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The Correlates of Cyberbullying Victimization Among Victimized Costa Rican Youth: Evidence from the 2023 Kids Online Survey

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Abstract

Cyberbullying has emerged as a significant concern for the mental health and well-being of children and adolescents, yet evidence from nationally representative surveys in Latin America remains limited. This study examined correlates of cyberbullying victimization among Costa Rican youth using data from the 2023 Kids Online survey. The initial sample consisted of 1200 participants aged 9–17 years; however, analyses were restricted to the 264 respondents who reported having experienced offensive or unpleasant treatment by a peer during the previous year and therefore completed the cyberbullying follow-up items. Descriptive analyses and nonparametric tests were conducted to examine demographic differences, followed by an ordinal logistic regression model evaluating individual, family, and school-related correlates, including age, caregiver supervision of internet use, teacher support, negative emotional experiences associated with online activities, and engagement in online aggressive behaviors toward peers. Among respondents reporting peer victimization, 13.2% met the study criterion for cyberbullying victimization, defined as online victimization occurring at least once per month. Older age was associated with higher levels of cyberbullying victimization, whereas sex was not a significant predictor after adjustment for other variables. The regression model revealed nonlinear associations between cyberbullying victimization and both caregiver supervision and teacher support, suggesting patterns consistent with reactive supervision. In addition, negative emotional online experiences emerged as one of the correlates of victimization, while online aggressive behavior showed a marginal positive association. These findings suggest that, among victimized youth, cyberbullying victimization reflects a complex interaction of individual characteristics, emotional experiences, and the quality and timing of adult guardianship. Prevention efforts should therefore emphasize proactive, trust-based support from families and schools, alongside strategies that strengthen adolescents' emotional resilience and digital citizenship.



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1. Introduction

Interpersonal communication among children and adolescents is increasingly shifting from face-to-face interactions toward digital environments mediated by screens [1]. This transformation represents more than a technological change; it has altered how young people socialize, construct identities, maintain relationships, and experience both opportunities

and risks in their daily lives [2]. As digital technologies become embedded in children's routines, understanding their implications for development and well-being has become an important research and public policy priority.

Recent evidence from a variety of studies indicates that digital environments provide significant benefits for children and adolescents, including opportunities for social connection, identity exploration, entertainment, learning, and participation in online communities [2,3]. These benefits may be especially important for young people who experience social marginalization offline, as digital platforms can provide spaces for support, belonging, and self-expression. When digital engagement occurs in developmentally appropriate contexts and is supported by caregivers or peers, it can promote empathy and communication skills, both of which are important for prosocial development.

At the same time, scholars increasingly emphasize that digital environments expose young people to multiple risks that may undermine psychological and social well-being [2]. Excessive or poorly regulated digital engagement has been associated with emotional distress, anxiety, loneliness, depressive symptoms, lower self-esteem, and difficulties in emotional regulation. Moreover, harmful online interactions, exposure to inappropriate content, and encounters with online aggression constitute important threats to healthy development [2]. Among these risks, cyberbullying has emerged as one of the most concerning issues because of its prevalence, persistence, and potential consequences for mental health and social adjustment [4].

Cyberbullying has become an international public health concern due to its association with depression, anxiety, substance use, emotional distress, self-harm, and suicidal behaviors among young people [5]. Unlike traditional bullying, cyberbullying can transcend physical and temporal boundaries, allowing harmful content to be rapidly disseminated and repeatedly shared among large audiences [5–7], potentially amplifying its psychological consequences [8]. Consequently, victimization experiences may become persistent and difficult to escape, amplifying their psychological consequences [9,10].

Despite growing academic attention, several important gaps remain in the cyberbullying literature. First, some studies focus primarily on rates of victimization and perpetration while overlooking the broader family, school, and psychosocial factors that may function as risk or protective mechanisms. This narrow focus limits our understanding of the complex dynamics underlying cyberbullying and constrains the development of effective prevention and intervention strategies [9]. Second, existing evidence is heavily concentrated in North America, Europe, and selected Asian contexts, while nationally representative studies from Latin America remain comparatively scarce [4,11]. Third, many studies rely on bivariate associations or simple correlational approaches that may fail to capture the complex and potentially nonlinear relationships among individual, family, and school-related factors associated with cyberbullying victimization [12]. Although recent reviews have identified multiple risk and protective factors, less attention has been devoted to understanding how these factors operate simultaneously within nationally representative populations [4,13].

Costa Rica offers a particularly relevant context in which to address these gaps. As internet connectivity and digital participation among children and adolescents continue to expand, understanding the correlates of cyberbullying becomes increasingly important for designing evidence-based prevention and intervention strategies. However, empirical evidence based on nationally representative Costa Rican samples remains limited.

The present study addresses these limitations by examining cyberbullying victimization among Costa Rican children and adolescents using data from the 2023 Kids Online survey, a nationally representative sample of individuals aged 9 to 17 years. Drawing on routine activity theory and socio-cognitive approaches, this study simultaneously evaluates

individual, family, and school-related correlates of cyberbullying victimization, including age, sex, caregiver supervision of internet use, teacher support, negative emotional online experiences, and engagement in online aggression toward peers.

A further contribution of this study lies in its methodological approach. Previous research often relies on simple correlations that may not adequately capture the nonlinear and cumulative nature of cyber-victimization [12]. By incorporating polynomial terms into ordinal regression models, the present study explores whether factors such as caregiver supervision and teacher support operate in more complex ways than traditionally assumed. Identifying these patterns within a nationally representative Costa Rican sample contributes to both theoretical understanding and the development of more effective prevention policies.

Accordingly, the present study seeks to answer the following research question:

What individual, family, and school-related correlates are associated with cyberbullying victimization among Costa Rican children and adolescents who report experiences of peer victimization?

2. Literature Review and Theoretical Development

2.1. Cyberbullying as a Digital Form of Aggression

Cyberbullying is generally understood as aggressive behavior occurring through digital technologies and directed toward another individual with the intention of causing harm [2,6]. Although most definitions include elements such as intentionality, repetition, and power imbalance, there remains considerable debate regarding how these criteria should be applied in online settings [10,14].

