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Effectiveness of Teacher Empowerment for Bullying Detection and Adolescent Mental Health Promotion: A Mixed-Methods Study

Dian Rahmi¹✉, Rikayoni

¹ Academy of Nursing Baiturrahmah, Padang City, West Sumatra, Indonesia

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Abstract

Bullying is a major school-related problem that adversely affects adolescents' mental health, leading to anxiety, depression, social isolation, reduced academic performance, and self-harm. This study examined the effectiveness of a Teacher Empowerment Program in strengthening teachers' capacity for early bullying detection and adolescent mental health promotion in junior high schools in Padang City, Indonesia. A sequential explanatory mixed-methods design was employed, combining a quasi-experimental pretest–posttest control group study with qualitative Focus Group Discussions (FGDs) and in-depth interviews. Sixty teachers were assigned to intervention and control groups, while data from 70 students supported bullying and mental health indicators. The intervention included training on bullying identification, psychosocial indicators, supportive communication, and mental health promotion strategies. Quantitative data were analyzed using paired and independent t-tests, whereas qualitative data underwent thematic analysis. The intervention significantly improved teachers' knowledge, attitudes, and skills (all $p < 0.001$). Mean knowledge scores increased from 61.4 to 84.7, attitudes from 65.3 to 86.1, and skills from 59.7 to 83.6. Qualitative findings revealed that teachers considered the program practical and relevant, although limited time, administrative workload, and the absence of school-wide bullying standard operating procedures remained key challenges. The Teacher Empowerment Program effectively strengthened teachers' capacity to prevent bullying and promote adolescent mental health in schools.



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Corresponding Author:

✉ Dian Rahmi

Academy of Nursing Baiturrahmah, Padang City, West Sumatra, Indonesia

Email: dianrahmi284@gmail.com

1. INTRODUCTION

Bullying is a social problem that frequently occurs in schools and significantly affects the mental health of adolescents (Kumari et al., 2023). Adolescence is a developmental period vulnerable to mental health disorders owing to complex social and emotional pressures. Adolescents exposed to bullying are at risk of experiencing various negative impacts, such as depression, excessive anxiety, social withdrawal, decreased academic performance, self-harm, and suicide (Gunn & Goldstein, 2017). Untreated bullying has the potential to cause long-term mental health problems and reduce the quality of life of adolescents in the future (Chrysanthou & Vasilakis, 2020).

Global data also show a high prevalence of violence against children and adolescents. UNICEF reports that two out of three children aged 13–17 have experienced at least one form of violence during their lifetime, and most perpetrators are peers (Boyd-Rogers et al., 2024). In Indonesia, the incidence of bullying remains relatively high. Around 40% of adolescents report having experienced bullying at school, and 32% have been victims of physical violence. Research in Yogyakarta, Surabaya, and Jakarta shows that more than 66% of junior high school students experience bullying, with psychological violence the most prevalent, followed by verbal and physical violence (Afriani & Denisa, 2021).

The increase in bullying cases is also reflected in the most recent national data. The Indonesian Education Monitoring Network (JPPI) recorded 573 reports of violence in educational settings in 2024 (Safaat, 2023). The Indonesian Child Protection Commission (KPAI) reported 329 complaints of bullying in educational settings in 2023, with 20 cases resulting in fatalities, physical injuries, and severe psychological trauma (Annisa et al., 2022). These data demonstrate that bullying is a serious problem that requires systematic prevention and early detection efforts in schools.

Schools are strategic environments for bullying prevention, and teachers play a central role because they interact directly with students every day. Teachers serve not only as academic instructors but also as mentors for students' behavior and mental health. Through appropriate guidance and direction, bullying behavior can be prevented (Liu, 2023; Noviyanti et al., 2025). Studies have shown that teachers have limited knowledge, skills, and preparedness in detecting early signs of bullying and mental health problems in adolescents. To date, there has not been a structured, evidence-based, and proven teacher empowerment program for integrating early detection of bullying with the promotion of adolescent mental health (Ohrt et al., 2020). This highlights the need for an integrated approach that connects early bullying detection with adolescent mental health promotion, because identifying bullying without recognizing its psychosocial consequences may result in missed opportunities for early support and referral.

