JIKM. 2026; 18 (2): 74-81
DOI: 10.52022/jikm.v18i2.875
p-ISSN: 2085-4366, e-ISSN: 2684-950X

Jurnal Ilmiah Kesehatan Masyarakat
Media Komunikasi Komunitas Kesehatan Masyarakat

Implementing a Smoke-Free Area Policy to Prevent Smoking in Elementary Schools: A Case Study of Sleman Regency

Lina Handayani[1]*, Esti Kurniasih[2], Tri Wahyuni Sukesi[1], Muchsin Maulana[1], Tria Nisa Novianti[1]

[1]Faculty of Public Health, Ahmad Dahlan University, Yogyakarta City, Special Region of Yogyakarta, Postal Code 55166, Indonesia
[2]Sleman Public Hospital, Special Region of Yogyakarta, Postal Code 55514, Indonesia

Abstract

***Background**: The prevalence of smoking among school-aged children in Indonesia has increased markedly, raising serious public health concerns. In response, the Sleman District Government enacted Regent Regulation No. 42 of 2012 on Smoke-Free Areas (Kawasan Tanpa Rokok/KTR) as a preventive strategy. This study evaluates the implementation of the KTR policy in elementary school settings and identifies challenges to its enforcement.*

***Methods**: A qualitative design was employed using semi-structured interviews and direct observations. Data were collected from one official at the Sleman District Education Office, four elementary school teachers, and 10 parents of students, with sampling continued until data saturation was achieved. Source and method triangulation enhanced credibility through interviews, observations, and document reviews. Observations focused on the presence of smoke-free signage and environmental compliance within school premises.*

***Results**: Although the KTR regulation is formally established and supported by visible measures such as banners, posters, and school rules, dissemination and educational efforts remain limited, particularly at the elementary school level. While most stakeholders are aware of the regulation, many lack a comprehensive understanding of its content and objectives. The absence of coordinated socialization and sustained educational initiatives for students and families further constrains effective implementation.*

***Conclusion**: Despite an existing regulatory framework, KTR implementation in elementary schools requires substantial strengthening. Enhanced cross-sector collaboration among education authorities, schools, and parents is critical. Integrating comprehensive, age-appropriate tobacco prevention education into school curricula is essential to deter early smoking initiation and ensure the long-term effectiveness of KTR policy enforcement.*

***Keywords**: Education stakeholders, Elementary school, Smoke-free areas, Smoke-free policy, Smoking prevalence*

INTRODUCTION

Smoking continues to be a significant global public health issue that demands urgent attention. In Indonesia, tobacco use ranks as the fourth leading risk factor for premature mortality and disability, with the country having the highest global rate of male daily smokers. Factors such as an individual's socioeconomic status, including education, income, and occupation, can influence smoking habits.[1,2]

Adolescents face significant pressure to begin smoking. The impact of smoking on the health of children and teenagers is harmful both in their youth and in their adult lives.[3] Adolescents who use tobacco often engage in other risky activities, including participating in physical fights, having multiple sexual partners, consuming alcohol, and using drugs.[4]

Enhancing behavioral control can strengthen students' intention to quit smoking. This, in turn, contributes to broader tobacco control efforts. The effect relies on the principle that an individual's decision to engage in or avoid certain behaviors is influenced not only by personal attitudes and perceived social norms but also by their belief in their ability to manage and control the behavior. [5]

One strategy to control exposure to cigarette smoke is the implementation of Smoke-Free Areas (SFAs) or *Kawasan Tanpa Rokok* (KTR).[6] SFAs offer a clean and healthy environment, effectively guard against the harmful effects of cigarette smoke, and are expected to reduce the number of smokers

