

Sobat KTR: A Peer Support Group Program To Increase Adolescents' Awareness of The Dangers of Smoking and Smoke-Free Areas

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ABSTRACT

Adolescent smoking remains a significant public health challenge, with peer influence being one of the strongest determinants of smoking initiation and continuation. The SOBAT KTR (Sosial Berdaya Tanpa Asap Rokok) program was developed to empower adolescents through peer support in promoting smoke-free lifestyles and strengthening awareness of Smoke-Free Areas (SFA). This study aimed to describe the implementation of the SOBAT KTR program based on a Peer Support Group approach to improve adolescents' awareness of the dangers of smoking and their commitment to supporting Smoke-Free Areas. A community-based descriptive evaluative design was conducted among 21 adolescents in RW 06, Klampis Ngasem, Surabaya. Participants were divided into five peer groups facilitated by students. Program activities included peer sharing, group discussions, experience exchange, and commitment building. Data were collected through structured observation, facilitator notes, group discussion outcomes, and participant commitments, and analyzed descriptively. Results: Participants actively identified peer influence, curiosity, and social acceptance as major factors contributing to smoking behavior. They proposed positive peer support strategies, including reminding friends about smoking hazards, encouraging healthy activities, motivating smoke-free lifestyles, and discouraging smoking behavior. The program also strengthened participants' commitment to becoming peer role models and promoting Smoke-Free Areas within their schools and communities. The SOBAT KTR program successfully utilized peer support to enhance adolescents' awareness of smoking prevention and foster positive social norms supporting smoke-free environments. This approach has strong potential as a sustainable community-based health promotion strategy for adolescent smoking prevention.

Keywords : Adolescent, Peer Support Group, Smoking Prevention, SOBAT KTR, Smoke-Free Area, Health Promotion

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INTRODUCTION

Smoking among adolescents remains a public health issue that requires attention, as the majority of smokers begin smoking during adolescence and are at risk of developing

nicotine dependence into adulthood (WHO, 2024). Smoking from an early age increases the risk of noncommunicable diseases, such as cardiovascular disease, respiratory disorders, and cancer, and impacts future quality of life and productivity (Vaihekoski et al., 2022). Various factors influence this behavior, but peer influence is one of the most dominant determinants shaping adolescents' decisions to start or continue smoking (Littlecott et al., 2023).

Globally, approximately 37 million adolescents aged 13-15 use tobacco products, while tobacco use causes more than 8 million deaths each year (WHO, 2024). In Indonesia, the 2023 Survei Kesehatan Indonesia (SKI) showed a smoking prevalence of 7.4% among 10-18 years old (Kemenkes, 2024). At the provincial level, ASIK data showed that the percentage of smoking among individuals aged 10-18 years in East Java was 6.6% (Kemenkes, 2025). In Surabaya, the proportion of smokers aged 10-18 years was 2.66% in 2024, representing 10,709 smokers among 402,219 individuals in this age group (Dinas Kesehatan Kota Surabaya, 2025). This situation is also a concern in the service area of the Klampis Ngasem Community Health Center, which has a population of 24,961, including 1,976 adolescents aged 15-19 years, making them a potential target for efforts to prevent smoking among adolescents. RW 06 was specifically selected based on an initial community assessment involving Kader Surabaya Hebat (KSH), youth organization representatives, and household health behavior data, which identified adolescent smoking-related concerns and low awareness of smoking hazards and Smoke-Free Areas in the community. The area also had supporting community resources, including active health cadres and youth organizations, which facilitated the implementation of adolescent health promotion activities.

Adolescent smoking behavior is influenced by various individual, social, and environmental factors, including curiosity, social acceptance, exposure to smoking, and peer interactions. Among these factors, peer influence plays an important role in adolescents' decisions to initiate or continue smoking (Littlecott et al., 2023).

Although various educational programs on the dangers of smoking have been implemented, changes in adolescent behavior have not yet been optimal (Alsahli et al., 2025). This is because the delivery of information often focuses on increasing knowledge, while the process of shaping adolescent behavior is heavily influenced by social norms and interactions with peer groups (Littlecott et al., 2023). On the other hand, adolescents tend to be more receptive to information, support, and behavioral examples from friends with whom they share an emotional bond than from adults or healthcare professionals (MacArthur et al., 2024). Therefore, a promotive approach is needed that involves adolescents both as participants and as agents of change within their peer groups (Veenstra, 2025). Furthermore, smoking behavior during adolescence is closely related to the social environment in which adolescents interact and develop their identity (Inkiriwang & Triwahyuni, 2025). Peer groups can reinforce smoking behavior through social acceptance and imitation, but they can also serve as a protective factor when positive health norms are established within the group (Murray et al., 2025). Involving adolescents in peer-based health promotion may therefore provide opportunities to develop supportive social norms that discourage smoking and encourage healthier behaviors. Such an approach also positions adolescents as active partners in health promotion rather than merely as recipients of health information (Iacobini et al., 2025).