The absence of a universally accepted definition has important implications for research because different operationalizations often produce different prevalence estimates [4,9]. Nevertheless, a consistent finding across studies is that cyberbullying represents a distinct form of online victimization that warrants investigation, particularly as children's exposure to digital environments continues to increase [15,16].

Because the objective of the present study is to examine correlates of victimization rather than to develop a new measurement framework, cyberbullying is operationalized using a frequency-based criterion that distinguishes occasional negative online interactions from repeated victimization experiences. This approach follows recommendations emphasizing the importance of identifying persistent patterns of online aggression when studying cyberbullying [4,9].

Correlates of Cyberbullying Victimization

Recent reviews indicate that cyberbullying victimization is associated with factors operating at multiple ecological levels, including individual characteristics, online behaviors, family environments, peer relationships, and school contexts [4,13,17].

At the individual level, age has been consistently examined as a correlate of cyberbullying involvement. Although findings vary across studies, greater online engagement during adolescence may increase exposure to potential offenders and place older youth at greater risk of victimization [18,19].

Sex differences in cyberbullying represent a complex and controversial area of study, with findings varying significantly based on the specific role and cultural context. Regarding perpetration, research consistently indicates that males are more likely to be involved as aggressors compared to females [4,13,20]. For instance, a large-scale study of Italian adolescents found that 36.5% of boys identified as cyberbullies compared to 22.9% of girls [20]. However, results concerning victimization remain highly inconsistent across global research [4]. In certain regional contexts, such as Colombia, studies indicate that males are more likely to be targets of specific digital behaviors, such as online

exclusion [19]. In contrast, other large-scale samples, such as a study of over 5000 Israeli students, found no statistically significant difference in mean victimization levels between the two groups [18]. Similarly, a systematic review of longitudinal data suggests that while males are at higher risk for perpetration, both genders face a relatively equal risk of being victimized [13].

Beyond prevalence, the nature of digital aggression appears gendered. Males are more frequently targeted through online exclusion, whereas females are more likely to experience indirect harassment, such as the spreading of rumors or written insults [4,19,20]. Cultural factors also play a critical role, as traditional masculinity norms may make males more reluctant to report their experiences or express vulnerability when victimized [4]. Finally, the psychological impact of these acts appears more severe for females, who report higher levels of suicidal ideation, anxiety, and depression compared to their male counterparts [4,21]. Individual behavioral factors also appear relevant. Research suggests that engagement in online aggression may be associated with subsequent victimization, supporting the notion of a bully–victim overlap in which some adolescents participate in both roles [13,22].

In addition to demographic and behavioral characteristics, emotional experiences in digital environments have received growing attention. Negative emotional reactions to online interactions may indicate repeated exposure to harmful experiences and may therefore be associated with higher probabilities of victimization [6,22].

Family and school contexts likewise play an important role in understanding cyberbullying victimization. Positive parent–child relationships, parental mediation of internet use, and supportive school environments have been identified as protective factors, whereas weak supervision and limited social support may increase vulnerability [13,17]. However, evidence concerning the effectiveness of adult supervision remains mixed, suggesting that the relation may be more complex than typically assumed [20].

The present study builds on this literature by simultaneously examining individual, emotional, family, and school-related correlates of cyberbullying victimization within a nationally representative Costa Rican sample. Furthermore, this study investigates whether supervision and support exhibit nonlinear relationships with victimization levels, an issue that has received limited empirical attention.

2.2. Theoretical Development

Routine Activity Theory

Routine Activity Theory proposes that victimization occurs when a motivated offender, a suitable target, and the absence of a capable guardian converge within a particular environment [18,19]. When applied to digital settings, this framework suggests that routine online activities influence opportunities for cyberbullying and shape exposure to potential aggressors [12]:

Age and Target Suitability: Age serves as a primary indicator of target suitability and exposure. As adolescents gain developmental independence, their time spent online increases, which raises their visibility and accessibility to potential offenders [12,18,19]. While some research suggests that cyber-victimization peaks in early-to-mid adolescence (around age 14) and subsequently decreases [13], other evidence indicates that older adolescents remain at significant risk due to their sustained and constant technological engagement [18,19].

Sex and Exposure Patterns: Sex is a sociodemographic determinant that influences target selection and reporting patterns. Global findings on prevalence remain controversial; some large-scale studies find no significant differences in mean victimization levels between sexes [18], while others suggest that females face heightened risk due to greater engagement

with social media platforms [4]. However, the nature of the aggression is highly gendered: males are more frequently targets of online exclusion, whereas females are more likely to experience indirect harassment, such as the spreading of rumors or written insults [4,19,20]. Traditional masculinity norms may further influence these results, as boys are often less likely to disclose experiences involving fear or vulnerability [4].

Guardianship (Caregivers and Teachers): The “capable guardian” pillar is tested through caregiver supervision and teacher support. Effective guardianship in the digital age relies on an authoritative approach rather than mere restriction [17,20]. Caregiver control of internet time acts as a deterrent, yet its effectiveness is often nonlinear; “re-active supervision”—where parental control intensifies only after an adverse event has occurred—can be less effective than proactive, trust-based monitoring [6,20]. High levels of trust in offline relationships function as a protective “human shield,” significantly reducing the probability of victimization [18]. Similarly, teachers serve as institutional guardians and moral anchors whose support can mitigate the mimetic dynamics of social exclusion within the school climate [6,17].

2.3. Socio-Cognitive Perspectives

While Routine Activity Theory addresses the external environment, socio-cognitive theories explain the internal mechanisms shaping online behavior and victimization risk.

Online Aggressive Behaviors and the Bully–Victim Cycle: This perspective highlights the significant overlap between perpetrators and victims in digital spaces [13,22]. Adolescents who engage in aggressive behaviors toward peers often become suitable targets for retaliatory attacks, fueling a “bully–victim” cycle [22]. This process is often facilitated by moral disengagement, where the anonymity and asynchrony of digital media allow individuals to bypass internal feelings of guilt or shame by justifying harmful acts [6].

