International Journal of Cyber Security, Cloud & Engineering Research (IJCSCER)
ISSN (Online): 3143-9748
Volume-3 Issue-4 || Oct – Dec 2026 || PP. 19 – 25 https://ijcscer.org

The Relationship Between Cyberbullying and Academic Performance

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http://www.ijcscer.org/ || Vol. 3 No. 4 (2026): October Issue

Date of Submission: 10-09-2026	Date of Acceptance: 24-09-2026	Date of Publication: 11-10-2026

Abstract— Cyberbullying is a widespread form of peer aggression among adolescents, yet the pathways linking it to school achievement remain insufficiently tested. This study examined the relationship between cyberbullying victimization and academic performance among 640 students in grades 8 to 12 from eight secondary schools. Victimization was measured with a 12-item frequency scale, psychological distress with the Kessler K6, and academic performance and absenteeism through school records. In total, 29.8% of students reported at least one cyberbullying incident in the previous six months. Mean end-of-term scores fell with victimization frequency, from 73.7% among non-victims to 68.2% for occasional and 62.8% for frequent victims, $F(2, 637) = 29.93$, $p < .001$, $\eta^2 = .086$. Victimization correlated negatively with performance ($r = -.31$) and remained a significant predictor after controlling for gender, grade, socioeconomic status, and online hours ($\beta = -.27$). Psychological distress and school absenteeism together accounted for 61.1% of the total association. The findings suggest that cyberbullying harms achievement largely through emotional and attendance pathways, which schools can monitor and address.

Keywords: cyberbullying, victimization, academic performance, psychological distress, school absenteeism, adolescents, mediation

Introduction

Adolescents now spend a large part of their social lives online, and peer conflict has followed them there. Cyberbullying, the repeated use of digital media to harass, threaten, or humiliate another person, can reach a victim at any hour, can be witnessed by large audiences, and is often invisible to teachers and parents. For schools, the concern extends beyond wellbeing: students who are targeted online must still attend class, concentrate, and complete assessments.

Research has documented the prevalence and psychological costs of cyberbullying extensively (Kowalski et al., 2014; Fisher et al., 2016), but evidence on academic consequences is thinner and less consistent. A meta-analysis of adolescent cyber-victimization concluded that victims show lower achievement and higher absenteeism than their peers (Gardella et al., 2017), yet it remains unclear how this relationship arises. If distress and missed school explain much of the association, then interventions that detect and treat these downstream problems may protect achievement even when the bullying itself cannot be stopped immediately.

This study therefore asks three questions. Is cyberbullying victimization associated with lower academic performance? Does the association persist after accounting for demographic and contextual factors? And do psychological distress and

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school absenteeism explain part of the relationship? The study uses school-record performance data rather than self-reported grades, which reduces common-method bias, and tests both mediators within a single model. The paper reviews related literature, states the hypotheses, describes the methodology, presents results, and discusses implications and limitations.

Literature Review

Nature and prevalence of cyberbullying

Olweus (1993) defined bullying as repeated, intentional aggression involving an imbalance of power, and later work adapted this definition to electronic contexts. Smith et al. (2008) examined cyberbullying among secondary school pupils and showed that it takes forms such as abusive messages, calls, and image-based harassment and that its impact can be serious. Prevalence estimates vary widely. A meta-analysis of 80 studies found that traditional bullying was about twice as common as cyberbullying, with rates of roughly 35% and 15%, and that the two forms were strongly correlated (Modecki et al., 2014). A systematic review of US adolescents likewise highlighted inconsistent measurement as a major source of variation (Selkie et al., 2016). Juvonen and Gross (2008) found that most adolescents in their online survey had experienced at least one cyberbullying incident in the previous year and that few told adults, which implies that schools often remain unaware of cases.