However, structured and evidence-based teacher empowerment programs that explicitly integrate these two functions remain limited. This gap indicates a need for an intervention that strengthens teachers' capacity to identify bullying and related psychosocial indicators while equipping them with appropriate communication, prevention, and referral skills. Therefore, this study aimed to develop and validate a teacher empowerment program and evaluate its initial effectiveness in improving teachers' knowledge, attitudes, and skills in the early detection of bullying and promotion of adolescent mental health in selected junior high schools in Padang, Indonesia.

2. METHODS

A sequential explanatory mixed methods design was adopted for this study, in which a quantitative phase was followed by a qualitative phase that deepened the understanding of intervention outcomes. The integration of quantitative and qualitative data was

conducted sequentially, in accordance with the sequential explanatory mixed-methods design. In the first phase, quantitative findings were used to identify changes in teachers' knowledge, attitudes, and skills following participation in the Teacher Empowerment Program. These quantitative findings subsequently informed the focus of the qualitative phase. In the second phase, qualitative data obtained through Focus Group Discussions (FGDs) and in-depth interviews were thematically analyzed to further explain the quantitative findings, particularly with regard to teachers' experiences, perceptions of the program, factors supporting the observed changes, and barriers to program implementation. During the final interpretation phase, the qualitative findings were compared with and integrated into the quantitative results to explain how and why changes in teachers' knowledge, attitudes, and skills occurred, and to identify contextual factors that could strengthen or hinder the program's effectiveness. Thus, the qualitative findings were not presented merely as separate results but were used to provide further explanations and contextual understanding of the quantitative findings.

This study was conducted at selected public junior high schools in Padang City, West Sumatra, Indonesia, between January and June 2026. The schools were selected purposively based on their willingness to participate, relatively comparable school characteristics, and the absence of a structured training program on early detection of bullying and adolescent mental health promotion. Before participant recruitment, the research team contacted the school authorities, explained the study objectives, procedures, potential benefits, and duration of the study, and obtained permission from the participating schools.

The quantitative phase involved 60 teachers, comprising 30 teachers in the intervention group and 30 in the control group. Teachers were recruited using purposive sampling based on the predetermined eligibility criteria. Teachers were eligible if they were full-time teachers, had worked at the participating school for at least one year, had regular and direct interactions with students, and were willing to participate in all study procedures. Teachers who were on leave throughout the intervention period or unable to complete the study procedures were excluded. Eligible teachers were approached by the research team and provided information about the study before providing written informed consent. A total of 60 eligible teachers consented to participate in the study.

In addition, 70 students were recruited as supporting respondents to provide information on bullying and adolescent mental health indicators before and after the intervention. Students were selected according to predetermined eligibility criteria and recruited from the participating schools. The study procedures were explained to eligible students and their parents or legal guardians. Students were included only after obtaining written informed consent from their parents or legal guardians and their assent to participate. Students who did not obtain parental/guardian consent or who declined to participate were not included in the study.

Teachers were allocated to the intervention and control groups non-randomly. The groups were predetermined based on the participating schools or predefined school groups before the intervention was implemented. This non-random allocation was used to minimize the potential for contamination between groups, particularly the possibility of teachers in the control group being exposed to the intervention materials through interactions with teachers in the intervention group. Therefore, this study was designed as a quasi-experimental study. The same eligibility criteria and recruitment procedures were applied to both groups of participants.

The intervention consisted of a structured teacher empowerment program developed based on current evidence on school bullying prevention and adolescent mental health promotion. The program covered six components: (1) early identification of

bullying behaviors; (2) recognition of psychosocial and mental health indicators; (3) supportive communication and basic counseling skills; (4) classroom-based bullying prevention strategies; (5) referral mechanisms for students requiring professional support; and (6) school-based mental health promotion.

