ($\alpha = .88$, $\omega = .89$) and Risk/Protection ($\alpha = .83$, $\omega = .84$), while Social Media Exposure remains acceptable ($\alpha = .79$, $\omega = .80$). The overall questionnaire exhibits high reliability ($\alpha = .90$, $\omega = .91$), supporting the instrument's suitability for subsequent inferential analyses (e.g., correlations/regression) with minimized measurement error.

Table 10. Independent-Samples t-Tests for Demographic Variables (N = 275)

Group	n	M	SD	t(df)	p	Cohen's
(A) Victimization score by gender						
Male	150	15.40	9.80	2.25 (273)	.025	0.27
Female	125	12.80	9.20			
(B) Perpetration score by gender						
Male	150	7.20	7.10	2.99 (273)	.003	0.36
Female	125	4.80	6.00			
(C) Victimization score by school type						
Inclusive	178	13.10	9.30	−2.57 (273)	.011	−0.32
Special	97	16.20	10.00			

Table 10 shows statistically significant between-group differences with small effect sizes across demographic comparisons. Males reported higher victimization than females (Male: M = 15.40, SD = 9.80; Female: M = 12.80, SD = 9.20), $t(273) = 2.25$, $p = .025$, Cohen's $d = 0.27$, indicating a small practical difference.

For perpetration, males again scored significantly higher than females (Male: M = 7.20, SD = 7.10; Female: M = 4.80, SD = 6.00), $t(273) = 2.99$, $p = .003$, Cohen's $d = 0.36$, reflecting a small-to-approaching-moderate effect.

By school type, students in special schools exhibited greater victimization than those in inclusive schools (Inclusive: M = 13.10, SD = 9.30; Special: M = 16.20, SD = 10.00), $t(273) = -2.57$, $p = .011$, Cohen's $d = -0.32$; the negative sign reflects the direction of group coding, while the magnitude indicates a small effect favoring higher victimization in special-school settings.

Table 11. One-Way ANOVA for Demographic Variables

Categories	n	M	SD
Disability Category			
Hearing impairment	77	11.50	9.10
ASD	62	19.00	10.20
Learning disability	84	13.00	9.40
Mild intellectual disability	52	16.80	9.80
Age Category			
10–12	84	4.20	5.50
13–15	130	6.20	6.60
16–18	61	8.10	7.20

Table 11 presents the group-wise descriptive statistics that underpin the one-way ANOVA comparisons, indicating

meaningful between-group mean dispersion across both disability and age categories. For disability category, the highest mean score is observed for ASD ($n = 62$, $M = 19.00$, $SD = 10.20$), followed by mild intellectual disability ($n = 52$, $M = 16.80$, $SD = 9.80$), whereas hearing impairment shows the lowest mean ($n = 77$, $M = 11.50$, $SD = 9.10$); this rank-order pattern suggests heterogeneity of group means that is consistent with a potential ANOVA main effect.

For age category, the means increase monotonically with age—10–12 ($n = 84$, $M = 4.20$, $SD = 5.50$), 13–15 ($n = 130$, $M = 6.20$, $SD = 6.60$), and 16–18 ($n = 61$, $M = 8.10$, $SD = 7.20$) indicating a positive age gradient in the outcome variable and implying that older participants report higher levels on the measured construct. Overall, the relatively large and comparable within-group SDs across categories indicate substantial intra-group variability, so the ANOVA inference (F-test) will depend on whether the between-group variance exceeds within-group variance; post-hoc tests (e.g., Tukey HSD) would be appropriate if the omnibus ANOVA is significant.

Table 12. Correlation Matrix of Key Study Variables ($N = 275$)

Variable	1	2	3	4	5	6
1. Exposure	—					
2. Victimization	.41***	—				
3. Perpetration	.28***	.33***	—			
4. Loneliness	.25***	.46***	.19**	—		
5. Self-esteem	-.12*	-.30***	-.17**	-.34***	—	
6. Parental guidance	-.10	-.22***	-.15*	-.16**	.18**	—

$p < .05^*$, $p < .01^{**}$, $p < .001^{***}$.

Table 12 indicates a moderate, positive association between social media exposure and cybervictimization ($r = .41$, $p < .001$), and a small-to-moderate positive association between exposure and perpetration ($r = .28$, $p < .001$), suggesting that higher exposure is systematically linked with greater involvement in cyberbullying experiences. The strongest correlation is between victimization and loneliness ($r = .46$, $p < .001$), while victimization is also significantly related to lower self-esteem ($r = -.30$, $p < .001$), reflecting a meaningful psychosocial burden among victimized students.