Psychological and health consequences

A critical review and meta-analysis by Kowalski et al. (2014) reported that stress and suicidal ideation were among the strongest correlates of cyberbullying victimization. Fisher et al. (2016) synthesized 239 effect sizes from 55 reports covering 257,678 adolescents and found significant positive relationships between cybervictimization and internalizing and externalizing problems, with correlations between .14 and .34. In a regional census of high school students, Schneider et al. (2012) linked cyberbullying and school bullying to psychological distress, and Nixon (2014) reviewed the adverse effects of cyberbullying on adolescent health and wellbeing. Tokunaga (2010) synthesized the victimization literature and noted associations with a range of negative psychosocial and school outcomes. Faucher et al. (2014) extended concern to university students and documented gendered experiences and impacts.

Academic outcomes and possible mechanisms

The most direct evidence comes from Gardella et al. (2017), whose meta-analysis of studies on adolescents aged 12 to 17 found that cyber-victimization was associated with lower academic achievement and higher absenteeism, regardless of gender, race, or age. Two mechanisms are plausible. First, distress, rumination, and sleep disruption can impair concentration and motivation, consistent with the strong links between victimization and internalizing symptoms (Fisher et al., 2016; Kowalski et al., 2014). Second, targeted students may avoid school to escape peers who witnessed or took part in the harassment, which reduces instructional time. Because cyberbullying occurs outside school hours and school grounds, its academic consequences may be less visible to staff. This also means that a student's declining grades may be the first visible sign that something is wrong, which makes it important to understand how far distress and missed school account for the decline.

In summary, prior work establishes that cyberbullying is common, psychologically harmful, and associated with weaker school outcomes. Fewer studies, however, test distress and absenteeism together as parallel pathways using objective school records, and this is the gap the present study addresses.

Research Questions and Hypotheses

The study addressed three research questions: whether cyberbullying victimization is related to academic performance, whether the relationship holds after controlling for covariates, and whether it is mediated by psychological distress and school absenteeism. Four hypotheses were tested. H1: Students who experience more frequent cyberbullying have lower academic performance. H2: Victimization is negatively associated with performance after controlling for gender, grade, socioeconomic status, and online hours. H3: Psychological distress and school absenteeism each partially mediate the relationship. H4 (exploratory): The prevalence of victimization differs between female and male students.

Methodology

Research design

A cross-sectional correlational survey design was used, combined with administrative school records. Figure 1 shows the conceptual model: victimization is expected to affect academic performance directly and indirectly through psychological distress and absenteeism, with demographic and contextual covariates controlled.

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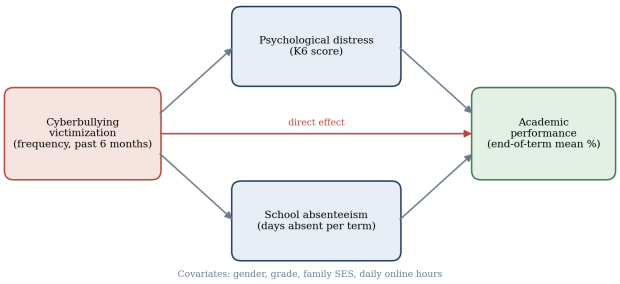


Figure 1. Conceptual model of the relationship between cyberbullying victimization and academic performance.

Participants and sampling

Eight secondary schools were selected, and within each school classes from grades 8 to 12 were chosen by stratified random sampling. Of 712 invited students, 640 provided complete data (response rate 89.9%). The sample was 52.3% female, with a mean age of 15.1 years (SD = 1.4) (Table 1).

Table 1. Sample characteristics (N = 640)

Characteristic	n	%
Female	335	52.3
Male	305	47.7
Grade 8	120	18.8
Grade 9	130	20.3
Grade 10	134	20.9
Grade 11	126	19.7
Grade 12	130	20.3
Age, M (SD)	15.1 (1.4)	—
Daily recreational online time (h), M (SD)	4.2 (2.0)	—

Measures

Cyberbullying victimization was measured with a 12-item scale asking how often in the previous six months the student had experienced behaviors such as insulting messages, exclusion, threats, impersonation, or non-consensual sharing of private content (0 = never, 1 = once or twice, 2 = monthly, 3 = weekly, 4 = almost daily). Internal consistency was high (Cronbach's $\alpha = .91$). For group comparisons, students were classified as non-victims (no incident), occasional victims (highest response once or twice), or frequent victims (at least one behavior monthly or more often). Psychological distress was measured with the six-item Kessler K6 scale (range 0 to 24; Kessler et al., 2002; $\alpha = .88$). Academic performance was the end-of-term mean percentage across core subjects, and absenteeism was the number of days absent in the term, both taken from school records. Gender, grade, a standardized family socioeconomic index, and daily recreational online hours served as covariates.