Negative Emotional Experiences and Internal Strain: Negative emotions—such as “feeling bad” about online interactions—serve as markers of internal strain. Repeated negative emotional experiences may indicate a lower cognitive defense threshold or increased exposure to harmful digital environments, thereby predicting persistent victimization [6,21]. These experiences reflect the deep psychological impact of online aggression, which is closely linked to serious mental health outcomes including anxiety, depression, and suicidal ideation [5,21].

2.4. Integrating the Framework

By integrating Routine Activity Theory and socio-cognitive perspectives, this study conceptualizes cyberbullying victimization as a product of both digital opportunity structures (age, sex, and guardianship) and internalized behavioral patterns (aggression and emotional strain) [12,18,19,22]. As illustrated in Figure 1, the model proposes that these individual, relational, and contextual correlates simultaneously influence the probability and frequency of cyber-victimization within the digital landscape [4,13,17].

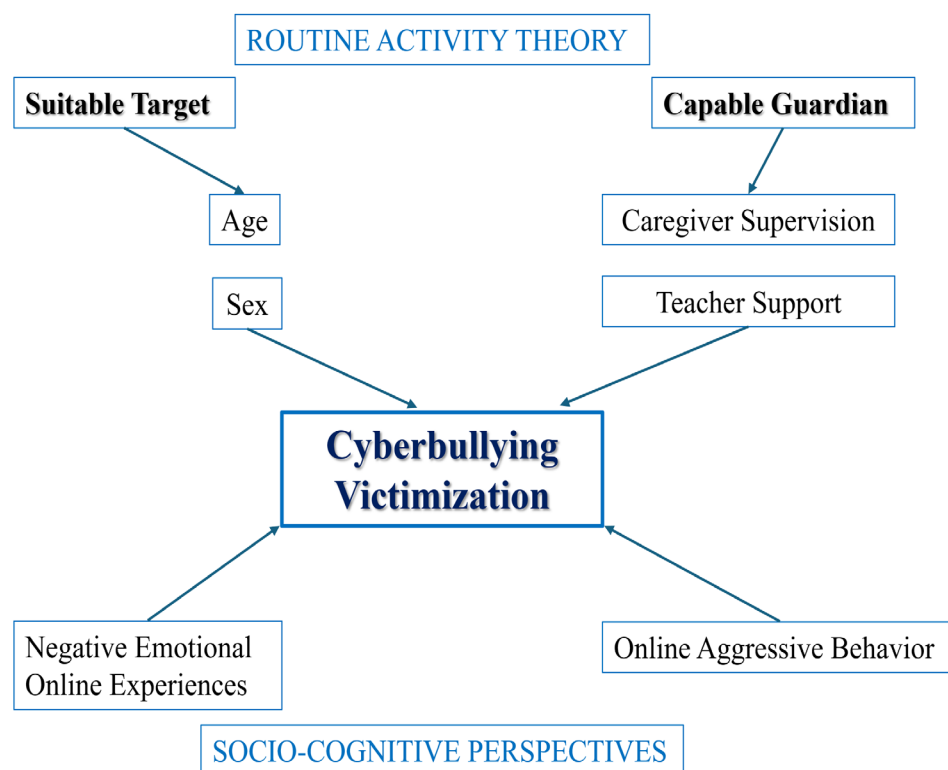


Figure 1. A conceptual model of cyberbullying victimization (Note. Drawing on Routine Activity Theory and socio-cognitive perspectives, the model proposes that cyberbullying victimization is associated with demographic characteristics (age and sex), forms of adult guardianship (caregiver supervision and teacher support), emotional experiences in online environments, and engagement in online aggressive behavior).

3. Materials and Methods

3.1. Participants

The sample consisted of 1200 minors, with a M age of 12.7 years, 47.4% of whom were between the ages of 9 and 12, an SD age of 2.6, a minimum age of 9, and a maximum age of 17; 95.1% were Costa Rican, while 4.9% were other nationalities. In terms of gender distribution, 48.4% identified as female, 51.0% as male, and 0.6% indicated that they did not identify with either of the previous options. Regarding geographic context, 72.9% resided in urban areas and 27.1% in rural areas. Most of the sample (97.5%) reported attending a school or college, while 2.5% were not enrolled in the formal education system. The sampling design was probabilistic, based on a stratified, proportional, and multistage random sampling method developed by the National Institute of Statistics and Censuses (INEC) of Costa Rica, representative at the national level. The study achieved a 95% confidence level and an estimated maximum sampling error of 2.8%. The recorded refusal rate was 19.3%.

Of the 1200 participants included in the Kids Online survey, 264 (22.0%) reported having been treated in an offensive or unpleasant manner by a peer during the previous year and were therefore administered the follow-up items regarding the modality and frequency of the experience. Among these respondents, 99 reported that the experience involved the Internet, and 35 met the study criterion for cyberbullying victimization (at least once per month). All analyses involving the cyberbullying outcome were conducted using the subsample of 264 respondents who completed the follow-up cyberbullying questions.

3.2. Instruments

The Kids Online Survey aims to measure internet usage patterns, considering the opportunities, skills, and risks for children and adolescents, as well as to provide up-to-date information on internet and digital technology use by minors in Costa Rica to inform public policy in this area.

3.2.1. Cyberbullying Victimization (Dependent Variable)

Cyberbullying victimization was measured within the *Online Risks* module using a two-step screening procedure. Participants were first asked *“In the last year, has any person of your age treated you in an offensive or unpleasant manner?”* Respondents who answered affirmatively were subsequently asked *“In the last year, how often has a person of your age treated you in an offensive or unpleasant manner through the Internet?”*

Responses were recorded on a five-point ordinal scale: (0) Never, (1) Only once or twice, (2) At least once per month, (3) At least once per week, and (4) Every or almost every day.

For the multivariate analyses, cyberbullying victimization was operationalized as repeated online mistreatment occurring at least once per month (categories 2–4). Isolated incidents reported as occurring once or twice during the year were excluded from this classification in order to distinguish persistent victimization from occasional negative online experiences.

3.2.2. Predictors and Correlates

The ordinal logistic regression model included a set of individual, family, and school-related variables selected to examine the convergence of risk and protective factors associated with cyberbullying victimization.