Correspondence*: Lina Handayani
E-mail: lina.handayani@ikm.uad.ac.id

Received: December 29th, 2025
Accepted: May 25th, 2026
Published: May 26th, 2026

©2026 **Jurnal Ilmiah Kesehatan Masyarakat: Media Komunikasi Komunitas Kesehatan Masyarakat**
Open access under CC BY NC–SA license. Published by Public Health Department, Faculty of Health Science, Universitas Pembangunan Nasional "Veteran" Jakarta

in a given area.[7] While adopting an official smoke-free policy is beneficial, a significant obstacle to its implementation is the lack of quantifiable data and monitoring tools to ensure the success of these policies.[8]

Indonesia is experiencing a rising prevalence of smoking among school-aged children, posing serious long-term health and social consequences. Sleman District, Yogyakarta, identified as having a relatively high rate of child smokers, has enacted an SFA policy through Regent Regulation No. 42 of 2012. Previous research shows that the effectiveness of regulations is greatly influenced by the quality of implementation in the field and by public awareness of the policy's urgency.

Regent Regulation No. 42 stipulates that smoking, selling, or promoting tobacco products is prohibited on school grounds to protect students and create a healthy learning environment. Despite this law, smoking among school-aged children remains a concern. A 2024 survey in Yogyakarta found that 7.8% of children aged 10–18 were active smokers, with higher rates in rural areas. Boys tend to smoke more than girls, though both groups are affected. The government and schools are responding with stricter supervision and anti-smoking campaigns. However, stronger enforcement, continuous education, and parental involvement are needed to reduce smoking among students. This study examines the extent of the regulation's implementation and explores the challenges that hinder its effectiveness in elementary schools.

METHOD

Participants and Study Design

This study employed a qualitative research design with a case study approach, using purposive sampling to select participants who we deemed relevant and knowledgeable about the research topic. The informants included one official from the Sleman District Education Office as the key informant (R1), two elementary school teachers as main informants (R2–R3), and ten parents of elementary school students as supporting informants (R4–R11). These participants were selected based on their roles and experiences in implementing tobacco-free policies in schools. The research was conducted in the Sleman District in May 2025, aiming to explore in depth the perspectives, experiences, and challenges encountered by stakeholders in enforcing SFA regulations within the elementary education sector. Table 1 describes this research's inclusion and exclusion criteria.

Table 1. The study's inclusion and exclusion criteria

Informants	Inclusion criteria	Exclusion criteria
Stakeholders	1. Education Department officials in Sleman Regency 2. Echelon III and/or IV positions 3. Have been exposed to information about SFAs	1. Being too sick to communicate
Teachers	1. Elementary school teachers with state status under the auspices of the Sleman Regency Education Office 2. Cases of elementary school students smoking in their school	1. Being too sick to communicate 2. Teachers with honorary teacher status
Parents	1. Having students attending elementary schools with state status under the auspices of the education department 2. Children attend the elementary school with the highest reported smoking rate 3. Having a child who has had a smoking problem at school	1. Being too sick to communicate 2. Male 3. Working as a teacher

Measurements and Procedure

Data were collected using semi-structured interviews, non-participant observation, and documentation. Semi-structured interviews served as the primary data source and were conducted with selected participants to obtain in-depth information regarding their perspectives, experiences, and understanding of the implementation of the SFA policy in elementary schools. A flexible interview approach facilitated deeper exploration of participants' responses.

Non-participant observation was conducted with the researcher acting as an external observer, focusing on school facilities and environmental conditions related to policy compliance, such as the presence of smoke-free signage and the overall school environment. We complemented interviews and observations by collecting documentation in the form of visual and written records, including posters, signs, and other forms of communication related to SFA implementation.

This study evaluates the implementation of the SFA policy in elementary school settings and identifies challenges to its enforcement. To enhance data credibility, we used triangulation by cross-checking interview findings against observational data and documentation.

Statistical Analysis

We conducted qualitative data analysis in several stages: data reduction, data display, and forming conclusions. During data reduction, information from interviews, observations, and documentation was selected, categorized, and simplified to focus on issues relevant to the research objectives. The reduced data were then organized into structured formats, such as narratives and thematic groupings, to facilitate interpretation. Finally, we reached conclusions by identifying patterns, meanings, and insights that reflected the actual conditions observed in the field.