The training module was specifically structured for teachers and included evidence-based materials, case discussions, role-playing, and practical exercises. The intervention was delivered over two consecutive days using standardized teaching materials and a predefined session sequence. The facilitators had relevant expertise and experience in health education and adolescent mental health.

Intervention fidelity was maintained using a standardized facilitator guide, training checklist, structured session schedule, and consistent use of the same training materials and activities. The research team monitored participant attendance and completion of each session, and any deviations from the planned procedures were documented. The teachers in the control group continued their usual school activities without additional training during the study period.

The key result was teachers' competency, assessed by three dimensions: knowledge, attitudes, and practical skills linked to the identification of bullying and promotion of adolescent mental health. Knowledge was evaluated using a structured multiple-choice questionnaire, attitude using a five-point Likert scale questionnaire, and practical skills using an observation checklist based on standardized case scenarios.

Supporting data from students included bullying experiences and indications of adolescent mental health using validated self-administered questionnaires. All research tools were validated by experts before use and proved to have good internal consistency, with Cronbach's alpha coefficients > 0.70 .

Both groups were assessed at baseline (pretest) before the intervention. Posttest assessments were given using the same instruments after completion of the Teacher Empowerment Program four weeks after the intervention. This was followed by a qualitative phase using focus group discussions (FGDs) with instructors in the intervention group and in-depth interviews with selected participants to investigate their thoughts regarding program implementation, perceived advantages, impediments, and recommendations for program enhancement. All interviews were audio-recorded with participants' consent and transcribed verbatim.

Participants were selected using purposive sampling based on their relevance to the research objectives and direct involvement in student guidance and program implementation. The FGD and in-depth interview guides were semi-structured and focused on teachers' understanding of bullying and early detection before the intervention, barriers to implementation, perceptions of the Teacher Empowerment Program, school support, and expectations for the program's sustainability. These areas correspond to the five themes identified in the qualitative findings presented in Table 5.

Qualitative data collection was conducted until sufficient information was obtained, and the responses became repetitive, indicating that no substantially new information or themes were emerging. This saturation criterion was assessed by continuously comparing information obtained during the discussions and interviews and reviewing the emerging codes and themes. The qualitative data were subsequently analyzed thematically. Triangulation was performed by comparing qualitative findings with the quantitative results to provide a more comprehensive interpretation of the effectiveness and implementation of the Teacher Empowerment Program.

Quantitative data were analyzed using descriptive and inferential statistics. Descriptive statistics were used to summarize the characteristics of the participants and study variables. Before conducting parametric tests, the assumptions for the paired and

independent t-tests were assessed. For the paired t-test, the normality of the difference scores between the pretest and posttest measurements was assessed. For the independent t-test, the distribution of the outcome variable in each study group was assessed for normality, and the homogeneity of variance between the intervention and control groups was evaluated. The assumptions were considered adequately met when no substantial deviation from normality or homogeneity of variance was identified.

A paired t-test was used to compare pre- and post-test scores within each group, while an independent t-test was used to compare changes in outcomes between the intervention and control groups. ANCOVA was used to adjust for baseline differences. Statistical significance was set at $P < 0.05$. Qualitative data obtained from FGDs and in-depth interviews were analyzed thematically, and the qualitative findings were integrated with quantitative results to provide a comprehensive interpretation of the study findings. This study was approved by the Health Research Ethics Committee of the Faculty of Medicine, Baiturrahman University (Approval No. [187/ETIK-FKUNBRAH/03/09/2026]). Written informed consent was obtained from all participants before data collection. All procedures were conducted in accordance with the ethical principles of the Declaration of Helsinki.

3. RESULTS AND DISCUSSION

Table 1. Characteristics of teacher respondents in the intervention and control groups.

