



Smoke-Free Generation: A School-Based Smoking Prevention Program at SMPN 29 Bandung

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ABSTRACTS

Introduction: Tobacco use among adolescents is a significant public health issue in Indonesia. Early initiation of smoking increases the risk of long-term addiction and chronic diseases. Adolescents are particularly vulnerable to peer pressure and environmental influences that promote smoking. Therefore, early health education is essential to provide accurate knowledge and build awareness about the dangers of smoking. **Objective:** This community service program aimed to improve students' understanding of the health risks associated with smoking and to promote healthy behaviors among adolescents at SMPN 29 Kota Bandung. The objective was to present scientific information on the effects of smoking and encourage students to reflect critically on its impact. **Method:** The program was conducted at SMPN 29 Kota Bandung with the participation of 60 students. The intervention included: (1) a pre-test to measure students' baseline knowledge, (2) a 60-minute educational session delivered through multimedia presentations, case examples, and interactive discussions covering the effects of smoking on various body systems, (3) a question-and-answer session to address misconceptions, and (4) a post-test to assess changes in knowledge. Educational leaflets were distributed to support ongoing learning at home. **Conclusion:** The activity resulted in a measurable improvement in students' knowledge of the dangers of smoking. Participants were actively engaged and showed increased awareness after the session. These findings underscore the importance of school-based health education programs as an effective approach to prevent smoking among adolescents.

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1. INTRODUCTION

Adolescence is a critical stage in human development, marked by the exploration of identity and behavior patterns that may influence long-term health outcomes. Among these behaviors, tobacco use is particularly concerning due to its addictive nature and the severe health risks associated with it. According to the World Health Organization (WHO), tobacco use is the leading cause of preventable death worldwide, accounting for over 8 million deaths annually, including 1.2 million due to secondhand smoke exposure (WHO, 2023). Most smokers begin their habits before the age of 18, highlighting the need for targeted prevention efforts during early adolescence.

Indonesia ranks among the countries with the highest number of youth smokers. Based on the 2018 Basic Health Research (Riset Kesehatan Dasar), the prevalence of smoking in adolescents aged 10–18 increased from 7.2% in 2013 to 9.1% in 2018 (Kementerian Kesehatan RI, 2018). The problem is exacerbated by widespread social acceptance of smoking, inadequate enforcement of tobacco control policies, and aggressive tobacco marketing targeting youth. Despite existing laws and campaigns, health education on smoking prevention remains limited in schools, particularly in low-income urban areas.

The health effects of smoking are far-reaching, including increased risk of respiratory diseases, cardiovascular complications, cancer, and impaired brain development, particularly when exposure begins in childhood or adolescence (U.S. Department of Health and Human Services, 2014). Furthermore, adolescent smokers are more likely to experience attention deficits, poor academic performance, and long-term dependence on nicotine. Given these risks, schools play a strategic role in providing early, structured health education to prevent smoking initiation among students.

At SMPN 29 Kota Bandung, informal assessments and early data collection revealed a serious knowledge deficit among students regarding the dangers of smoking. A pre-activity assessment showed that 7 out of 10 male students reported being active smokers since elementary school. Furthermore, most students demonstrated a lack of understanding of the short- and long-term consequences of tobacco use. This deficiency was attributed to limited access to accurate information and the normalization of smoking in their social environments, both at home and in the community.

This situation can be analyzed through the lens of the Health Belief Model (HBM), which posits that a person's likelihood of adopting a health-related behavior is influenced by

their perceived susceptibility to a disease, the perceived severity of its consequences, and the perceived benefits of taking preventive action (Rosenstock, 1974). Without adequate knowledge, students are unlikely to perceive smoking as a serious threat to their health, making them more vulnerable to adopting and maintaining the behavior. Effective educational interventions, therefore, must aim to shift these perceptions by providing accurate, relatable, and age-appropriate information.

In light of these challenges, a community service activity was conducted to address the lack of awareness among students at SMPN 29 Kota Bandung. The program aimed to improve students' knowledge of the health risks associated with smoking and to encourage critical thinking about tobacco use. The intervention employed interactive educational strategies, including multimedia presentations and group discussions, to increase student engagement. By improving knowledge and fostering health-conscious attitudes, this initiative aimed to reduce the prevalence of smoking behavior among adolescents and promote long-term well-being.

2. METHODS

The community service program was conducted at SMPN 29 Kota Bandung, targeting students from the 7th and 8th grades. The aim was to address the knowledge deficit regarding the dangers of smoking, as identified through preliminary assessments. The intervention was structured into several stages to engage students effectively and promote a comprehensive understanding of the health risks of tobacco use.

Pre-Test Assessment:

A pre-test was administered to assess students' baseline knowledge about smoking and its associated risks. The test included multiple-choice questions and short-answer items designed to evaluate their awareness of the effects of smoking on the respiratory, cardiovascular, and nervous systems, as well as its addictive nature. The pre-test helped identify knowledge gaps and allowed the instructors to tailor the subsequent educational session to address these specific areas.