RESULTS

Implementation of the SFA Policy in Elementary Schools

Interview results with stakeholders from the Sleman District Education Office indicate that regulations regarding SFAs are already in place:

> *"The Regent Regulation is already established, and the education sector has received it. It can be used for socialization since, so far, there has been no outreach related to smoking in elementary schools. With proper socialization, we hope it will have a positive impact regarding SFA."* (R1)

This statement shows that the implementation of Regent Regulation No. 42/2012 on SFAs in Sleman is underway. The regulation has been distributed to several institutions and is expected to serve as a foundation for promoting awareness and education. The goal of these efforts is to strengthen the policy's impact, especially in educational institutions.

Barriers to Implementation: Inter-Party Communication

The SFA policy has been implemented at the Education Office itself, as evidenced by banners displayed there. Teachers are also aware of the SFA regulation in Sleman District. As one teacher noted:

> *"The Smoke-Free Area regulation in Sleman District has a significant influence, although child smoking is still occasionally found in the area."* (R3)

This statement suggests that while awareness of the regulation is present and the policy holds strong preventive potential, incidents of smoking among school-aged children remain a concern in Sleman.

Limited Joint Monitoring and Evaluation System

Beyond the formal regulation, smoking prevention is also reinforced through school rules. A school principal stated:

"... fortunately, we have not had any cases of student smoking in our school. We do have rules that strictly prohibit smoking." (R2)

Availability and Utilization of Educational Media

Effective smoking prevention also requires a supporting infrastructure. Several schools have already installed posters and banners warning about the dangers of smoking. These visual cues serve as constant reminders to students, as reflected in the following interviews:

"Yes, we have posters and banners stating this is a smoke-free area." (R2)
"Regarding anti-smoking policies, our school has posters explaining the dangers of smoking." (R3)

These posters and banners are commonly displayed in highly visible locations, including school bulletin boards, reinforcing the message of the smoke-free policy.

The Importance of Synergy Between the Education Office, Teachers, and Parents

In addition to support from education authorities and schools, parents also play a vital role in promoting the SFA initiative. Interviews indicate that parents are aware of the regulations, engage in socialization efforts, and support the policy's implementation.

"The regulation I know prohibits smoking in school areas and government offices, reinforced by the Regent's Decree. I've seen no-smoking signs at schools, health centers, and of course, I am committed to ensuring my children do not smoke." (R4)

"Sleman Regent Regulation No. 42 of 2012 on Smoke-Free Areas and Regent Decree No. 46.3/Kep.KHD/A/2019 on the Smoke-Free Task Force apply to public areas, places of worship, educational institutions, and children's playgrounds." (R11)

DISCUSSION

The results indicate that parents play a critical role in preventing smoking among children through their active involvement in the SFA program. Parents who receive adequate information and clearly understand the purpose of these policies are generally more mindful of maintaining smoke-free environments both at home and within the community. They also tend to communicate the harms of smoking to their children and family members, demonstrating a strong commitment to supporting the implementation of smoke-free regulations at the household and community levels.

Implementation of the SFA Policy in Elementary Schools

The implementation of SFA policies in Indonesia has led to notable progress, particularly in the increasing adoption of regional regulations and a reduction in second-hand smoke exposure. However, significant challenges persist, including weak enforcement mechanisms, a high prevalence of smoking, and continued interference from the tobacco industry.[9]

To address these issues effectively, public health professionals and policymakers are encouraged to strengthen the enforcement of smoke-free policies and design targeted interventions aimed at youth, families, and communities to prevent children and adolescents from starting smoking, as studies conducted in China have demonstrated the value of such policies.[10] Evidence also supports the effectiveness of school-based prevention programs in improving students' understanding of smoking risks and fostering anti-smoking attitudes. Culturally relevant approaches—such as those based on Islamic values or general health education—are effective in Aceh and may be applicable to other Muslim-majority settings.[11]