Variables	Intervention (n=30)	Control (n=30)	p-value
Age (Mean $\pm$ SD)	38.5 $\pm$ 6.2	37.9 $\pm$ 5.8	0.67
Years of Teaching (years)	11.2 $\pm$ 4.2	10.8 $\pm$ 4.2	0.71
Guidance and Counseling Teacher	8 (26.7%)	7 (23.3%)	0.77
Homeroom Teacher	12 (40.0%)	13 (43.3%)	0.80
Core Subject Teacher	10 (33.3%)	10 (33.3%)	1.00
Previously Attended Bullying Training	6 (20.0%)	5 (16.7%)	0.74

Table 1 shows that the characteristics of respondents between the intervention and control groups were relatively homogeneous, with no significant differences in age, length of teaching, type of teacher role, or previous experience with bullying training ($p > 0.05$). This is important in quasi-experimental research because it indicates that both groups had comparable baseline characteristics before the intervention, making changes after the intervention more likely due to the Teacher Empowerment Program rather than differences in respondents' baseline characteristics. Only 20.0% of teachers in the intervention group and 16.7% in the control group reported having attended bullying-related training. This indicates that most participating teachers had limited prior exposure to structured training in bullying detection and prevention. The relatively low proportion of teachers with previous training highlights the need for targeted capacity-building interventions to address the early identification of bullying and adolescent mental health concerns.

Table 2. Changes in teacher knowledge before and after intervention.

Variables	Pretest (Mean $\pm$ SD)	Posttest (Mean $\pm$ SD)	p-value
Knowledge of bullying	61.4 $\pm$ 8.5	84.7 $\pm$ 6.3	<0.001
Knowledge of psychosocial early detection	58.2 $\pm$ 7.9	82.5 $\pm$ 5.8	<0.001
Knowledge of mental health promotion	60.1 $\pm$ 8.1	83.9 $\pm$ 6.0	<0.001

Table 2 shows that the following the Teacher Empowerment Program, teachers in the intervention group demonstrated significant improvements across all assessed knowledge domains while knowledge of adolescent mental health promotion increased from 60.1 ± 8.1 to 83.9 ± 6.0 ($p < 0.001$). The qualitative findings provided contextual explanations for these quantitative improvements. During the FGDs, teachers reported that before the intervention they were more familiar with visible or physical forms of bullying and had more difficulty recognizing verbal, relational, and cyberbullying. Following the training, teachers described a broader understanding of behavioral and psychosocial indicators, including social withdrawal, changes in academic performance, anxiety, and emotional changes among students. These findings help explain the observed quantitative improvement in knowledge by indicating that the training expanded teachers' understanding beyond overt physical bullying to include less visible forms of bullying and related psychosocial indicators.

Table 3. Changes in teachers' attitudes towards early detection of bullying.

Variables	Pretest (Mean $\pm$ SD)	Posttest (Mean $\pm$ SD)	p-value
Perception of the importance of early detection of bullying	65.3 ± 7.4	86.1 ± 5.7	<0.001
Attitudes toward bullying intervention	63.8 ± 6.9	85.4 ± 5.9	<0.001
Support for mental health promotion	66.2 ± 7.1	87.0 ± 5.5	<0.001

Table 3 shows that the intervention was also associated with significant improvements in teachers' attitudes toward early bullying detection and adolescent mental health promotion. The mean score for the perceived importance of early bullying detection increased from 65.3 ± 7.4 to 86.1 ± 5.7 ($p < 0.001$). Attitudes toward bullying intervention increased from 63.8 ± 6.9 to 85.4 ± 5.9 ($p < 0.001$), while support for mental health promotion increased from 66.2 ± 7.1 to 87.0 ± 5.5 ($p < 0.001$).

The qualitative findings complemented these results by showing a shift in teachers' perceptions of bullying from a problem that could be considered ordinary student misbehavior toward a concern requiring early identification and structured intervention. Teachers described the program as relevant to their daily responsibilities and reported that the training increased their awareness of the relationship between bullying and adolescent mental health.

This qualitative evidence explains the quantitative improvement in attitudes. In particular, the contextualized examples and practical discussions used during the program appeared to help teachers recognize the potential psychological consequences of bullying and the importance of early stage responses.