Educational Session:

The core of the intervention was a 60-minute health education session delivered using multimedia presentations, case studies, and interactive discussions. The multimedia

presentation included visuals and short video clips that illustrated the long-term health effects of smoking, such as lung cancer, heart disease, and stroke. Real-life case studies were used to provide a relatable context, helping students connect with the information presented. The session also involved interactive discussions where students shared their thoughts and experiences regarding smoking. These discussions were guided by the instructor to challenge students' pre-existing beliefs about smoking and to encourage critical reflection on the health risks involved.

Question-and-Answer Session:

Following the presentation, a Q&A session was held to address students' misconceptions and clarify any doubts. Many students, especially those who were smokers, had misconceptions about smoking, such as the belief that smoking in moderation was harmless or that health problems only occur after many years of smoking. The instructor used evidence-based explanations to correct these misunderstandings and provided clear, science-backed information about the immediate and long-term effects of smoking.

Post-Test Assessment:

A post-test was administered at the end of the session to evaluate knowledge improvement. The post-test was similar to the pre-test but focused on the specific content covered during the educational session. The results of the pre- and post-test were compared to assess the effectiveness of the intervention and measure any increase in students' knowledge about smoking.



Figure 1. Community Services Activity

Distribution of Educational Materials:

Educational materials, including brochures on the risks of smoking and strategies for quitting, were distributed to students. These materials aimed to reinforce the information presented during the session and were designed to be easily understood. They were intended to be shared with students' families, encouraging discussions about smoking and its risks beyond the school environment.

3. RESULTS AND DISCUSSION

The post-test results and observational data from the intervention at SMPN 29 Kota Bandung indicated significant improvements in the students' knowledge and behavior regarding the dangers of smoking. Several key areas were assessed to evaluate the effectiveness of the health education program, including behavior change, knowledge retention, and the ability to explain and describe the harmful effects of smoking.

Increased Adherence to Recommendations:

Post-intervention, there was a noticeable increase in students' behaviors aligning with the smoking prevention recommendations provided during the educational session. Many students expressed an understanding of the importance of avoiding smoking and shared their intentions to avoid starting or continuing the habit. This suggests that the program successfully motivated students to adopt healthier behaviors.

Improved Ability to Explain the Dangers of Smoking:

One of the most significant improvements observed was the students' ability to articulate the dangers of smoking. Before the intervention, many students had limited or vague knowledge about smoking-related diseases. After the session, students were able to more clearly explain the harmful effects of smoking, particularly its impact on the respiratory, cardiovascular, and nervous systems. This indicated that the educational session was effective in conveying critical health information and in enhancing the students' ability to recall and communicate this knowledge.

Increased Ability to Describe the Consequences of Smoking:

Students also demonstrated an enhanced capacity to describe the long-term and immediate health consequences of smoking. They were able to identify specific diseases associated with smoking, such as lung cancer, chronic obstructive pulmonary disease (COPD),

and heart disease. This improvement reflects the success of the program in providing detailed and understandable information that resonated with the students.

Behavior Consistent with Knowledge:

After the session, students were more confident in their ability to apply the knowledge they had gained. Many indicated that they understood not only the risks of smoking but also the importance of maintaining a healthy lifestyle. They reported a stronger commitment to avoiding smoking and expressed an interest in learning more about how to stay healthy, which is a positive indicator of the program's long-term impact.

The results of this community service program demonstrate the positive impact of school-based health education in preventing smoking among adolescents. This intervention successfully increased students' awareness of the health risks associated with tobacco use and promoted healthier behaviors. The significant improvement in students' knowledge and their ability to articulate the dangers of smoking align with findings from previous research (Lestari et al., 2020), which shows that health education programs tailored to adolescents can effectively enhance their understanding and reduce smoking initiation.

The use of multimedia-based learning materials in this program played a pivotal role in ensuring that the message about the dangers of smoking was delivered in a clear, engaging, and impactful way. According to Darmawati (2021), **Video-Based Learning Effect on Smoking Perception in Adolescents**, the use of videos in health education not only captures students' attention but also aids in better retention of health information. This method helped students visualize the detrimental effects of smoking on various body systems, such as the lungs, heart, and brain, reinforcing the message about the health risks of tobacco use.

Moreover, students' ability to explain the harmful effects of smoking improved considerably, as reflected in the post-test results. This is consistent with findings by Widodo et al. (2019), who emphasize that when adolescents are provided with relevant, easy-to-understand health information, they are better equipped to make informed decisions. The increase in students' knowledge about smoking's harmful effects signifies the importance of providing scientifically grounded education that clearly explains the consequences of smoking, making the risks more relatable and understandable to young people.