Comprehensive educational interventions within schools, along with smoke-free indoor air policies, are essential strategies to enhance public health outcomes.[12] Widespread public support for smoke-free policies, particularly in areas frequented by children, suggests that there is strong momentum for expanding such regulations to better protect the population from tobacco smoke exposure.[13] Findings from previous studies emphasize that a program is more likely to be accepted by the community when education is delivered consistently and supported by adequate resources.[1]

Barriers to Implementation: Inter-Party Communication

Tobacco control efforts in Indonesia continue to face substantial challenges that extend beyond technical and regulatory limitations. The complexity of bureaucratic systems and limited coordination among key stakeholders—including multiple ministries and government agencies—reflect fragmented governance and unclear accountability structures.[15] At the local government level, conflicting interests, particularly economic dependence on tobacco-related revenue, often result in selective or inconsistent policy implementation, which weakens national tobacco control commitments. These structural constraints are further compounded by insufficient monitoring and enforcement mechanisms, reducing policy deterrence and allowing non-compliance to persist. Moreover, low public awareness and widespread misinterpretation of what constitutes "enclosed areas" under smoke-free regulations indicate deficiencies in policy communication and socialization processes, ultimately diminishing community support and undermining the effectiveness of tobacco control policies.[16]

Limited Joint Monitoring and Evaluation Systems

School-based interventions that incorporate non-monetary penalties and consistent monitoring have been shown to effectively reduce students' likelihood of smoking, with sustained outcomes observed up to 3 months post-intervention.[17] Considering the still-uncertain influence of smoking on neurological pathways, especially in youth, the use of tobacco products among children and adolescents warrants serious attention. For example, a clinical study found that children aged 9–10 years exposed to nicotine products showed significant reductions in cortical area and white matter volume, as well as persistent cognitive performance deficits, suggesting structural and functional impacts on the developing brain.[18] Preclinical research in animal models further supports these concerns: nicotine exposure during adolescence has been shown to alter synaptic plasticity and excitability in cortical neurons, potentially leading to lasting changes in neural connectivity that contribute to dependence and cognitive dysfunction later in life.[19] Additionally, nicotine exposure in early adolescence can interfere with dopaminergic circuit maturation, prolonging immature signaling patterns that heighten vulnerability to addiction and related behavioral disorders. These findings collectively underscore that even limited exposure to tobacco and nicotine during youth may have long-term neurodevelopmental consequences, reinforcing the need for serious public health attention and preventive interventions.[20] Studies recommend that routine tobacco use screening should be integrated into health assessments, particularly in the context of suicide risk evaluations, alongside comprehensive prevention and intervention strategies.[21]

Availability and Utilization of Educational Media

Media should be strategically utilized to positively influence community attitudes and behaviors.[12] Among various educational tools, interactive digital media—such as mobile game applications—have demonstrated high effectiveness in enhancing adolescents' knowledge about smoking, primarily due to their engaging format and easy accessibility. For example, a scoping review found that interactive and visually appealing digital educational media tend to be more effective than traditional media such as video advertisements or printed leaflets in improving adolescents' understanding of smoking dangers, and mobile game-style applications have shown promise in engaging youth in tobacco prevention education.[22] Moreover, a quasi-experimental study of an online videogame intervention reported significant improvements in tobacco-related knowledge and beliefs among adolescents after gameplay, highlighting the value of interactive digital platforms in smoking prevention efforts.[23] While traditional methods like video advertisements and printed leaflets remain useful, they tend to be less impactful than interactive digital platforms.[24]

To further support tobacco control, targeted regulations and public awareness campaigns are needed to reduce children's exposure to second-hand smoke and limit their access to tobacco products. These measures should extend to households, educational settings, retail environments, and online platforms, where tobacco marketing and exposure are still prevalent.[25] Comprehensive smoke-free policies that prohibit smoking in all indoor spaces have been shown to protect nonsmokers—including children—from harmful exposure and can encourage voluntary smoke-free rules in homes and vehicles. These measures should extend to households, educational settings, retail environments, and online platforms where tobacco marketing and exposure remain prevalent, reinforcing both protective environments and prevention messaging for youth. [26]