One strategy that can be implemented is the formation of a Peer Support Group, a peer group that serves as a forum for sharing experiences, providing social support, and motivating one another to adopt healthy lifestyle behaviors (Li et al., 2025). This approach has been reported to increase adolescent participation in health promotion activities and strengthen their commitment to positive behavioral change (Fithria et al., 2023a). However, the implementation of Peer Support Groups as an educational tool to raise adolescent awareness about the dangers of smoking and the implementation of Smoke Free Zones at the community level has not been

widely reported, particularly in community service activities in Indonesia (Claramita, Fitriyani, Syah, Hilman, Ekawati, F. M., Mahmudah, et al., 2021). Therefore, this community service activity aims to implement the SOBAT-KTR (Sosial Berdaya Tanpa Asap Rokok) program based on Peer Support Groups to raise adolescents' awareness of the dangers of smoking and the importance of implementing Smoke Free Zones in RW 06 within the service area of the Klampis Ngasem Community Health Center.

METHOD

Activity Design and Location

This community service activity employed a community-based descriptive-evaluative design to assess the implementation, participant engagement, and immediate outcomes of a peer-group support program aimed at preventing smoking among adolescents. This design was not intended to test the causal effectiveness of the intervention, as it did not include a comparison group or quantitative pre- and post-intervention measurements. The activity was conducted at the RW 06 Community Hall in Klampis Ngasem Village, Sukolilo Subdistrict, Surabaya, in May 2026 as part of the SOBAT KTR program.

Participants

The participants in this activity were 21 adolescents residing in RW 06 of Klampis Ngasem Village. Recruitment was conducted in coordination with local community leaders and through the dissemination of information via communication channels used by local adolescents. The participants involved were adolescents who were willing to take part in the program and attend the entire peer-group support series. Participants were then divided into five small groups, each consisting of four to five people. Each group was accompanied by a student facilitator to help guide discussions and create a safe, open, and non-judgmental atmosphere. The formation of these five groups and the peer-sharing sessions constituted the main components of the intervention.

Conducting Peer-Group Support Activities

The activities were conducted through peer sharing and small-group discussions. The session began with an opening, an introduction of the facilitator, an explanation of the activity's objectives, and the formation of groups. During the peer-sharing session, participants were given the opportunity to share their experiences, opinions, or situations they had encountered regarding smoking behavior within their families, schools, and among friends. Discussion topics included the health risks of smoking, the influence of peers on the decision to start or quit smoking, the role of peer support in maintaining healthy behaviors, strategies for dealing with peer pressure, skills for refusing invitations to smoke, and adolescents' commitment to supporting Smoke-Free Zones.

During the group discussion phase, participants were asked to identify environmental factors that might encourage adolescents to smoke, forms of peer pressure, strategies for firmly refusing invitations to smoke, and ways to support friends who are at risk of smoking or are trying to quit. Participants were also encouraged to come up with positive actions, such as reminding each other about the dangers of smoking, inviting friends to participate in meaningful activities, providing motivation to adopt a healthy lifestyle, and not normalizing smoking behavior.

Following the group discussions, participant representatives presented the results of their discussions in a plenary session. The facilitator provided clarification, reinforcement, and motivation regarding the importance of peers' roles in preventing smoking. The activity concluded with participants drafting a commitment to avoid cigarettes, provide positive support to peers, and participate in creating a smoke-free environment. Peer sharing and group

discussion methods were used so that participants could exchange experiences, identify problems, and jointly formulate solutions to prevent smoking.

Instruments and Data Collection

Activity evaluations were conducted using observation sheets developed by the implementation team based on the program's objectives and success indicators. The evaluation covered three components: structure, process, and outcomes. The structural evaluation is used to assess the readiness of the venue, media, materials, participants, and the division of tasks among implementers before the activity begins. The process evaluation is conducted during the activity and covers participant engagement, clarity of material delivery, two-way communication, facilitator involvement, appropriateness of the timing, and the creation of a conducive and non-judgmental discussion atmosphere.