"A teacher explained that the training changed their understanding of bullying, particularly because some forms of bullying were not immediately visible and could have psychological consequences for the students."

Table 4. Changes in teacher skills in early bullying detection.

Variables	Pretest (Mean $\pm$ SD)	Posttest (Mean $\pm$ SD)	p-value
Student behavior observation skills	59.7 ± 7.8	83.6 ± 6.1	<0.001

Variables	Pretest (Mean $\pm$ SD)	Posttest (Mean $\pm$ SD)	p-value
Supportive communication with students	61.2 $\pm$ 8.0	84.2 $\pm$ 5.9	<0.001
Early referral skills	57.9 $\pm$ 7.5	81.8 $\pm$ 6.4	<0.001

Table 4 shows that the significant improvements were also observed in teachers' practical skills following the intervention (Table 4). Scores for student behavioral observation skills increased from 59.7 $\pm$ 7.8 to 83.6 $\pm$ 6.1 ($p < 0.001$). Supportive communication skills increased from 61.2 $\pm$ 8.0 to 84.2 $\pm$ 5.9 ($p < 0.001$), while early referral skills increased from 57.9 $\pm$ 7.5 to 81.8 $\pm$ 6.4 ($p < 0.001$).

The qualitative findings further explained these improvements by highlighting the practical nature of the training. Teachers particularly described the use of case discussions, role-play, and practical exercises as useful for translating theoretical knowledge into responses that could be applied in everyday school situations. Teachers reported greater awareness of subtle behavioral changes, improved confidence in communicating with students, and greater understanding of when students should be referred for additional support.

Thus, the qualitative findings complemented the quantitative results by providing contextual evidence that the observed improvement in practical skills was accompanied by teachers' perceived improvement in confidence and applicability of the skills in school settings.

"Before the training, I did not know that changes in behavior could be a sign of bullying." (Teacher 3, pre-training interview)."

Qualitative Findings from FGDs

The qualitative analysis identified five major themes: (1) teachers' understanding before the intervention, (2) perceived relevance and practicality of the program, (3) implementation barriers, (4) the role of school support, and (5) expectations for program sustainability (Table 5).

Table 5. Focus group discussion (FGD) results.

Key Themes	Findings
Teacher Understanding Before the Intervention	Teachers do not yet fully understand verbal, relational, and cyberbullying.
Major Barriers	Lack of school standard operating procedures, high administrative burden, and limited time.
Perceptions of the Program	Program deemed practical, applicable, and easy to implement.
School Support	Principals and guidance counselors play a crucial role in program sustainability.
Teacher Expectations	The program can become school policy and be implemented sustainably.

Before the intervention, the teachers reported limited understanding of non-physical forms of bullying, particularly verbal, relational, and cyberbullying. They also described a tendency to respond to bullying after conflicts had occurred, rather than identifying early behavioral and psychosocial indicators.

The second theme concerned the perceived relevance and practicality of the Teacher Empowerment Program. Teachers considered the program applicable to their

everyday responsibilities, particularly because the training used contextual cases and included practical activities. This finding complements the quantitative improvements in teachers' knowledge, attitudes, and practical skills by suggesting that the practical and context-specific structure of the program facilitated the application of newly acquired competencies. Participants emphasized that the practical nature of the training made the program easier to understand and apply in their daily teaching. One teacher explained:

"The training was useful because the examples were similar to situations that we experience with students. The practical activities helped us understand what we should do when we find signs of bullying." (Teacher 1)

Another participant highlighted the applicability of the program to routine teaching responsibilities.