The Importance of Synergy Between the Education Office, Teachers, and Parents

There is an urgent need for comprehensive and multi-dimensional interventions that integrate stricter enforcement of smoke-free policies, educational initiatives within families and schools, and culturally tailored public health campaigns. Particular attention should be given to families with working mothers and to mitigating peer influence among adolescents, as these are key factors influencing youth smoking.[27] The active involvement of the diverse stakeholders surrounding adolescents is crucial in the development and implementation of such programs.[28]

Strengthening these efforts also requires shifting public perception—emphasizing that cigarettes are not a part of cultural heritage and should be regulated for the sake of public health. While this is partly the government's responsibility, schools must also take a proactive role in monitoring and preventing student access to tobacco, including establishing agreements with nearby retailers to restrict cigarette sales to students, supervising student behavior, and implementing regular health education on the dangers of smoking.[29]

Interventions that involve parents have shown promising results in preventing smoking initiation among children and adolescents, although the quality of evidence supporting these interventions remains moderate.[30] Addressing smoking in adolescents demands collaboration between schools and families. Parents play a vital role by educating their children about the risks of smoking and serving as non-smoking role models. Schools must also intensify awareness efforts through in-depth education and health promotion activities, while adolescents themselves should be encouraged to seek out information and deepen their understanding of the harmful effects of smoking.[26]

CONCLUSION

Although the SFA policy has been formally established, its implementation in elementary school settings remains suboptimal. There is a need to enhance socialization and educational efforts. Local governments should develop cross-sectoral collaborative programs focused on early-age tobacco risk education and strengthening policy enforcement within educational institutions. Strengthening the dissemination of smoke-free regulations within elementary schools must be accompanied by systematic health education initiatives that cultivate awareness among students, educators, and parents regarding the long-term risks of tobacco exposure. In parallel, local governments should be urged to establish cross-sector collaborative frameworks that integrate education, public health, and community stakeholders to advance strategies for preventing tobacco use early in life. Such coordinated governance will not only enhance the sustainability of smoke-free environments but also reinforce the effective enforcement of policies, thereby contributing to healthier educational ecosystems and reducing early tobacco use.

ETHICS APPROVAL

This study received ethical approval from the Ethics Committee of Sleman Regional General Hospital under approval number 180/1259, issued on March 28, 2025.

ACKNOWLEDGEMENTS

The authors would like to express their gratitude to the Sleman District Education Office, participating elementary school teachers, and parents who contributed their time and valuable insights to this study. The authors also appreciate all parties who supported the data collection and implementation of this research.

COMPETING INTEREST

All authors declare that there are no conflicts of interest.

FUNDING

This research received no specific grant from any funding agency in the public, commercial, or not-for-profit sectors.

UNDERLYING DATA

The underlying data supporting the findings of this study are available from the corresponding author upon reasonable request. The data are not publicly available due to privacy and confidentiality considerations concerning the research participants.

DECLARATION OF ARTIFICIAL INTELLIGENCE USE

We confirm that no artificial intelligence (AI) was used at any stage of the study, including data collection, analysis, and visualization. All work in this study was conducted manually by the authors without the assistance of AI-based tools or systems.