Protective factors show the expected inverse pattern: parental guidance is negatively correlated with victimization ($r = -.22$, $p < .001$) and perpetration ($r = -.15$, $p < .05$), and positively correlated with self-esteem ($r = .18$, $p < .01$), indicating a modest protective linkage; however, the exposure–parental guidance correlation is non-significant ($r = -.10$), implying parental guidance does not directly track overall exposure level in this sample. Overall, coefficients remain below .70, suggesting no immediate multicollinearity concern, and interpretations should remain associational (correlation $\neq$ causation).

Table 13. Multiple Regression Predicting Cybervictimization Score ($N = 275$)

Predictor	B	SE B	β	t	p
Exposure	0.62	0.11	.41	5.64	<.001
Loneliness	1.45	0.28	.36	5.18	<.001
Self-esteem	-0.88	0.29	-.21	-3.03	.003
Parental guidance	-0.54	0.26	-.14	-2.06	.041
School type (Special = 1)	1.90	1.13	.09	1.68	.093

Table 13 shows that cybervictimization is significantly predicted by a combination of exposure and psychosocial factors. Social media exposure is the strongest predictor ($B = 0.62$, $SE = 0.11$, $\beta = .41$, $t = 5.64$, $p < .001$), indicating that, holding other variables constant, each one-unit increase in exposure is associated with a 0.62-unit increase in victimization score. Loneliness also contributes substantial unique variance ($B = 1.45$, $SE = 0.28$, $\beta = .36$, $t = 5.18$, $p < .001$), reflecting that higher perceived loneliness is linked to higher victimization even after accounting for exposure and other covariates.

Protective factors operate in the expected direction: self-esteem is a significant negative predictor ($B = -0.88$, $SE = 0.29$, $\beta = -.21$, $t = -3.03$, $p = .003$), and parental guidance is also inversely associated with victimization ($B = -0.54$, $SE = 0.26$, $\beta = -.14$, $t = -2.06$, $p = .041$), suggesting that greater self-worth and stronger parental monitoring/support correspond to lower victimization risk when other predictors are controlled. School type (Special = 1) is not statistically significant ($B = 1.90$, $p = .093$), implying that its bivariate association with victimization is attenuated once the model adjusts for exposure and psychosocial characteristics; practically, the regression indicates that exposure and loneliness elevate risk, whereas self-esteem and parental guidance function as protective covariates in explaining cybervictimization.

4. Findings

In the present study ($N = 275$), the demographic profile showed a slightly higher proportion of boys (54.5%) than girls (45.5%), with most participants aged 13–15 years (47.3%). A larger share of students were enrolled in inclusive schools

(64.7%) than special schools (35.3%), and the largest disability subgroup was students with specific learning disabilities (30.5%), followed by hearing impairment (28.0%), ASD (22.5%), and mild intellectual disability (18.9%).

Cyberbullying involvement within the last three months was common: 64.0% reported at least one cyber victimisation experience and 29.5% reported at least one cyber perpetration behaviour, with 20.7% classified as bully victims (both victim and perpetrator). These proportions are consistent with literature indicating that cyberbullying frequently overlaps with broader peer victimisation experiences and may be elevated among youth with neurodevelopmental and learning needs.

Regarding patterns of cyber victimisation, the most frequently endorsed forms were mean/rude messages (52.0%), name-calling in group chats (45.5%), and exclusion from groups/chats (41.5%), followed by rumour spreading (37.8%). These patterns align with research describing social media cyberbullying as often relational (exclusion, humiliation, peer-group targeting) and amplified by platform affordances (group chats, reposting/sharing, screenshots).

Reliability analysis indicated strong internal consistency for the cyber victimisation subscale ($\alpha \approx .92$) and good reliability for exposure ($\alpha \approx .79$), perpetration ($\alpha \approx .88$), and risk/protection items ($\alpha \approx .83$), supporting the questionnaire's suitability for group-level research reporting. This is consistent with recent evidence emphasising the importance of using psychometrically sound cyberbullying tools, especially in school-aged populations where definitions and recall periods can affect estimates.

Independent-samples t-tests suggested statistically meaningful differences in cyberbullying outcomes across selected demographic groups (e.g., perpetration differences by gender and victimisation differences by school type), while one-way ANOVA results indicated significant variation in victimisation across disability categories and in perpetration across age groups. These group differences are compatible with prior findings that neurodevelopmental traits, school functioning, and peer ecology can shape cyberbullying involvement and its distribution across subgroups.

Correlational and regression analyses indicated that higher social media exposure and loneliness were positively associated with cyber victimisation, while self-esteem and parental guidance showed protective associations. These relationships mirror established evidence that psychosocial vulnerabilities (e.g., loneliness, reduced self-esteem) and contextual supports (family mediation, supportive school environments) are central mechanisms linked to cyberbullying risk and impact.

5. Discussion

The findings indicate that cyberbullying on social media is a frequent experience among children with special needs, with a substantial proportion reporting cybervictimization and a smaller but important subgroup reporting perpetration and bully victim status. This pattern is consistent with evidence that young people with neurodevelopmental and learning-related needs can face elevated vulnerability to bullying and victimization, including in online contexts, due to social-communication challenges, peer relationship difficulties, and heightened exposure to exclusionary dynamics (Beckman et al., 2020).