Procedure and ethical considerations

Questionnaires were completed anonymously in class under supervision, and responses were linked to school records through coded identifiers. Parental consent and student assent were obtained, participation was voluntary, and counseling contacts were provided to all participants. The 72 invited students not included in the final sample declined, were absent on the survey day, or returned incomplete questionnaires; no missing values were imputed. School records were extracted after the end of the term so that performance and absenteeism data covered the same period as the survey items on distress.

Data analysis

Descriptive statistics and chi-square tests summarized prevalence. One-way ANOVA with Tukey post hoc comparisons tested differences across victimization groups (H1), with eta squared as the effect size. Pearson correlations examined bivariate relationships. Hierarchical multiple regression entered covariates in Model 1 and victimization in Model 2 (H2). A parallel mediation model with 5,000 bootstrap resamples estimated standardized indirect effects through distress and absenteeism (H3). Before analysis, assumptions were checked: residuals were approximately normal, variances were homogeneous across victimization groups (Levene's test, $p = .68$), and multicollinearity was not a concern (all variance inflation factors below 1.30). The significance level was set at $\alpha = .05$, and analyses were run in Python using SciPy and statsmodels.

Results

Prevalence and forms of victimization

Of the 640 students, 191 (29.8%) reported at least one incident in the previous six months: 118 (18.4%) were occasional victims and 73 (11.4%) were frequent victims. Prevalence was 32.2% among female students and 27.2% among male students, a difference that was not statistically significant, $\chi^2(1) = 1.93$, $p = .165$, so H4 was not supported. Among victims, offensive messages were most common (71.2%), followed by exclusion or rumours on social media (58.6%) and threats (30.4%) (Figure 2). Students could report more than one form.

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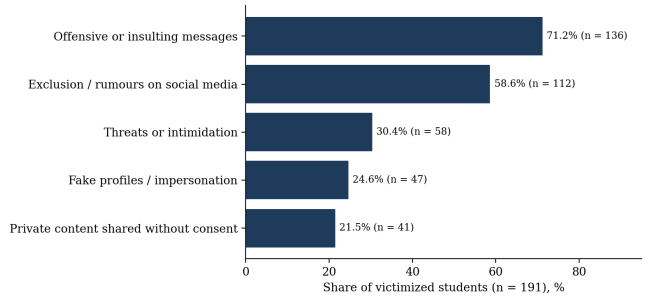


Figure 2. Forms of cyberbullying experienced by victimized students (multiple responses allowed).

Group differences in academic performance

Academic performance differed across groups (Table 2; Figure 3), $F(2, 637) = 29.93$, $p < .001$, $\eta^2 = .086$, a medium effect. Tukey comparisons showed that non-victims outperformed occasional victims by 5.5 points ($p < .001$) and frequent victims by 10.9 points ($p < .001$), and that occasional victims outperformed frequent victims by 5.4 points ($p = .009$). Distress and absenteeism rose in the opposite direction: mean K6 scores increased from 6.1 to 8.9 to 12.3, $F(2, 637) = 72.53$, $p < .001$, and mean days absent from 2.4 to 3.6 to 5.9, $F(2, 637) = 72.37$, $p < .001$. H1 was supported.

