

Improving Digital Safety Awareness and Knowledge of Cyberbullying Prevention Among Adolescents

Yosi Oktri¹, Hana Nurhanifah Budiadi¹, Susi Lestari¹, Tazkia Haniah¹, Alsya
Ramadani¹, Evi Permata Sari¹, Khaliza Khanifa¹

¹STIKes Budi Luhur Cimahi, Indonesia

ABSTRACT

The rapid growth of internet and social media use has increased adolescents' exposure to both opportunities and digital risks. This community service activity aimed to improve students' knowledge and awareness of digital safety and cyberbullying prevention through interactive education. Seven students from SMA Budi Luhur Cimahi participated in a one-group pre-test and post-test activity using presentation materials, leaflets, discussion, and question-and-answer sessions. Before education, 5 of 7 students (71.4%) were in the good knowledge category, 1 (14.3%) in the fair category, and 1 (14.3%) in the poor category. After education, 6 of 7 students (85.7%) were in the good category and 1 (14.3%) in the fair category, with no student in the poor category. Because of the very small sample, immediate post-test, and descriptive analysis without an inferential test, the findings indicate a short-term descriptive improvement in program knowledge categories rather than established effectiveness or a reduction in cyberbullying behavior.

Keywords: digital safety; cyberbullying; adolescents; digital literacy

Corresponding Author

Susi Lestari

STIKes Budi Luhur Cimahi

ssilstri@gmail.com

INTRODUCTION

The development of information and communication technology has changed how adolescents communicate, learn, and access information. Digital platforms provide educational and social benefits, but they also expose users to risks when privacy, communication ethics, and online safety are not well understood (Nickerson & Fredrick, 2026).

Cyberbullying refers to intentional harmful behavior carried out through electronic devices or digital platforms, including insulting comments, spreading rumors or personal information, sharing photos or videos without permission, excluding individuals from online groups, and sending threatening or degrading messages (Tokunaga, 2010). Such experiences may be associated with anxiety, stress, low self-esteem, social isolation, and other mental health concerns (Li et al., 2024; Nickerson & Fredrick, 2026).

Evidence-based reviews identify cyberbullying as an important concern for children and adolescents and emphasize the need for awareness, support, digital citizenship, and safe online practices (Hutson et al., 2018; Nickerson & Fredrick, 2026). Digital safety includes protecting personal information, recognizing online risks, maintaining a responsible digital footprint, and communicating respectfully. These competencies

are particularly relevant for adolescents, who are frequent users of social media and internet-based technologies.

Preliminary observations among students of SMA Budi Luhur Cimahi indicated that some students had limited awareness of personal data protection, digital communication ethics, and strategies for responding to cyberbullying. The community service program was therefore designed to provide interactive education on digital safety, forms and impacts of cyberbullying, privacy protection, and responsible social media use.

The activity aimed to describe immediate changes in students' knowledge categories after the educational session. The evaluation did not measure cyberbullying incidence or long-term online behavior; therefore, prevention is discussed as the educational content of the program rather than a directly measured outcome.

METHODS

This community service activity used a one-group pre-test and post-test educational approach. Seven students from SMA Budi Luhur Cimahi participated on April 23, 2026. Educational media included presentation slides, leaflets, interactive discussion, and question-and-answer activities. The content covered digital safety, forms and consequences of cyberbullying, personal data privacy, digital communication ethics, and responsible social media use.

The activity consisted of preparation, pre-test, interactive education, post-test, and descriptive data analysis. Frequencies and percentages were used to summarize the knowledge categories before and after education. The available activity documentation did not report on the questionnaire count, category cut-offs, or psychometric testing; therefore, the categories are treated as program-specific descriptive indicators and no inferential claim is made.

RESULTS AND DISCUSSION

The activity involved seven students from SMA Budi Luhur Cimahi. Four students (57.1%) were aged 15-16 years and three (42.9%) were aged 17-18 years. Four students were in grade X and three were in grade XI.

Table 1. Characteristics of Participants

Characteristic	n	%
Age 15-16 years	4	57.1
Age 17-18 years	3	42.9
Grade X	4	57.1
Grade XI	3	42.9

The distribution of knowledge categories shifted after the educational session. The good category increased from 5 of 7 students (71.4%) to 6 of 7 (85.7%), while the poor category decreased from 1 of 7 (14.3%) to 0. The fair category remained one student.