The most commonly reported patterns rude/insulting messages, group-chat name-calling, and exclusion from online groups suggest that cyberbullying is often relational and group-based rather than only direct threats. Contemporary scholarship notes that platform features (e.g., group chats, rapid sharing, persistent visibility, screenshots) can intensify humiliation and repetition, making relational aggression easier to enact and harder to escape, particularly for students who already experience marginalization (Aboujaoude & Savage, 2023).

Differences across demographic groups (e.g., age or disability categories) can be interpreted through an ecological lens in which individual traits interact with school functioning and peer context. For example, research in nationally representative child samples shows links between autistic traits and cyberbullying involvement and highlights mediating roles of school dysfunction and comorbid psychopathologies, suggesting that school adjustment and mental health supports may be key mechanisms for reducing risk rather than focusing on diagnosis alone (Lin et al., 2023).

The observed associations between cybervictimization and psychosocial factors such as loneliness and lower self-esteem align with evidence that these variables can be linked to cyberbullying involvement among students with learning difficulties, and with meta-analytic findings showing that bullying (traditional and cyber) is associated with adverse mental health outcomes in children and adolescents. This supports the interpretation that cyberbullying should be addressed not only as an online safety issue but also as a mental health and well-being concern, especially for students with additional support needs (Li et al., 2024; Touloupis, 2024).

Protective factors, for example, parental guidance and digital skills, are particularly crucial for children with special needs as digital participation may come with digital inequality, such as uneven access to safety knowledge, support, and effective reporting pathways. The research of internet use among people with intellectual disabilities shows that inequality can still persist even where access is available, thus tailored scaffolding,

accessible safety training, and supportive adults who can help students navigate online risks while at the same time maintain their autonomy and inclusion are all necessary (Clements et al. , 2024; Glencross et al. , 2021).

From the point of view of the intervention, the findings advocate for multi, layered prevention and response strategies that incorporate (a) easy, to, understand digital citizenship instruction, (b) enhanced school reporting and response systems, and (c) family, centered mediation tactics. Evidence from an umbrella review points to the fact that intervention effects can be modest and variable, thus it is necessary to adjust programs according to the needs of the learners (e. g. , easy, read resources, visual supports, explicit practice of reporting/blocking, social skills coaching) and to carry out more rigorous evaluations of disability, adapted interventions (Heyeres et al. , 2021).

6. Conclusion

This is a study of how well children with special needs can use social media safely. It turns out they get bullied on social media a lot, and some of them even bully others. Most of the time they use relational aggression in group, based spaces, so peer, group dynamics and platform affordances have a great influence on how they get hurt. Identification of risk factors shows that increased use of social media and loneliness can cause cyber victimisation, while self, esteem and parental guidance are protective factors. Hence, the research sets the frame for an ecological understanding of cyberbullying in which the emotional weaknesses of an individual could be linked with his peer context, family mediation and school systems, so the effective responses to cyberbullying should at least have digital skills accompanied by psychosocial and environment supports.

Recommendations

1. Institutions must perform activities on digital citizenship and anti, bullying that will be understandable by everyone (easy language, visuals, roleplay) and make sure that teachers respond consistently to reports so as not to increase group, chat harassment and exclusion.
2. Parents must be actively involved (privacy settings, blocking/reporting, safe communication rules) instead of only restricting use, in order that children with special needs may be safely online.
3. Institutions must identify those who are lonely and have low self, esteem and offer them counselling/social, skills support if they are students involved in cyberbullying, with a clear referral system for repeated or severe cases.
4. This research is limited to Lahore division, Pakistan based only. In future, researchers can conduct research at province level or country level to identify results at larger scale.
5. Researchers can conduct research on the same topic after five years by keeping the sample same to measure the improvement among the children.

Acknowledgments

The authors acknowledge the respondents who participated in this research study.

Author contributions

Dr. Mostafa Hemida and Dr. Ghulam Safdar were responsible for study design and revising. Dr. Muhammad Javed Aftab was responsible for data collection. Dr. Adel Bilal Ebrahim Albelal drafted the manuscript and revised it. All authors read and approved the final manuscript. In this paragraph, also explain any special agreements concerning authorship, such as if authors contributed equally to the study.

Funding

Authors received NO funding to conduct this research study.

Competing interests

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

Informed consent

Obtained.

Ethics approval

The Publication Ethics Committee of the Redfame Publishing.

The journal's policies adhere to the Core Practices established by the Committee on Publication Ethics (COPE).

Provenance and peer review

Not commissioned; externally double-blind peer reviewed.

Data availability statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Data sharing statement

No additional data are available.

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