REFERENCES

1. Anggreani GN, Nurhayati F, Prianggi H. The relationship between health belief model applications with smoking quitting behavior: A meta-analysis. Journal of Health Promotion and Behavior. 2022;7(3). Available from: https://doi.org/10.26911/thejhpb.2022.07.03.01
2. Nisriina ZN. Active Smokers Health Belief Model. Jurnal Kesehatan Masyarakat Mulawarman. 2024;6(No 1). Available from: http://dx.doi.org/10.30872/jkmm.v6i1.13346
3. Ayuningrum IY, Sudaryanto WT. Smoking behavior in school-aged children in Indonesia: analysis of the 2019 Global Youth Tobacco Survey. Paediatrica Indonesiana (Paediatrica Indonesiana). 2023;63(6). doi:10.14238/pi63.6.2023.506-10
4. Ihyauddin Z, Putri DAD, Tengkawan J, Ekawati FM, Sitaresmi MN. Tobacco Use among School-Age Adolescents in Indonesia: Findings from the 2015 Indonesia Global School-Based Student Health Survey. Korean J Fam Med. 2023;44(6). doi:10.4082/kjfm.23.0010
5. Rachmawati WC, Yunita A, Redjeki ES. Theory of Planned Behavior: Intention to Quit Smoking at Universitas Negeri Malang during Pandemic Covid-19. Jurnal PROMKES. 2023;11(2). doi:10.20473/jpk.v11.i2.2023.245-253
6. Hafied AM, Syam H, Abdul Gani H, Akib H, Rifdan R. Ambiguity in the Policy Implementation of the No-Smoking Area: Evidence from Indonesia [Internet]. 2024 Jun;219–32.
7. Martini S, Artanti KD, Hargono A, Widati S, Ahsan A, Prabandari YS. Association between percentage of smokers and prevalence of smoking attributable morbidity in Indonesia: one decade after implementation of smoke-free area regulation. BMC Public Health. 2022;22(1). doi:10.1186/s12889-022-14435-8
8. Fauzi R. Indonesia launches innovative smoke-free area dashboard to protect public health [Internet]. 2023 [cited 2025 Jul 26]. Available from: https://www.who.int/indonesia/news/detail/18-07-2023-indonesia-launches-innovative-smoke-free-area-dashboard-to-protect-public-health
9. Mayansara A, Yanti SD, Anita F. Implementation of the No Smoking Area (KTR) Rule : Progress, Setbacks, and Future Projections of Tobacco Control. International Journal of Science Technology and Health Review Article [Internet]. 2025;3(1):1–8. Available from: https://doi.org/10.63441/ijsth.v3i1.23
10. Huang C, Koplan J, Yu S, Li C, Guo C, Liu J, et al. Smoking Experimentation among Elementary School Students in China: Influences from Peers, Families, and the School Environment. PLoS One. 2013;8(8). doi:10.1371/journal.pone.0073048
11. Tahlil T, Woodman RJ, Coveney J, Ward PR. The impact of education programs on smoking prevention: A randomized controlled trial among 11 to 14 year olds in Aceh, Indonesia. BMC Public Health. 2013;13(1). doi:10.1186/1471-2458-13-367
12. Zubair OA. Prevalence of Smoking Among School Students in Iraq. Cureus. 2024 Aug 17. doi:10.7759/cureus.67048
13. Boderie NW, Sheikh A, Lo E, Sheikh A, Burdorf A, van Lenthe FJ, et al. Public support for smoke-free policies in outdoor areas and (semi-)private places: a systematic review and meta-analysis. EClinicalMedicine. 2023;59. doi:10.1016/j.eclinm.2023.101982
14. Pradini MR, Maritasari DY, Nurdiansyah TE. Evaluasi Program Inovasi " Ngasi Kuy " dalam Upaya Peningkatan Capaian Pemberian ASI Eksklusif. Jurnal Ilmiah Kesehatan Masyarakat: Media Komunikasi Komunitas Kesehatan Masyarakat. 2024;16(2):71–81.
15. Astuti PAS, Assunta M, Freeman B. Why is tobacco control progress in Indonesia stalled? - A qualitative analysis of interviews with tobacco control experts. BMC Public Health. 2020;20(1). doi:10.1186/s12889-020-08640-6
16. Sufri S, Nurhasanah N, Ahsan A, Saputra I, Jannah M, Yeni CM, et al. Barriers and opportunities for improving smoke-free area implementation in Banda Aceh city, Indonesia: a qualitative study. BMJ Open. 2023;13(12). doi:10.1136/bmjopen-2023-072312
17. Triyana M, White JS. Non-monetary incentives for tobacco prevention among youth in Indonesia. J Health Econ. 2022;83. doi:10.1016/j.jhealeco.2022.102620
18. Laviolette SR. Understanding the Association of Childhood Tobacco Use With Neuropathological Outcomes and Cognitive Performance Deficits in Vulnerable Brains. JAMA