Age. Participants reported their age in years (*“How old are you?”*). Age was included in the model as a standardized continuous variable.

Sex. Participants identified their sex as female, male, or neither of these options.

Caregiver Supervision. Caregiver monitoring was assessed with the item: *“How often does your caregiver control the time you can use the Internet?”* This variable served as an indicator of parental supervision and capable guardianship in the online environment.

Teacher Support. Teacher support was measured using the item *“How often does any teacher help you when you have difficulty finding something on the Internet?”* This variable represents institutional support and guidance within the school context, reflecting the protective role of adults in promoting safe and effective internet use.

Negative Emotional Experiences Online. Emotional strain associated with internet use was assessed through the question *“In the last year, how often have you seen or experienced something on the Internet that made you feel bad?”* This variable captures exposure to distressing online experiences and represents a potential source of emotional strain that may increase vulnerability to victimization.

Online Aggressive Behavior. Participants were asked *“In the last year, have you treated any person of your age in an offensive or unpleasant manner?”* This variable was included to account for the overlap between victim and aggressor roles, consistent with research on the bully–victim phenomenon and the reciprocal nature of online aggression.

3.3. Procedures

The survey was conducted through household visits, during which a minor and their primary caregiver were interviewed simultaneously. The target population consisted of children and adolescents aged 9 to 17 years, residing in urban and rural areas of the country. Data were collected using a structured questionnaire administered by trained staff

during home visits, following standardized procedures for informed consent and ethical data protection.

3.4. Analysis

Because the cyberbullying victimization variable was measured on an ordinal frequency scale, nonparametric statistical procedures were used in the descriptive and initial inferential phases. First, descriptive and distribution statistics were calculated. To explore sociodemographic determinants, the association between cyberbullying victimization and age was examined using Spearman's rank correlation coefficient. Additionally, potential differences in the distribution of victimization by nationality and sex were assessed using Pearson's chi-square tests of independence.

To simultaneously analyze the individual, family, and school-related correlates of cyberbullying, an ordinal logistic regression (logit) model was estimated, in which cyberbullying victimization was specified as an endogenous variable. The model included as predictors age, various indicators of caregiver supervision of internet use, variables related to teacher support, negative emotional experiences associated with internet use, and online aggressive behaviors toward peers. To capture nonlinear patterns, polynomial terms (linear, quadratic, and cubic) were incorporated. The model results are reported as odds ratios (ORs), along with their 95% confidence intervals and *p*-values. In addition, predicted probabilities were estimated and plotted for different levels of victimization by categories of caregiver supervision and teacher support. All analyses were performed using the statistical software R, version 4.5.3.

Finally, because the cyberbullying frequency question was administered only to respondents who first indicated having been treated offensively or unpleasantly by a peer during the previous year, the analytical sample for all cyberbullying-specific analyses was restricted to these respondents ($n = 264$). Consequently, descriptive statistics, bivariate analyses, and ordinal regression results should be interpreted as referring to variation in cyberbullying victimization among youth who reported some form of peer victimization, rather than the full nationally representative sample of 1200 minors.

4. Results

This section presents the descriptive and inferential results related to cyberbullying. First, descriptive analyses are reported, followed by analyses of demographic differences and an ordinal regression model examining correlates of cyberbullying victimization.

4.1. Descriptive Analyses of Cyberbullying

As shown in Figure 2, the variable used to measure cyberbullying is categorical; therefore, nonparametric analyses were required. Overall, the prevalence of cyberbullying victimization during the past year was modest. Among respondents who reported that someone of their age had treated them offensively or unpleasantly in the previous 12 months ($n = 264$), 62.5% ($n = 165$) indicated that this mistreatment never occurred online, while 24.2% ($n = 64$) reported experiencing it only once or twice during the year, which did not meet the criteria for cyberbullying.

Cyberbullying was defined as victimization occurring at least once per month. Based on this threshold, 8.3% of respondents ($n = 22$) reported experiencing online victimization at least monthly. Additionally, 1.9% ($n = 5$) reported victimization occurring at least once per week, and 3.0% ($n = 8$) reported being victimized every or almost every day. Taken together, 13.2% of respondents who reported peer victimization experienced cyberbullying victimization at least once per month during the previous year.