"The program was easy to follow and could be applied in our daily work. We learned not only about bullying, but also how to communicate with students and respond appropriately." (Teacher 5)

The third theme involved the barriers to implementation. Teachers identified limited time, high administrative workloads, and the absence of school-specific standard operating procedures (SOPs) for bullying as the major challenges. These findings indicate that improvements in individual teacher competency may not automatically translate into sustained school-wide implementation without the necessary organizational support. Teachers described these challenges in relation to their daily responsibilities as follows: One participant stated:

"Sometimes we understand what needs to be done, but we have limited time because of teaching and administrative responsibilities. It is difficult to consistently monitor students and follow up on bullying incidents." (Teacher 6)

Another teacher emphasized the lack of standardized procedures:

"We do not yet have clear procedures for dealing with bullying cases. When an incident happens, teachers may handle it differently because there is no specific SOP that can guide us." (Teacher 2)

The fourth theme highlights the importance of school-level support. Teachers identified principals and guidance and counseling personnel as important actors in supporting the implementation and sustainability of bullying prevention and adolescent mental health promotion.

The fifth theme was program sustainability. Teachers expressed the expectation that the Teacher Empowerment Program could be incorporated into school policies and implemented as part of routine activities. This finding suggests that the program's institutionalization may be necessary to maintain its potential benefits beyond the intervention period.

Table 6. Early indicators of bullying and student mental health.

Variables	Before Intervention	After Intervention
Students report experiencing verbal bullying	42.8%	28.5%
Students with mild anxiety symptoms	36.4%	22.7%
Students with mild social isolation	31.2%	18.9%
Students feel safe at school	58.6%	79.4%

Table 6 shows that the supporting data from students showed changes in selected indicators following the implementation of the teacher empowerment program (Table 6). The proportion of students reporting verbal bullying decreased from 42.8% before the intervention to 28.5% after the intervention. The proportion of students with mild anxiety symptoms decreased from 36.4% to 22.7%, while mild social isolation decreased from 31.2% to 18.9%. The proportion of students reporting that they felt safe at school increased from 58.6% to 79.4%. These descriptive changes provide additional contextual information regarding the school environment in which the Teacher Empowerment Program was implemented. However, because these student indicators were used as supporting data, the observed pre–post changes should be interpreted cautiously and not considered evidence of a direct causal effect of the intervention unless supported by appropriate between-group statistical analysis.

The quantitative and qualitative findings were integrated during interpretation in accordance with the sequential explanatory mixed-methods design. The quantitative phase first demonstrated significant improvements in teachers' knowledge, attitudes, and practical skills following the Teacher Empowerment Program. The subsequent qualitative phase was conducted to explore teachers' experiences and perceptions and to explain the contextual factors underlying these quantitative changes.

The qualitative findings generally complemented the quantitative results. Teachers' reported that the training was practical, relevant, and applicable to daily school situations, which helped explain the improvements observed in knowledge, attitudes, and practical skills. In particular, teachers identified case discussions, role-play, and practical exercises as useful components for translating theoretical concepts into practical responses to bullying and adolescent mental health concerns.

Simultaneously, the qualitative findings identified contextual barriers that were not captured by the quantitative outcome measures. Limited time, high administrative workload, lack of school-specific bullying SOPs, and the need for stronger support from school leadership were identified as important challenges for sustained implementation. These findings, therefore, extend the quantitative results by demonstrating that improvements in individual teacher competency occurred within an organizational context that may influence the sustainability and broader implementation of the program.

In terms of attitudes, there was a significant change in teachers' perceptions of bullying and mental health promotion. Before the intervention, some teachers viewed bullying as a form of misbehavior that would resolve itself without requiring specific intervention. After the intervention, teachers demonstrated greater awareness that bullying poses a real threat to adolescents' psychological development and requires a professional response. This change is important because teacher attitudes significantly influence decisions about intervention (Munir et al., 2025). Teachers who perceive bullying prevention as important are more likely to observe students, provide support, and initiate referrals when necessary. Conversely, perceiving bullying as normal may contribute to delayed intervention and potentially worsen the victim's situation. Troop-Gordon and Ladd emphasized that teachers' perceptions of bullying are directly related to the quality of the school climate and students' psychological safety. When teachers demonstrate a strong commitment to bullying prevention, students tend to feel safer and more confident in reporting negative experiences (Munir et al., 2025).