Table 2. Students' Knowledge Categories Before and After Education

Knowledge category	Pre-test n (%)	Post-test n (%)
Good	5 (71.4%)	6 (85.7%)
Fair	1 (14.3%)	1 (14.3%)
Poor	1 (14.3%)	0 (0.0%)
Total	7 (100%)	7 (100%)

The descriptive shift is consistent with the educational purpose of providing students with clear information on protecting personal data, recognizing risky online interactions, and responding to cyberbullying. Systematic reviews and meta-analyses indicate that educational and school-based interventions can improve cyberbullying-related knowledge and may reduce cyberbullying perpetration and victimization, although effect sizes are generally small and depend on intervention characteristics (Ng et al., 2022; Polanin et al., 2022; Henares-Montiel et al., 2023). However, this program did not include a comparison group or inferential analysis, so the observed category changes cannot be attributed with certainty to the intervention.

The interactive format may have supported engagement because students were able to ask questions and relate the material to everyday online situations. The program emphasized respectful communication, privacy protection, responsible sharing, and help-seeking. These components are consistent with intervention approaches that include cyberbullying education, communication and social skills, coping strategies, and digital citizenship (Hutson et al., 2018; Doty et al., 2022). These messages are relevant to broader digital safety efforts, but the evaluation measured only immediate knowledge categories and did not directly assess online behavior, cyberbullying victimization, or perpetration.

Several limitations should be considered. The sample consisted of only seven students, the post-test was conducted immediately after the activity, the instrument characteristics were not documented in the available report, and no longer-term behavioral outcome was measured. Future community service programs should involve more participants, document the instrument and score system, include follow-up assessment, and consider behavioral indicators or school-level monitoring where appropriate.

CONCLUSION

The digital safety and cyberbullying education activity among seven students at SMA Budi Luhur Cimahi was followed by a descriptive shift toward higher knowledge categories: the good category increased from 71.4% to 85.7%, while the poor category decreased from 14.3% to 0%. Given the small sample and descriptive immediate evaluation, these findings should be interpreted as an initial program result rather than proof that the activity prevented or reduced cyberbullying. Continued digital literacy education and follow-up evaluation are recommended.

ACKNOWLEDGEMENTS

The authors would like to express their sincere gratitude to STIKes Budi Luhur Cimahi, SMA Budi Luhur Cimahi, the supervising lecturer, and all parties who contributed to and supported the implementation of this community service activity.

REFERENCES

- Doty, J. L., Girón, K., Mehari, K. R., Sharma, D., Smith, S. J., Su, Y.-W., Ma, X., Rijo, D., & Rousso, B. (2022). The dosage, context, and modality of interventions to prevent cyberbullying perpetration and victimization: A systematic review. *Prevention Science*, 23(4), 523–537. DOI: 10.1007/s11121-021-01314-8
- Henares-Montiel, J., Pastor-Moreno, G., Ramírez-Saiz, A., Rodríguez-Gómez, M., & Ruiz-Pérez, I. (2023). Characteristics and effectiveness of interventions to reduce cyberbullying: A systematic review. *Frontiers in Public Health*, 11, 1219727. DOI: 10.3389/fpubh.2023.1219727
- Hutson, E., Kelly, S., & Militello, L. K. (2018). Systematic review of cyberbullying interventions for youth and parents with implications for evidence-based practice. *Worldviews on Evidence-Based Nursing*, 15(1), 72–79. DOI: 10.1111/wvn.12257
- Li, C., Wang, P., Martin-Moratinos, M., Bella-Fernández, M., & Blasco-Fontecilla, H. (2024). Traditional bullying and cyberbullying in the digital age and its associated mental health problems in children and adolescents: A meta-analysis. *European Child & Adolescent Psychiatry*, 33(9), 2895–2909. DOI: 10.1007/s00787-022-02128-x
- Ng, E. D., Chua, J. Y. X., & Shorey, S. (2022). The effectiveness of educational interventions on traditional bullying and cyberbullying among adolescents: A systematic review and meta-analysis. *Trauma, Violence, & Abuse*, 23(1), 132–151. DOI: 10.1177/1524838020933867
- Nickerson, A. B., & Fredrick, S. S. (2026). Cyberbullying and mental health in children and adolescents. *Annual Review of Clinical Psychology*, 22(1), 559–586. DOI: 10.1146/annurev-clinpsy-061324-073435
- Polanin, J. R., Espelage, D. L., Grotzinger, J. K., Ingram, K., Michaelson, L., Spinney, E., Valido, A., El Sheikh, A., Torgal, C., & Robinson, L. (2022). A systematic review and meta-analysis of interventions to decrease cyberbullying perpetration and victimization. *Prevention Science*, 23(3), 439–454. DOI: 10.1007/s11121-021-01259-y
- Tokunaga, R. S. (2010). Following you home from school: A critical review and synthesis of research on cyberbullying victimization. *Computers in Human Behavior*, 26(3), 277–287. DOI: 10.1016/j.chb.2009.11.014