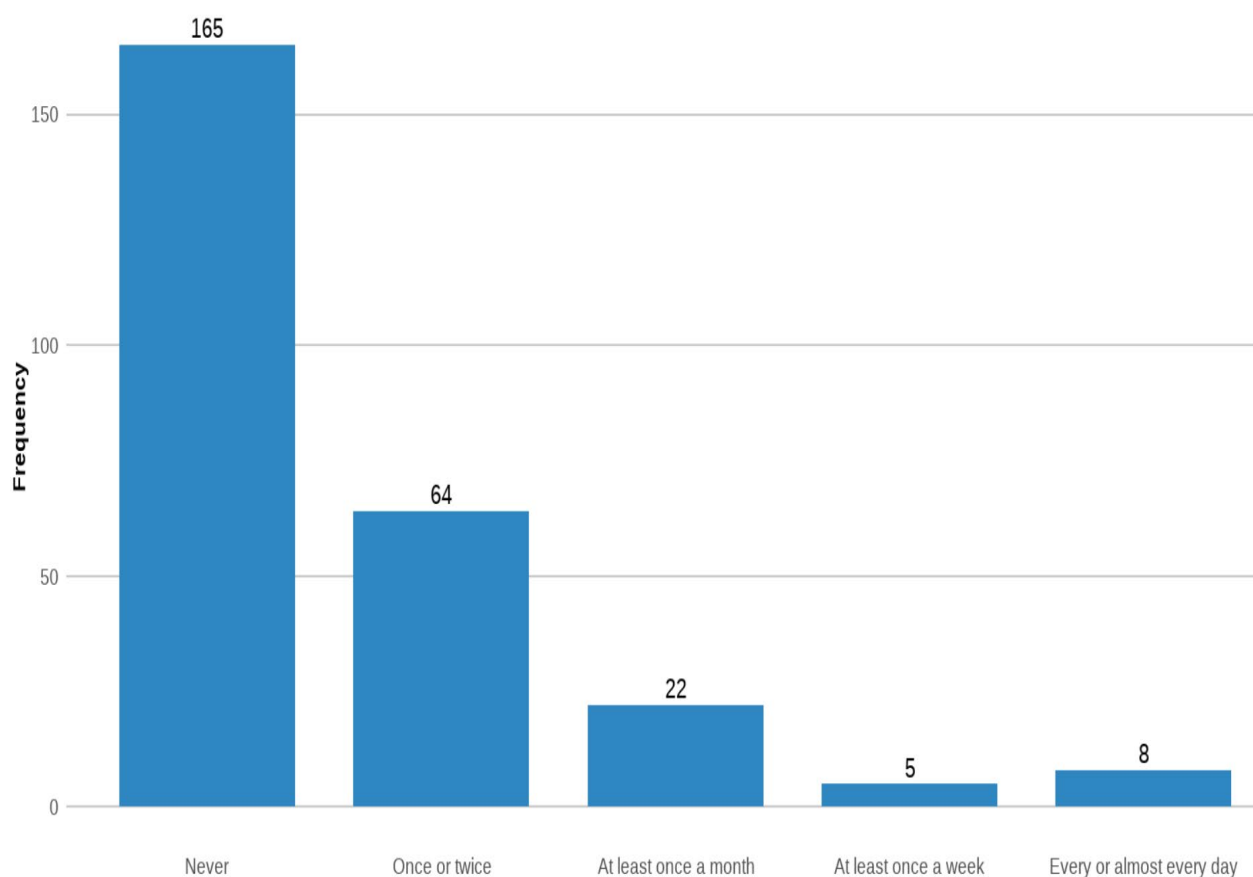


Figure 2. Distribution of cyberbullying variable.

4.2. Demographic Correlates

The relations between age and cyberbullying victimization were examined using Spearman's rank-order correlation among participants who reported having experienced offensive or unpleasant treatment by peers ($n = 264$). The results indicated a significant positive association, suggesting that higher age was related to greater cyberbullying victimization ($\rho(262) = 0.22, p = 0.001$).

Differences in reported cyberbullying victimization were also examined by nationality (Costa Rican vs. non-Costa Rican) using Pearson's chi-square test of independence. The analysis showed no significant association between nationality and victimization ($\chi^2(4, n = 264) = 1.42, p = 0.84$).

In contrast, the distribution of cyberbullying victimization differed significantly by sex ($\chi^2(8) = 16.55, p = 0.035$), with a small effect size (Cramér's $V = 0.18$) for the three groups (men, women, and neither men nor women). Descriptively, 17.1% of men reported victimization at least monthly, compared to 7.8% of women and 11.1% of participants who selected neither men nor women.

4.3. Ordinal Logistic Regression Model of Cyberbullying Correlates

An ordinal logistic regression model (logit link) was estimated with cyberbullying victimization as the dependent variable among respondents who reported at least one incident of offline or online peer victimization during the previous year and therefore completed the follow-up cyberbullying items ($n = 264$).

Age showed a significant positive effect (OR = 1.72, 95% CI [1.25, 2.38], $p < 0.001$), whereas sex did not show a significant effect (OR = 1.29, 95% CI [0.70, 2.37], $p = 0.409$). Compared to females, males had 1.32 times greater odds of reporting higher levels of victimization, although this effect was not statistically significant (OR = 1.32, 95% CI

[0.72, 2.41], $p = 0.372$). Likewise, participants who indicated that neither female nor male represented their sex showed higher odds of cyberbullying victimization relative to females (OR = 2.64, 95% CI [0.37, 19.00], $p = 0.335$), but this effect was also not statistically significant.

A significant linear effect was observed for caregiver supervision of internet use (OR = 1.97, 95% CI [1.04, 3.74], $p = 0.039$), along with a significant negative quadratic effect (OR = 0.46, 95% CI [0.24, 0.89], $p = 0.020$).

Additionally, the model captured a significant cubic component for teacher assistance in helping students search for information online (OR = 0.44, 95% CI [0.21, 0.90], $p = 0.025$). A significant positive linear effect was found for the frequency with which something that happened online made participants feel bad (OR = 3.28, 95% CI [1.01, 10.67], $p = 0.048$), along with a stronger negative quadratic effect (OR = 0.32, 95% CI [0.11, 0.94], $p = 0.039$).

Finally, a marginal effect was observed for having treated someone of the same age badly online (OR = 1.66, 95% CI [0.92, 2.99], $p = 0.093$). Other indicators of adult supervision did not show significant effects (all $ps > 0.60$).

4.4. Predicted Probabilities

Figure 3 displays the relations between levels of cyberbullying victimization and estimated probabilities stratified by caregiver supervision categories. Differences were evident at the lowest levels of victimization but converged as severity increased, consistent with the negative quadratic effect identified in the regression model.