Netw Open. 2022 Aug 1;5(8):e2226001–e2226001. doi:10.1001/JAMANETWORKOPEN.2022.26001 PubMed PMID: 35947387.
19. Toyoda H. Nicotine Exposure during Adolescence Leads to Changes of Synaptic Plasticity and Intrinsic Excitability of Mice Insular Pyramidal Cells at Later Life. Int J Mol Sci. 2022;22(34).
20. Reynolds LM, Gulmez A, Fayad SL, Campos RC, Rigoni D, Nguyen C, et al. Transient nicotine exposure in early adolescent male mice freezes their dopamine circuits in an immature state. Nature Communications . 2024;15(1):1–19. doi:10.1038/s41467-024-53327-w PubMed PMID: 39424848.
21. Lee PH, Tervo-Clemmens B, Liu RT, Gersten MB, Jung JY, Janes AC, et al. Use of Tobacco Products and Suicide Attempts among Elementary School-Aged Children. JAMA Netw Open. 2024;7(2). doi:10.1001/jamanetworkopen.2024.0376
22. Saputri MSK, Sari SP, Mustofa SB, Lestantyo D. Using Educational Media to Prevent Adolescent Smoking and Raise Health Awareness: A Meta-Analysis. Jurnal Promkes: The Indonesian Journal of Health Promotion and Health Education. 2024 Aug 1;12(SI2):192–202. doi:10.20473/JPK.V12.ISI2.2024.192-202
23. Hieftje KD, Fernandes CSF, Lin IH, Fiellin LE. Effectiveness of a web-based tobacco product use prevention videogame intervention on young adolescents' beliefs and knowledge. Subst Abus. 2021;42(1):47–53. doi:10.1080/08897077.2019.1691128 PubMed PMID: 31825759.
24. Saputri MSK, Sari SP, Mustofa SB, Lestantyo D. Using Educational Media to Prevent Adolescent Smoking and Raise Health Awareness: A Meta-Analysis. Jurnal Promkes: The Indonesian Journal of Health Promotion and Health Education. 2024 Aug 1;12(S12):192–202. doi:https://doi.org/10.20473/jpk.V12.ISI2.2024.192-202
25. Mazi A. Determinants of ever smoking and active smoking among school-aged children in Jeddah. J Taibah Univ Med Sci. 2023;18(5). doi:10.1016/j.jtumed.2023.03.005
26. Tauho KD, Gulo N. Smoking Behaviors of Junior High School Students. An Idea Nursing Journal ISSN. 2:2023.
27. Mazi AA. Second-hand smoke exposure among school children during COVID-19 in Jeddah. J Taibah Univ Med Sci. 2025 Jun 1;20(3):335–48. doi:10.1016/j.jtumed.2025.05.006
28. Benjakul S, Nakju S, Thitavisiddho W, Junjula T. Using an ecological model of health behaviour to identify factors associated with smoking behaviour among Buddhist novices in Thailand: a cross-sectional digital survey. BMJ Open. 2024 Apr 15;14(4). doi:10.1136/bmjopen-2023-082734 PubMed PMID: 38626965.
29. Hartono RK, Meirawan RF, Nurhasana R, Dartanto T, Satrya A. Retailer's Density and Single Stick Cigarette's Accessibility among School-Age Children in Indonesia. Asian Pacific Journal of Cancer Prevention. 2023;24(2). doi:10.31557/APJCP.2023.24.2.675
30. Rifat MA, Orsini N, Qazi B, Galanti MR. Smoking Prevention and Cessation Programs for Children and Adolescents Focusing on Parental Involvement: A Systematic Review and Meta-Analysis. Journal of Adolescent Health. Elsevier Inc.; 2025. p. 532–41. doi:10.1016/j.jadohealth.2024.10.032 PubMed PMID: 39736054