The qualitative findings complemented these quantitative changes by illustrating a shift in teachers' perceptions of bullying. Teachers described the Teacher Empowerment Program as relevant and applicable to their daily responsibilities and reported greater awareness of the relationship between bullying and adolescent mental health. The contextual cases and practical discussions helped teachers reconsider bullying as a

problem requiring early identification rather than simply a disciplinary issue. Therefore, the qualitative findings strengthened the interpretation of the quantitative improvement in attitudes by demonstrating how teachers experienced changes in their understanding and perceptions following participation in the program.

Improved teacher skills in observing student behavior, supportive communication, and early referral demonstrate that the program is not only cognitively effective but also practically applicable. This is crucial because many bullying cases go unreported and may only be recognized through changes in students' daily behavior. Trained teachers are better positioned to identify early signs, such as decreased learning participation, increased absenteeism, social withdrawal, changes in emotional expression, and changes in peer relationships. According to Thornberg et al., (2017) the success of anti-bullying interventions depends heavily on teachers' sensitivity to early indicators of student psychological distress. Furthermore, supportive communication is crucial because victims of bullying are often reluctant to disclose their problems because of fear, shame, or a lack of confidence that they will receive help. Teachers who can build empathetic and safe relationships may increase the likelihood that students will disclose their problems and accept assistance (Wolgast et al., 2022).

The FGD results corroborated the quantitative findings by showing that teachers considered the Teacher Empowerment Program applicable, realistic, and appropriate for their school's needs. Prior to the intervention, most teachers reported that they had never received specific training related to the early detection of bullying from an adolescent mental health perspective. Bullying management was generally reactive, occurring after conflicts had already emerged, rather than focusing on early prevention. This finding indicates a gap between the needs of teachers in the field and the available support within the education system (De Luca et al., 2019). Explained that the success of anti-bullying programs is greatly influenced by the relevance of the intervention to the school context and the structural support provided by the school organization. Programs that are simple, contextual, and easy to implement are more likely to be accepted by teachers than overly theoretical approaches (Markovic et al., 2020).

The qualitative findings further elucidate the significant improvement in practical skills observed quantitatively. Teachers reported that case discussions, role-playing, and practical exercises helped them translate theoretical knowledge into responses applicable in real school situations. This finding provides an important explanatory link between the quantitative improvement in skills and teachers' actual experiences during the intervention. In other words, the qualitative component helps explain not only whether teachers' skills improved, but also how the intervention was perceived to support the development of those skills (Özdemir, 2019).

However, this study also identified several implementation barriers, particularly the high administrative burden on teachers, limited time, and lack of school Standard Operating Procedures (SOPs) for handling bullying. This finding demonstrates that strengthening individual teacher capacity alone may be insufficient without support from a strong school system. Principals, guidance counselors, parents, and school policymakers need to be actively involved to ensure sustainable bullying prevention efforts. Teacher empowerment therefore needs to be positioned as part of a whole-school approach rather than as a short-term training program. The qualitative findings add an important dimension to the quantitative results by identifying organizational barriers that were not captured through teacher competency scores (Khofi & Sholeh, 2025; Pearce et al., 2024). These findings suggest that improvements in individual capacity need to be supported by a conducive organizational environment to achieve sustained implementation.

Changes in bullying indicators and student mental health also provide additional contextual evidence regarding changes in the school psychosocial environment. The reduction in verbal bullying, mild anxiety, and social isolation, together with the increase in students' reported sense of safety at school, suggests favorable changes in selected student indicators following the implementation of the program (Khodirova et al., 2026). However, these findings should be interpreted cautiously because the student data support indicators and do not, by themselves, establish a direct causal or indirect effect of the Teacher Empowerment Program. Rather, they provide complementary evidence of changes occurring within the school environment during the intervention period.