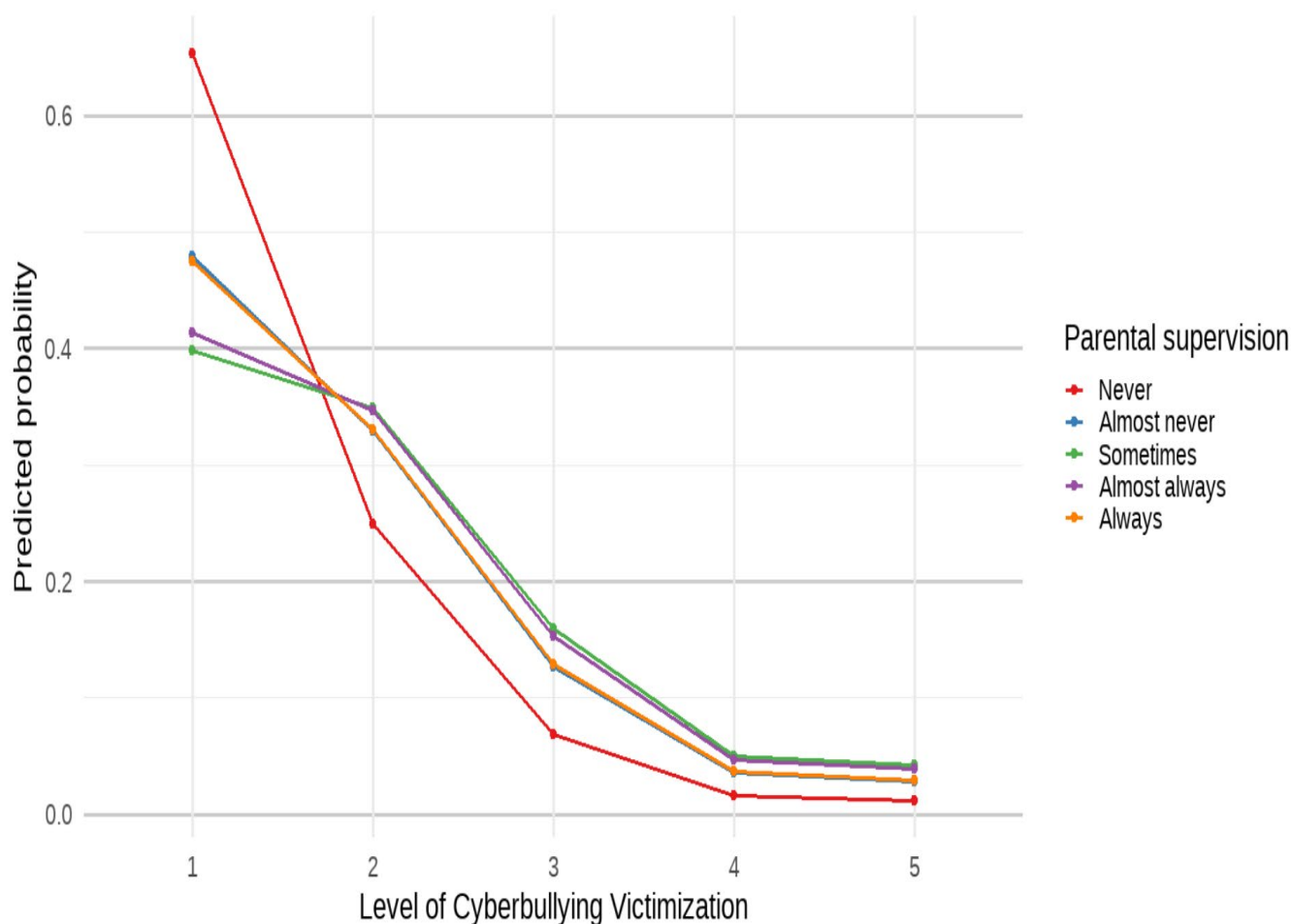


Figure 3. Predicted probabilities of cyberbullying by caregiver supervision.

Figure 4 presents the estimated probabilities of victimization levels as a function of teacher support categories. Differences were stronger at lower levels of victimization and attenuated at higher levels.

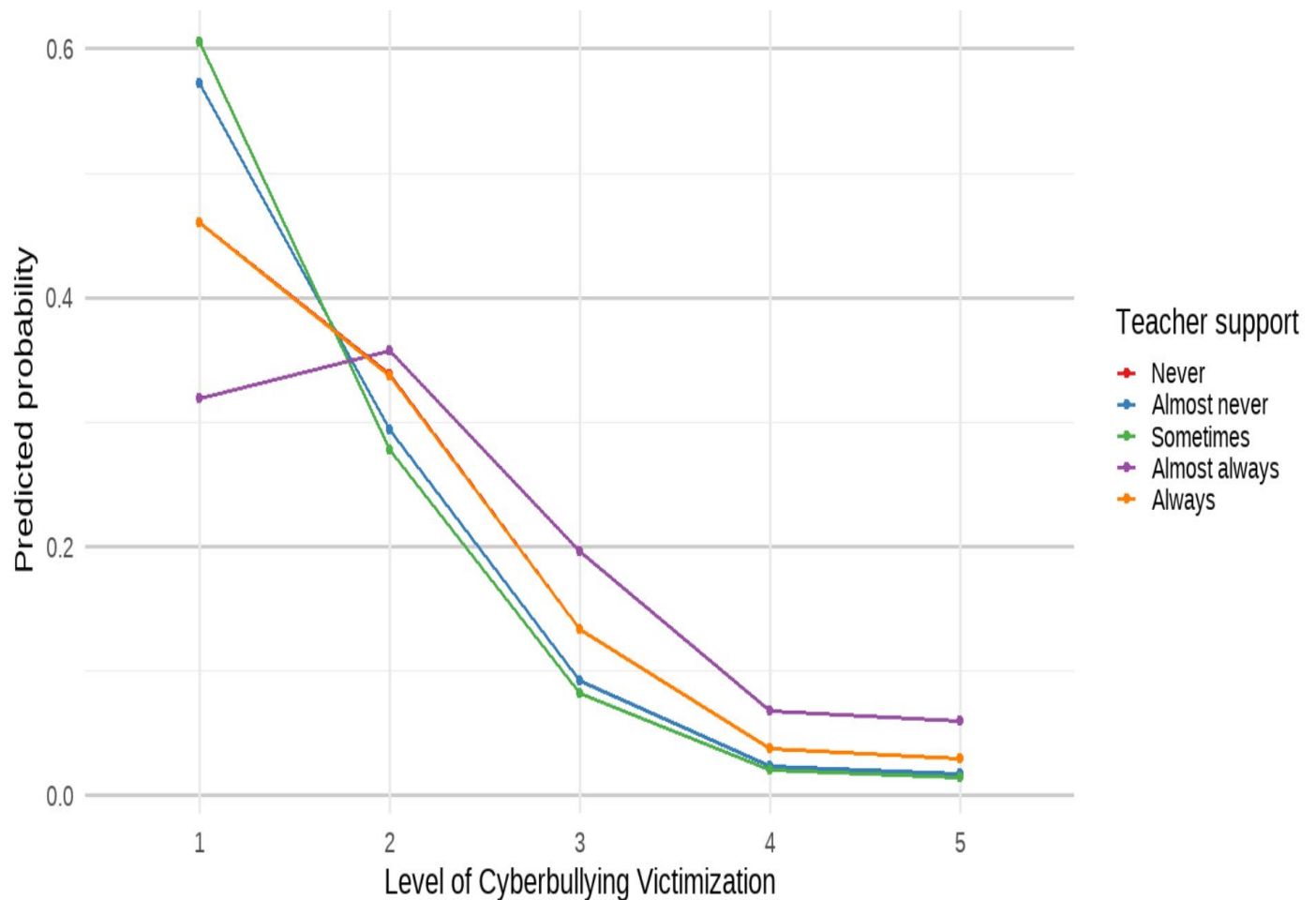


Figure 4. Predicted probabilities of cyberbullying by teacher support.