Furthermore, the increased ability of students to discuss the dangers of smoking aligns with studies by Purnama et al. (2020), which suggest that adolescents are more likely to internalize health information when they can explain it in their own words. The ability to articulate the

risks is a crucial first step in preventing smoking, as it empowers students to not only protect themselves but also to influence their peers by sharing their knowledge. This finding highlights the role of knowledge dissemination in creating a tobacco-free social environment in schools.

An interesting aspect of this program was the improvement in students' ability to recognize the benefits of smoking cessation. According to Darmawati's (2021) REL Healthy School: Health Innovation Through Coordinated School Health Program, it is important to teach adolescents both about the harmful effects of smoking and about practical ways to quit. In our program, students not only learned about the risks of smoking but also gained insights into methods of quitting, such as seeking support and using nicotine replacement therapies. This holistic approach, combining knowledge of both the harm caused by smoking and how to stop, gives students the tools to make healthier choices.

The significant increase in students' ability to identify the risks of smoking and their knowledge of smoking cessation methods demonstrates the effectiveness of interactive learning approaches. Studies such as Sari et al. (2018) highlight the importance of interactive and participatory learning in health education. Our program incorporated question-and-answer sessions that allowed students to express their concerns, clarify doubts, and engage in discussions. This active engagement is essential for helping students retain information and apply it in real-world situations.

The findings also reflect the potential of school-based health programs to instill positive behavioral changes in adolescents. According to research by Wijaya et al. (2019), health education programs that focus on behavior change have a more significant impact on adolescents' long-term health decisions. Our program succeeded in changing students' perceptions of smoking, as evidenced by their increased ability to recognize smoking as a harmful behavior. Students demonstrated greater awareness of the importance of maintaining a healthy lifestyle and avoiding smoking as a means of ensuring their well-being.

The program also served to strengthen the existing health promotion infrastructure in schools. Darmawati (2019) emphasizes that the integration of health education into school curricula is key to creating an environment where students are continuously exposed to health messages. In this case, the school played a vital role in delivering consistent and reinforcing messages about the dangers of smoking, thereby enhancing the effectiveness of the intervention. The involvement of teachers, health professionals, and school administrators was crucial in reinforcing the importance of the messages conveyed during the sessions.

One of the major strengths of the program was the delivery method, which combined visual, auditory, and interactive elements. The combination of multimedia presentations, interactive discussions, and real-life case examples provided a comprehensive approach to health education. According to Purnama et al. (2020), utilizing a variety of teaching methods enhances learning outcomes by catering to different learning styles. This multi-faceted approach ensured that students were not only receiving information but were also actively engaging with the content.

Additionally, the program's focus on practical applications, such as tips for quitting smoking, was an important factor in its success. As emphasized by Lestari et al. (2020), providing adolescents with actionable advice on how to maintain a smoke-free lifestyle is essential for empowering them to take responsibility for their health. By equipping students with the knowledge and skills to make informed decisions about smoking, the program empowered them to resist peer pressure and adopt healthier habits.

Our findings are further supported by research which underscores the importance of starting health education early in the educational process (Darmawati, 2021). By targeting adolescents at a stage when they are still forming their habits and attitudes, we are able to intervene before smoking behaviors are established. This preventive approach is crucial, as studies show that once adolescents begin smoking, it becomes increasingly difficult to quit, and they are more likely to continue smoking into adulthood (Sari et al., 2018).

In conclusion, the success of this community service program demonstrates the effectiveness of school-based health education in raising awareness about the dangers of smoking and promoting healthier behaviors among adolescents. The findings support the need for continued and expanded efforts to integrate smoking prevention programs into school curricula. As Darmawati (2021) and other scholars suggest, school-based health education is a powerful tool in the fight against adolescent smoking. By providing students with the knowledge, skills, and motivation to avoid tobacco use, we can help ensure that future generations grow up to be healthier, smoke-free individuals.

This program also reinforces the need for continuous reinforcement and follow-up activities to ensure that the information and behavior changes achieved are sustained over time. As shown in studies by Widodo et al. (2019) and Purnama et al. (2020), long-term smoking prevention efforts require ongoing engagement with students, their families, and the school community. By maintaining an active focus on smoking prevention and incorporating

health education into school cultures, we can create environments that support adolescents in making healthy choices.

4. CONCLUSION

In conclusion, this community service program successfully enhanced students' knowledge about the dangers of smoking and encouraged healthier behaviors among adolescents at SMPN 29 Bandung. Through the use of multimedia-based learning, interactive discussions, and real-life case examples, students were able to better understand the harmful effects of smoking and the benefits of quitting. The significant improvements in their ability to explain smoking-related health risks and adopt healthier behaviors demonstrate the effectiveness of school-based health education programs. These findings emphasize the importance of integrating smoking prevention efforts into school curricula and suggest that such initiatives can play a crucial role in shaping long-term health behaviors in adolescents.

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