Outcome evaluation is conducted at the end of the activity to assess participants' ability to identify the dangers of smoking, demonstrate a refusal of smoking behavior, explain or practice ways to refuse invitations to smoke, explain the role of peers in smoking prevention, provide examples of positive support, and express a commitment to supporting a smoke-free environment for adolescents.

Data were collected through direct observation during the activity, facilitator notes, group discussion outcomes, participant responses during the question-and-answer session, and statements of commitment at the end of the activity. The instrument used was a program evaluation instrument developed by the implementation team and was not a standardized psychometric instrument.

Success Indicators

An activity is considered to have met the success indicators if at least 80% of participants attend the activity from start to finish, at least 75% of participants actively participate in discussions or question-and-answer sessions, at least 80% of participants are able to explain the health risks of smoking, and at least 75% of participants are able to describe or demonstrate ways to refuse invitations to smoke. Additional indicators include participants' commitment to avoiding cigarettes and encouraging their peers not to smoke, as well as the facilitators' active involvement in providing support, motivation, and positive reinforcement.

Data Analysis

Data on participant characteristics and structured evaluation results were analyzed descriptively using frequencies and percentages. The percentage of achievement for each indicator was calculated by dividing the number of participants who met the indicator by the total number of participants who took part in the activity, then multiplying by 100%. Discussion notes and peer-sharing results were summarized descriptively based on several predetermined categories, namely experiences related to smoking behavior, peer influence, forms of social pressure, strategies for refusing invitations to smoke, forms of positive support, and commitment to smoke-free zones. The analysis results were presented in narrative form and in tables showing indicator achievement rates. No inferential statistical tests were conducted because the activity did not use specific pretest–posttest measurements for the peer-group support intervention.

RESULTS

A total of 21 adolescents from RW 06, Klampis Ngasem Community Health Center working area participated in the SOBAT KTR Peer Support Group program for smoking prevention. Participants were divided into five peer groups consisting of four to five adolescents in each group. During the activity, all participants followed the peer support sessions from the beginning to the end of the program.

The observation results showed that participants actively engaged in peer-sharing sessions and group discussions. All participants were willing to express their opinions, share experiences related to smoking behavior among adolescents, and respond to questions provided by facilitators. Participants identified several factors influencing adolescent smoking behavior, including peer influence, curiosity, social environment, and the desire to be accepted by friendship groups.

After receiving educational materials and participating in discussions, participants demonstrated an understanding of the dangers of smoking. Participants were able to explain the negative health effects of smoking and recognize the importance of maintaining Smoke-Free Areas (SFA). In addition, participants were able to describe strategies for refusing invitations to smoke, including refusing firmly, avoiding situations that encourage smoking, and providing positive support to peers.

Discussion Topic	Findings
Smoking behavior among peers	Most participants had observed or knew peers who smoked.
Factors influencing smoking behavior	Peer influence, social environment, curiosity, and the desire to be accepted by peers were identified as factors contributing to smoking initiation.
Forms of peer support	Reminding friends about the health risks of smoking, encouraging participation in positive activities, motivating healthy lifestyles, and discouraging smoking behavior.
Commitment	Participants expressed their willingness to become peer role models in supporting Smoke-Free Areas within their schools and communities.

Table.1 Summarizes the main findings of the group discussion.

The group discussion also showed that participants recognized the importance of peer support in preventing smoking behavior. Participants proposed several positive actions, such as reminding friends about smoking hazards, encouraging healthy activities, motivating peers to avoid smoking, and supporting the implementation of Smoke-Free Areas.

At the end of the activity, participants expressed their commitment to becoming peer role models in promoting smoke-free environments within their schools and communities. These findings indicate that the SOBAT KTR Peer Support Group program was well received by adolescents and showed potential in strengthening awareness and peer involvement in smoking prevention.

DISCUSSION

Peer Group Support is one of the health promotion approaches that utilizes the positive influence of peers in shaping health knowledge, attitudes, and behaviors (Kobus, 2003). In adolescence, peers have a huge role in the process of identity formation, decision-making, and the adoption of a behaviour (Go et al., 2010). Therefore, peer group involvement in health education activities is considered more effective than one-way information delivery, because participants tend to feel more comfortable discussing, exchanging experiences, and providing support to each other in implementing healthy behaviors. This approach is also able to create a

participatory learning environment so that health messages are easier to receive and maintain in daily life (Simons-Morton & Farhat, 2010).