Table 2. Academic performance, distress, and absenteeism by victimization group, M (SD)

Group	n	Score (%)	K6 distress	Days absent	% of sample
No victimization	449	73.7 (12.1)	6.1 (4.2)	2.4 (2.1)	70.2
Occasional	118	68.2 (12.4)	8.9 (4.6)	3.6 (2.6)	18.4
Frequent	73	62.8 (12.9)	12.3 (5.0)	5.9 (3.4)	11.4
Total	**640**	**71.4 (12.8)**	**7.3 (4.8)**	**3.0 (2.6)**	**100.0**

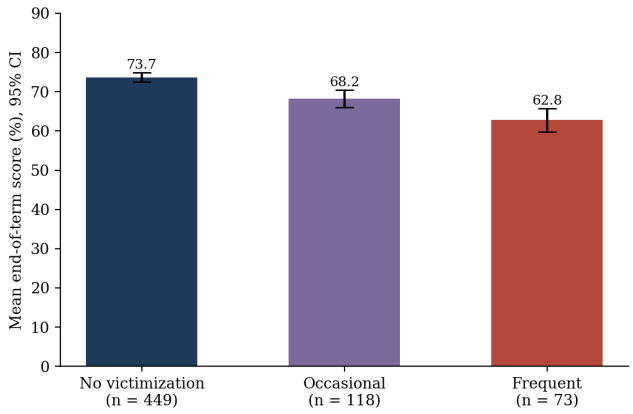


Figure 3. Mean end-of-term score by cyberbullying victimization group (error bars show 95% confidence intervals).

Correlations and regression

Victimization score was negatively correlated with academic performance, $r(638) = -.31$, $p < .001$, 95% CI [−.38, −.24], and positively correlated with distress and absenteeism (Table 3). Distress and absenteeism were both negatively related to performance.

Table 3. Means, standard deviations, and Pearson correlations (N = 640)

Variable	M (SD)	1	2	3	4
1. Victimization score (0–4)	0.30 (0.58)	—			
2. Psychological distress (K6)	7.3 (4.8)	.46	—		
3. Days absent	3.0 (2.6)	.38	.33	—	
4. Academic performance (%)	71.4 (12.8)	−.31	−.36	−.34	—

Note. All correlations are significant at $p < .001$.

In the hierarchical regression (Table 4), covariates explained 6% of the variance in performance. Adding victimization increased explained variance to 12%, $\Delta R^2 = .06$, $F(1, 634) = 43.23$, $p < .001$, and victimization was a significant negative predictor ($\beta = -.27$, $p < .001$), supporting H2. Family socioeconomic status was the strongest covariate ($\beta = .17$), female students scored higher than males, and more daily online hours predicted lower scores.

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Table 4. Hierarchical regression predicting academic performance (standardized β)

Predictor	Model 1	Model 2
Gender (female = 1)	0.11**	0.10**
Grade	−0.08*	−0.07*
Family SES index	0.17***	0.15***
Daily online hours	−0.12**	−0.07
Cyberbullying victimization	—	−0.27***
R^2	0.06	0.12
ΔR^2	—	0.06***

Note. * p < .05, ** p < .01, *** p < .001.

Mediation analysis

Victimization predicted higher distress (a1 = .46) and more absenteeism (a2 = .38), and both mediators predicted lower performance (b1 = −.23; b2 = −.22). The direct effect of victimization remained significant but was reduced to c′ = −.12 (p = .003) from a total effect of c = −.31. Both indirect effects were significant (Table 5; Figure 4): distress accounted for 34.1% and absenteeism for 27.0% of the total effect, together 61.1%. Overall the model explained 19.5% of the variance in academic performance. H3 was supported, with partial mediation.

Table 5. Standardized direct and indirect effects of victimization on academic performance

Effect	β	95% bootstrap CI	% of total
Total effect (c)	−0.310	—	100.0
Direct effect (c′)	−0.120	—	38.9
Indirect via psychological distress	−0.106	[−0.145, −0.071]	34.1
Indirect via absenteeism	−0.084	[−0.119, −0.054]	27.0
Total indirect	−0.189	[−0.238, −0.145]	61.1

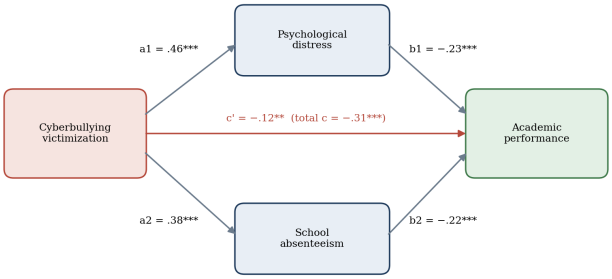


Figure 4. Parallel mediation model with standardized path coefficients (** p < .01, *** p < .001).