5. Discussion

Among respondents who reported peer victimization, 13.2% met the study criterion for cyberbullying victimization. This prevalence is considered modest when compared to the international ranges identified by Zhu et al., who report victimization levels between 14% and 57% globally [4]. This significant variability reinforces the position of the OECD [2] and findings by Dang et al. [23] regarding the inherent difficulty of measuring this phenomenon through self-reports alone, as children's internal response processes may differ from objective behavioral measures. No statistically significant association was observed for nationality. However, given the small proportion of non-Costa Rican participants in the sample, this finding should be interpreted cautiously because the analysis may have had limited power to detect meaningful differences.

5.1. Effects of Age and Sex

Among youth who reported peer victimization, older age was associated with higher levels of cyberbullying victimization. This finding suggests that, within already-victimised adolescents, older youth may be more likely to experience victimization through digital channels.

This observation aligns with the theoretical framework underpinning this study, as well as with findings from Aizenkot and Morillo Puente and Hernández [18,19]. As

adolescents gain independence, their time spent online increases, raising their visibility to motivated offenders. However, this finding partially contrasts with Camerini et al. [13], who suggest that victimization peaks around age 14 and subsequently decreases.

In the descriptive analysis of this study, males reported higher levels of cyberbullying victimization (17.1%) compared to females (7.8%). However, sex did not emerge as a significant predictor in the ordinal logistic regression model. This lack of statistical significance in the multivariate model mirrors the highly inconsistent and controversial findings across global research regarding which sex is more vulnerable. For instance, Aizenkot, in a large-scale study involving more than 5000 students, similarly found no significant differences in victimization levels between sexes [18]. In contrast, Zhu et al. suggest that females may face heightened risk due to greater engagement with social media platforms [4].

These results align with the perspective that sex differences in victimization are often associated with the specific forms of digital aggression experienced. Puente and Hernández found that boys in Latin American contexts may experience higher levels of online exclusion [19], whereas Zhu et al. and Wright and Wachs reported that girls are more frequently targeted by indirect forms of harassment, such as rumor spreading [4,24]. Furthermore, cultural norms associated with traditional masculinity may shape self-reports of victimization, as boys are often less likely to disclose experiences involving fear or vulnerability [25].

It is important to emphasize that this study exclusively evaluated victimization and did not examine cyber-perpetration as an outcome variable. Nevertheless, the higher descriptive rates of victimization among males should be viewed through the lens of the bully–victim cycle identified in prior research. As noted by Baldry et al., males are consistently more likely to become involved in online aggression [20]. This involvement may contribute to a cycle in which the roles of aggressor and victim overlap, suggesting that for some males in this sample, victimization may be part of a broader pattern of reciprocal peer conflict. Future research examining victimization and perpetration simultaneously within the Costa Rican context would be necessary to determine whether these victims are also engaging in retaliatory aggressive behaviors.

5.2. Effects of Caregivers (Parents and Teachers)

The tested model revealed a complex relationship with supervision. A significant linear effect of caregiver supervision was observed in reducing risk, supporting the role of the capable guardian within the theoretical model. Paradoxically, students who reported no supervision showed a high probability of never having been victimized. This pattern reflects what Baldry et al. and Moretti and Herkovits describe as reactive supervision, whereby parental control intensifies only after an adverse event has occurred [6,20].

Excessive or “helicopter” supervision may be counterproductive, as minors may conceal online problems when adults are perceived as intrusive or lacking digital competence [3,20]. In contrast, teacher support emerged as a critical protective factor at lower levels of aggression, acting as a moral anchor capable of mitigating mimetic dynamics of exclusion within school environments [6].

An effective proactive approach should be authoritative and grounded in open communication and trust established through offline relationships. Evidence indicates that high levels of trust in real-life relationships function as a protective factor, significantly reducing the likelihood of cyberbullying victimization [18]. Accordingly, implementation efforts should prioritize equipping caregivers to act as proactive guardians who foster communicative environments that encourage early disclosure of negative online experiences.

Proactivity must also be understood as an institutional responsibility in which teachers play a key role. Beyond identifying overt bullying behaviors, educators can serve as moral anchors capable of disrupting mimetic dynamics within school settings [6]. Proactive

institutional guardianship involves establishing clear and transparent policies regarding internet use and cyberbullying [18], as well as counteracting the spectator effect commonly observed in digital environments where responsibility is diffused. Training students to intervene and support peers can strengthen collective responsibility [6,18], while empathy-focused education may reduce moral disengagement and increase awareness of the long-term emotional consequences of harmful online behavior [26].

A sustainable model of guardianship recognizes that adults cannot always be present in all digital spaces [12]. Consequently, a central goal of proactive guardianship is to support children in becoming their own guardians over time [18]. This process includes strengthening digital literacy, such as recognizing risky behaviors like anonymous information sharing [3,18], and promoting self-regulation and emotional competence to interrupt the bully–victim cycle whereby distress or prior victimization may contribute to aggressive behavior toward others [21,22]. Although parental and teacher supervision remains an important deterrent [19], its effectiveness depends largely on its timing and quality. By fostering proactive digital citizenship and trust-based relationships, guardians can reduce the convergence of motivated offenders and suitable targets in online spaces before harm occurs [18].