In this community service activity, the Peer Group Support approach is applied through group discussions and mentoring between participants regarding the dangers of smoking and the importance of creating a smoke-free environment. Interaction between participants provides an opportunity for adolescents to express their opinions, share experiences, and reinforce decisions to avoid smoking behavior. The process not only increases participants' understanding of the negative impacts of smoking, but also reinforces positive social norms that not smoking is a healthy and accepted choice for groups. This condition suggests that peer support can be a protective factor in encouraging changes in health behavior.

These findings are in line with various studies that state that peer-based interventions are effective in improving smoking prevention knowledge, attitudes, and behaviors in adolescents (Ragan, 2016). Peer influence, which was initially one of the risk factors for a person to start smoking, can be diverted into a protective factor if directed through a structured educational program. In addition to increasing knowledge, the Peer Group Support approach is also able to strengthen confidence, communication skills, and adolescents' ability to refuse the invitation to smoke (*refusal skills*) (Lakon & Valente, 2012). Thus, learning that involves interaction between peers has a more sustainable impact than education that is only carried out by health workers without the involvement of peer groups.

The implications of this activity show that Peer Group Support can be used as one of the promotive strategies in efforts to prevent smoking behavior among adolescents. This approach is relatively easy to apply in the school and community environment because it utilizes existing resources, namely, peer groups (Harakeh, 2014). In addition to increasing the effectiveness of health message delivery, the existence of support groups can also help maintain behavior change through reminding each other, motivating, and building social norms that support a smoke-free lifestyle (Khalil et al., 2021). Therefore, the integration of Peer Group Support into health promotion programs has the potential to increase the sustainability of interventions in creating an environment that supports the implementation of a No Smoking Zone (Lakon et al., 2025).

The findings of the SOBAT KTR program are consistent with previous evidence showing that group-based interventions can contribute to smoking prevention among adolescents. Fithria et al. (2023), in a controlled field trial conducted among adolescents in Aceh, found that a Self-Help Group intervention significantly improved knowledge and attitudes and reduced smoking intention and smoking behavior. The similarity between these findings and the SOBAT KTR results suggests that group-based interaction can provide adolescents with opportunities to exchange experiences, discuss smoking-related concerns, and develop shared strategies to prevent smoking. Although the SOBAT KTR activity did not use a pre-test and post-test design, the active participation of adolescents in identifying smoking-related problems and developing peer-support strategies indicates that the group process may facilitate awareness and positive attitudes toward smoking prevention. This finding is particularly relevant in the Indonesian context, where peer-based approaches can be integrated into community health promotion activities.

The role of peer influence identified in the SOBAT KTR activity is also supported by (Littlecott et al., 2023), who found that peer relationships, group belonging, social identity, and interpersonal influence are important social processes associated with adolescent smoking. Their systematic review and meta-ethnography showed that the influence of peers on smoking varies according to the social and tobacco-control context in which adolescents interact. These findings provide an important explanation for the present activity, in which participants identified peer influence, social acceptance, and the surrounding social environment as factors

that may encourage smoking. Therefore, the SOBAT KTR approach attempts to redirect the existing influence of peer groups from a potential risk factor into a protective factor by encouraging adolescents to remind, motivate, and support one another in avoiding smoking. Establishing a social environment in which non-smoking is viewed as a positive and acceptable choice may strengthen the social norms that support Smoke-Free Areas.

The potential of peer-led approaches for smoking prevention is further demonstrated by (Dodd et al., 2022), who evaluated a peer-led smoking prevention program among vocational high school students using a cluster-randomized controlled trial. The intervention trained students as peer educators and involved them in developing smoking prevention activities for their peers. The study reported a significantly lower prevalence of daily smoking in the intervention group at 4, 10, and 16 months compared with the control group. These findings strengthen the rationale for involving adolescents as active participants in smoking prevention rather than positioning them only as recipients of health information. In comparison, SOBAT KTR used peer-group discussions and facilitator-supported sharing to encourage adolescents to develop their own strategies for dealing with peer pressure and refusing invitations to smoke. Although the present activity cannot demonstrate a causal reduction in smoking behavior, the similarity in the use of peer involvement indicates that peer-led strategies may be a relevant component of adolescent tobacco prevention.

Evidence from the South-East Asian region also supports the importance of developing tobacco prevention interventions beyond conventional classroom-based health education. (Bantwal et al., 2025), through a systematic review of tobacco prevention interventions among adolescents in South-East Asia, identified peer-led interventions as one of the approaches used to prevent tobacco uptake. The review also emphasized the importance of interventions that build a broader supportive environment rather than relying solely on conventional classroom education. This perspective is relevant to SOBAT KTR because the program was not limited to delivering information about the dangers of smoking. Instead, it incorporated peer interaction, discussion, refusal strategies, mutual encouragement, and commitment to Smoke-Free Areas. Therefore, the program represents a community-based approach that attempts to connect health education with the social environment in which adolescents make everyday decisions.