Verbal bullying is often considered less serious because it leaves no physical evidence, yet its impact on adolescents' self-esteem and mental health can be substantial (Fauzan & Sulaeman, 2024; Yusuf et al., 2022) showed that verbal bullying is the dominant form of bullying among Indonesian adolescents and is significantly associated with depression, anxiety, and reduced psychosocial quality of life. When teachers become more responsive and students feel protected, schools may become safer emotionally and socially. The qualitative findings support this interpretation by demonstrating that teachers perceived improved awareness and practical capacity after the intervention, although organizational barriers may influence the extent to which these improvements can be sustained.

The mixed-methods approach used in this study provides methodological strength because it generated a more comprehensive understanding of the Teacher Empowerment Program. Quantitative data provided measurable evidence of improvements in teachers' knowledge, attitudes, and skills, whereas qualitative data provided explanations regarding teachers' experiences, perceptions, and implementation barriers that could not be captured through statistical analysis alone. Importantly, the qualitative findings were used to explain, strengthen, and complement the quantitative results rather than being presented as a separate source of findings. For example, the significant quantitative improvement in knowledge was explained by teachers' qualitative accounts of gaining a broader understanding of non-physical bullying and psychosocial warning signs. Similarly, quantitative improvements in attitudes and practical skills were complemented by teachers' reports that contextual cases, role-play, and practical exercises made the program relevant and applicable to everyday school situations. Conversely, qualitative findings concerning administrative workload, limited time, lack of bullying SOPs, and the importance of school leadership identified contextual factors that were not evident from the quantitative outcomes. This integration is consistent with the sequential explanatory mixed-methods design, in which qualitative findings are used to explain and contextualize the results obtained during the quantitative phase. Creswell emphasized that mixed methods are particularly appropriate for social and health intervention research because they can address both the questions of whether an intervention is successful and why or under what conditions it is successful or unsuccessful.

4. CONCLUSION

The teacher empowerment program was associated with improved teachers' knowledge, attitudes, and skills related to the early detection of bullying and adolescent mental health promotion. The intervention group demonstrated greater improvement than the control group, supporting the potential value of structured teacher training as a school-based strategy for strengthening teachers' capacity to recognize psychosocial problems, identify bullying, and provide appropriate initial support. Changes observed among the 70 supporting student respondents were consistent with a more favorable psychosocial school environment, including lower reported verbal bullying, mild anxiety symptoms, and

social isolation, along with increased perceptions of school safety. However, because students were not independently randomized into the intervention and control groups, these findings should be interpreted as complementary descriptive evidence rather than direct evidence of the effectiveness of student-level interventions. Further studies with larger samples, randomized designs, validated instruments, and longer follow-ups are needed to determine the sustainability and student-level impact of teacher empowerment interventions.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

ETHICAL CONSIDERATIONS

This study was approved by the Health Research Ethics Committee of the Faculty of Medicine, Baiturrahman University (Approval No. [187/ETIK-FKUNBRAH/03/09/2026]). Written informed consent was obtained from all participants before data collection. All procedures were conducted in accordance with the ethical principles of the Declaration of Helsinki.

AUTHOR CONTRIBUTIONS

Dian Rahmi conceived and designed the study, developed the research methodology, coordinated data collection, performed data analysis and interpretation, drafted the original manuscript, and revised the manuscript critically for important intellectual content. Rikayoni contributed to the study design, assisted in data collection and interpretation, reviewed and revised the manuscript critically, and provided supervision throughout the research process. Both authors read and approved the final version of the manuscript and agree to be accountable for all aspects of the work.

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DECLARATION OF ARTIFICIAL INTELLIGENCE USE

The authors used Paperpal, an AI-assisted academic language editing tool, solely to improve the grammar, language, and readability of the manuscript. Paperpal was not used to generate scientific content, interpret data, perform analyses, draw conclusions, or make research-related decisions. All study concepts, methodology, data collection, analysis, interpretation, and the final manuscript content were developed, reviewed, and approved by the authors, who take full responsibility for the accuracy, originality, and integrity of the work.

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