5.3. Effects of Negative Emotional Experiences Online and Online Aggressive Behavior

Negative emotional experiences associated with internet use emerged as one of the most important correlates of cyberbullying victimization in the present study. Adolescents who more frequently reported encountering online situations that made them feel bad were more likely to report higher levels of cyberbullying victimization. This finding is consistent with previous research indicating that emotional distress is closely intertwined with experiences of online aggression and may serve both as a marker of exposure to harmful digital environments and as an indicator of vulnerability to repeated victimization [5,21]. Studies have consistently shown that cyberbullying victims experience elevated levels of anxiety, depression, emotional distress, and psychological maladjustment, suggesting that negative emotional reactions are not merely consequences of victimization but may also reflect ongoing involvement in harmful online interactions [5,21]. Furthermore, Moretti and Herkovits argue that cyberbullying should be understood as a complex psychosocial phenomenon in which emotional suffering is central to both the experience and persistence of victimization [6].

The nonlinear pattern observed in the present study suggests that the association between emotional distress and cyberbullying victimization is more complex than a simple linear increase. This finding may indicate that emotional strain operates as both a consequence and a reinforcing mechanism of victimization. Repeated exposure to distressing online interactions may reduce coping resources, increase perceived vulnerability, and make it more difficult for adolescents to disengage from harmful digital environments. Such an interpretation is consistent with socio-cognitive perspectives emphasizing the reciprocal relationship between psychological well-being and online experiences [6,21]. Future longitudinal research is needed to clarify whether negative emotional experiences primarily precede victimization, result from it, or reflect a dynamic process in which both mechanisms operate simultaneously [13,21].

Online aggressive behavior toward peers also showed a positive association with cyberbullying victimization, although the effect only reached marginal statistical significance. Nevertheless, the direction of the association aligns with the extensive literature on the bully–victim overlap, which demonstrates that the roles of aggressor and victim frequently coexist in digital environments [13,22]. Adolescents who engage in aggressive online behavior may become involved in cycles of retaliation, reciprocal hostility, and escalating peer conflict, thereby increasing their own risk of subsequent victimization. Camerini et al. identified this overlap as one of the most consistent findings in cyberbullying research,

highlighting that many young people alternate between perpetrator and victim roles rather than occupying a single position [13].

This relationship may also be understood through socio-cognitive mechanisms such as moral disengagement. The anonymity, invisibility, and asynchrony characteristic of digital communication can facilitate aggressive behaviors by reducing feelings of guilt and personal responsibility [26]. Over time, these processes may contribute to patterns of reciprocal aggression in which adolescents who victimize others become targets themselves. Moretti and Herkovits similarly argue that digital environments can foster cycles of aggression through mechanisms that weaken empathy and normalize harmful interactions among peers [6]. Although the effect observed in the present study should be interpreted cautiously due to its marginal significance, it nonetheless provides partial support for the bully–victim cycle described in previous research and suggests that prevention efforts should address both victimization and perpetration simultaneously rather than treating them as entirely separate phenomena [13,22].

5.4. Limitations

The findings of this study should be interpreted considering several limitations. First, although the data were drawn from a nationally representative survey, the cross-sectional design precludes causal inference. The observed associations should therefore be interpreted as correlational rather than temporal or causal. Longitudinal studies are needed to clarify developmental trajectories and the directionality of these relationships [13,26].

Second, this study relied on self-reported measures, which are susceptible to recall bias, social desirability, and individual differences in the interpretation of online experiences. These concerns are particularly relevant in cyberbullying research, where perceptions of intent, repetition, and harm may vary across respondents [4,23]. Additionally, most of the measures included in this study consisted of single-item indicators rather than validated multi-item scales. This limitation may affect measurement precision and should be considered when interpreting the findings and comparing them with studies that employ multi-item measures.

Third, although supplementary analyses controlled for smartphone ownership and social media use, the models did not include broader indicators of digital exposure such as time spent online, platform-specific engagement, or characteristics of online networks. Future research should further examine the extent to which developmental factors and online opportunity structures jointly shape cyberbullying victimization.

Fourth, the survey structure required respondents to first report peer victimization before receiving the cyberbullying questions. Consequently, all multivariate analyses were conducted on a subsample of youth who had experienced peer victimization rather than on the full nationally representative sample. The findings should therefore be interpreted as correlates of cyberbullying victimization within a victimized subgroup and may not generalize to all Costa Rican children and adolescents. A further limitation concerns the wording of the survey item, which referred to victimization by “a person of your age.” Respondents may have interpreted this phrase differently, ranging from classmates of the same age to peers several years older or younger. Consequently, the study could not distinguish cyberbullying perpetrated by exact age peers from that perpetrated by older or younger adolescents.

5.5. Future Research Directions

Future research should also examine negative emotions as both antecedents and consequences of cyberbullying, given that distress associated with online experiences emerged as one of the correlates of persistent victimization in the present study. Additionally, evaluating the effectiveness of emotional resilience and socio-emotional learning interventions may help clarify strategies for reducing moral disengagement and online aggression [21,22].

Future research should also examine the protective role of strong family and peer relationships. Supportive offline relationships may strengthen adolescents' sense of belonging and resilience, potentially reducing vulnerability to harmful online interactions.

6. Conclusions

Overall, cyberbullying victimization affected a meaningful proportion of adolescents in Costa Rica, underscoring its continued relevance as a public health and educational concern. Among adolescents who had already experienced peer victimization, older adolescents showed higher levels of cyberbullying victimization, whereas sex differences were modest and inconsistent once other factors were taken into account. The findings further suggest that cyberbullying is shaped by a complex interplay of individual, relational, and contextual influences. Adult supervision and teacher support exhibited nonlinear protective effects, with their influence appearing strongest at lower levels of victimization and diminishing as victimization became more severe. Negative emotional experiences online emerged as one of the correlates of victimization, highlighting the central role of emotional vulnerability in adolescents' online experiences. In addition, evidence of overlap between victimization and aggressive online behavior points to the reciprocal dynamics often observed within the bully–victim cycle. Taken together, these findings support a multidimensional understanding of cyberbullying that extends beyond individual characteristics to encompass emotional well-being, social relationships, and the quality of adult guidance. Efforts to prevent cyberbullying should therefore combine emotional support, digital citizenship education, and proactive forms of family and school-based guardianship that foster safe, supportive, and resilient online environments for young people.

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