The findings are also consistent with the concept of adolescent empowerment through peer education. (Claramita, et al., 2021), through the Indonesian POSBINDU program, demonstrated the potential of empowering adolescents as peer educators to promote healthy habits and improve their understanding of non-communicable disease prevention. This approach positions adolescents as active contributors to health promotion rather than passive recipients of information. Similarly, participants in the SOBAT KTR program expressed willingness to become peer role models and encourage their friends to avoid smoking and support Smoke-Free Areas. This suggests that involving adolescents in identifying problems and developing solutions may strengthen their sense of responsibility toward the health of their peers. Such empowerment may also increase the potential sustainability of the program because health-promoting messages can continue to be reinforced through everyday peer interactions.

Furthermore, the findings can be interpreted within the broader evidence on school-based peer education. (Dodd et al., 2022), in a global systematic review, described peer education as an approach in which young people communicate health information and support to their peers, with the potential to increase engagement because adolescents may prefer discussing health-related issues with peers rather than adults or professionals. This mechanism is reflected in SOBAT KTR, where participants were provided with a non-judgmental environment to express their experiences, discuss peer pressure, and formulate solutions collectively. The use of small peer groups may therefore facilitate more open communication

and active participation. However, the effectiveness of peer education may depend on appropriate facilitation, adequate preparation of peer educators, and a supportive social environment. Therefore, future implementation of SOBAT KTR should consider strengthening facilitator training and developing structured peer-educator roles to maintain the quality and continuity of the program (Fithria et al., 2023).

Taken together, these findings suggest that SOBAT KTR has potential as a community-based peer support approach for adolescent smoking prevention. The strength of the program lies not only in increasing awareness of the dangers of smoking but also in transforming peer relationships into a source of positive social support and reinforcing Smoke-Free Area norms. Nevertheless, the findings should be interpreted cautiously because the present activity used a descriptive-evaluative design without a comparison group or standardized pre-post measurements. Therefore, the observed awareness, participation, and commitment cannot be interpreted as evidence of causal effectiveness. Future studies should employ a quasi-experimental or randomized controlled design with validated measures of knowledge, attitudes, refusal skills, smoking intention, and smoking behavior, as well as longer follow-up periods, to determine the sustained effects of the SOBAT KTR program. This potential is further supported by (Lareyre & Cousson-Gélie, 2024), who evaluated a peer-led smoking prevention program among vocational high school students using a cluster-randomized trial. The study found a lower prevalence of daily smoking among students in the intervention group compared with the control group during follow-up. These findings reinforce the potential of peer involvement to support not only adolescents' awareness but also positive changes in smoking behavior. Similarly, SOBAT KTR encourages adolescents to provide reminders, motivation, and positive role models within their peer groups. Although the present activity cannot establish causal effectiveness, these findings provide additional support for developing peer-based approaches as part of community smoking prevention programs.

CONCLUSION

Peer Group Support is one of the health promotion strategies that shows potential in increasing adolescents' understanding of the dangers of smoking and the importance of implementing a No Smoking Area (Kawasan Tanpa Rokok/ KTR). Through interaction, discussion, and peer support, participants have the opportunity to exchange information, strengthen their understanding, and build mutual awareness about the importance of avoiding smoking behavior. This approach also creates a participatory learning environment in which health messages are more easily accepted by adolescents.

Based on the results of this activity, Peer Group Support demonstrates potential as an approach that can be applied sustainably in health promotion programs in schools and communities. The involvement of peers as agents of change is expected to strengthen a healthy living culture, increase awareness of the dangers of smoking, and support the creation of a conducive environment for preventing smoking behavior among adolescents. However, the findings of this activity should be interpreted with caution because the evaluation was descriptive in nature and did not measure changes in participants' knowledge or attitudes before and after the intervention.

For future health promotion activities, *Peer Group Support can continue to be implemented and integrated into school- and community-based adolescent health programs. In addition, future evaluations are recommended to use a more robust measurement design, such as pre-test and post-test assessments of knowledge and attitudes, and where possible include a comparison group. This will provide stronger evidence regarding the potential impact of *Peer Group Support* on improving adolescents' knowledge, attitudes, and smoking prevention behaviors.

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