Discussion

Nearly three in ten students had experienced cyberbullying in the previous six months, and the more frequent the victimization, the lower the academic performance. The size of the gap between frequent victims and non-victims, almost 11 percentage points, is educationally meaningful. These results agree with the meta-analytic conclusion that cyber-victimization is associated with lower achievement and higher absenteeism (Gardella et al., 2017), and the prevalence observed lies within the range expected given the measurement variation described in earlier reviews (Modecki et al., 2014; Selkie et al., 2016).

The size of the differences is worth stating in standardized terms. The 10.9-point gap between frequent victims and non-victims equals about 0.85 standard deviations of the overall score distribution, and the 5.5-point gap for occasional victims equals about 0.43 standard deviations. A gradient of this kind, in which even occasional victimization is associated with lower scores, suggests that schools should not wait for severe or persistent cases before offering support.

The mediation results clarify why this happens. Psychological distress and absenteeism together accounted for roughly three-fifths of the total association, consistent with research linking victimization to internalizing problems (Fisher et al., 2016; Kowalski et al., 2014; Schneider et al., 2012). Because a significant direct effect remained, other mechanisms, such as sleep loss, reduced classroom participation, or distraction during study time, are likely at work and were not measured. The regression also shows that victimization predicted performance over and above socioeconomic status and gender, so the association cannot be reduced to background disadvantage. The absence of a significant gender difference in prevalence suggests that prevention should not be targeted at one gender alone, although this exploratory finding needs replication.

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Daily online hours lost significance once victimization was entered into the regression, which is consistent with the interpretation that exposure to harassment, rather than screen time itself, accounts for the weaker performance of heavy users in this sample. This should be tested with longitudinal data.

Two features of the design strengthen confidence in these results. Performance and absenteeism were drawn from school records rather than self-reports, so the associations are not inflated by students rating their own grades and experiences in the same questionnaire. In addition, both mediators were tested in one model, which showed that distress and absenteeism contribute almost equally to the total association. Taken together, the findings support treating emotional wellbeing and attendance as joint targets in school responses to cyberbullying rather than focusing on either one alone.

Practical Implications

Schools can act on both pathways. Attendance data and short distress screening tools can serve as early indicators of students who may be victimized, which matters because victims rarely tell adults (Juvonen & Gross, 2008). Confidential reporting channels, counseling access, and rapid response to repeated absences would address the mediators identified here. Teachers can also be prepared to recognize sudden declines in performance as a possible sign of online harassment and to coordinate with families, since incidents largely occur outside school hours.

Limitations

The cross-sectional design prevents causal conclusions, and the relationship may be partly reciprocal, as students with weaker performance or lower social standing may be more likely to be targeted. Victimization and distress were self-reported and may be subject to recall and shared-method bias. Traditional bullying was not measured, so some of the observed effect may reflect overlapping forms of peer aggression, which are known to be strongly correlated (Modecki et al., 2014). The sample came from eight schools, which limits generalizability.

Future Research Directions

Longitudinal designs should test the temporal order of victimization, distress, absenteeism, and achievement. Future studies should measure traditional bullying and perpetration alongside cyberbullying, examine additional mediators such as sleep and school belonging, and evaluate whether school-based interventions that reduce victimization also improve academic outcomes.

Conclusion

Cyberbullying victimization was common in this sample and was associated with significantly lower academic performance in a graded pattern. The association persisted after controlling for gender, grade, socioeconomic status, and online hours, and about 61% of it operated through higher psychological distress and increased absenteeism. Schools that monitor attendance and emotional wellbeing, and that make it easy for students to report online harassment, are better placed to protect both student health and academic progress.

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