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Nicotine trails in schools: Smoking behavior among junior high school students in Indonesian tobacco production areas

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ABSTRACT

The future of the Indonesian is now seriously threatened by the high incidence of smoking behaviors among Indonesian adolescents. This study aimed to investigate the prevalence and factors associated with smoking behavior among high school students residing in tobacco-producing regions in Indonesia. Students' smoking behaviors, sociodemographic traits, and exposure to tobacco marketing were all gathered through a cross-sectional survey. In order to participate in this study, 210 junior high school students answered questions about their smoking habits. The results showed nearly one in five students reported currently smoking (19%), while 22.9% had experimented with smoking but had already quit. More than half of the students (51.9%) reported having received at least one offer to smoke, suggesting strong social exposure to smoking within their environment. Among students who smoked, the most common motivations were the appealing taste of cigarettes (35%) and the desire to appear cool (23%), while stress relief (33.3%) was the primary reason for continuing the behavior. These results highlight how crucial it is to apply evidence-based tobacco control measures in these areas in order to lower the prevalence of adolescents smoking. The findings have implication for educators and parents to monitor tobacco use and provide assistance in quitting tobacco usage.

Keywords: adolescents; school; smoking behavior; tobacco production area.

1. INTRODUCTION

Cigarette consumption remains a major global public health challenge, contributing to more than 8 million deaths annually and substantial economic losses worldwide. Approximately 1.1 billion people smoke globally, with nearly 5 trillion cigarettes consumed each year, resulting in over US $2 trillion in economic damage. Tobacco use disproportionately affects low- and middle-income countries, where around 80% of the world's 1.3 billion tobacco users reside. In addition to active smoking, exposure to secondhand smoke causes significant harm, accounting for an estimated 1.2–1.3 million deaths annually (Yousuf et al., 2020). Long-term evidence also shows that smoking-related diseases have caused tens of millions of deaths in developed countries, with smokers losing approximately one decade of life expectancy compared to non-smokers (Jha, 2020).

Adolescence represents a critical period in the initiation of smoking behavior, with nearly 80% of smokers beginning before the age of 18. At this stage, smoking behavior is shaped by a complex interaction of individual, social, and psychological factors. Previous studies have identified determinants such as nicotine dependence, peer influence, parental smoking, and socioeconomic background. Additionally, emotional regulation difficulties and stress coping mechanisms play a role in increasing smoking tendencies among adolescents (Tezera & Endalamaw, 2019). Once smoking behavior is established, it becomes increasingly difficult to stop due to the addictive nature of nicotine, increasing the likelihood that smoking persists into adulthood.

Gender differences also contribute to variations in adolescent smoking behavior. Studies indicate that males tend to have higher smoking rates due to stronger external influences and lower awareness, while females are often constrained by cultural norms and stigma (Gana et al., 2018; Nketiah-Amponsah et al., 2018). However, emerging evidence suggests a growing trend of smoking among adolescent females, particularly those experiencing mental health challenges (Lawrence et al., 2022). Globally, the ratio of male to female adolescent smokers remains approximately 2:1, although this gap varies across cultural contexts (Liang et al., 2022).

Despite extensive research on individual and social determinants, the role of environmental and structural contexts particularly in tobacco-producing regions remains underexplored. This limitation is critical, as environmental exposure may shape not only accessibility to tobacco but also social norms and perceptions regarding smoking behavior.

Indonesia represents a highly relevant setting, as it is one of the largest tobacco-producing countries in the world. In regions such as Temanggung, where tobacco farming is a primary economic activity, tobacco production is deeply embedded in community life. In such contexts, cigarettes are more readily available, and tobacco-related practices are normalized within daily social interactions, potentially increasing adolescents' exposure to smoking.

Previous studies have shown that individuals living in tobacco-producing areas tend to exhibit higher smoking prevalence and greater exposure to tobacco compared to those in non-producing regions (Cai et al., 2012). In Indonesia, smoking prevalence among adolescents in certain tobacco-producing areas has been reported to exceed national averages (Binita et al., 2016). However, most existing studies in Indonesia focus on general or urban adolescent populations, with limited attention to the unique socio-environmental dynamics of tobacco-producing communities.

This gap is important because adolescents in these regions may experience a distinct interaction between environmental exposure, social norms, and accessibility to tobacco products. Such conditions may reinforce smoking behavior beyond individual-level determinants, suggesting the need for a more context-sensitive analytical approach.

Therefore, this study aims to examine the prevalence of smoking behavior among junior high school students in a tobacco-producing region in Indonesia and to identify the individual, family, and environmental factors associated with smoking. By focusing on adolescents in tobacco-producing communities, this study seeks to provide context-specific evidence to support the development of targeted prevention strategies and strengthen tobacco control efforts in high-risk environments.

2. METHOD

2.1. Research Design

This study employed a quantitative descriptive survey design to examine the prevalence and patterns of smoking behavior among adolescents in a tobacco-producing region. A descriptive approach was considered appropriate as the study aims to provide an empirical overview of smoking behavior without testing causal relationships. This design is commonly used in prevalence studies to identify behavioral trends and distributions within a specific population.

2.2. Participants and Sampling Technique

The study involved 210 junior high school students in Temanggung Regency, Indonesia. Participants were selected using a non-probability sampling technique, specifically convenience sampling. This approach was chosen due to practical considerations, including accessibility to participants and the need for coordination with school authorities, particularly guidance and counselling teachers.

Although convenience sampling limits generalizability, it is considered appropriate for exploratory and descriptive research focusing on behavioral prevalence (Etikan et al., 2016). In the context of this study, it allows for the efficient collection of initial empirical data on adolescent smoking behavior within a specific socio-environmental setting, namely a tobacco-producing region.

Participants were recruited through school-based coordination, where guidance counsellors informed students about the study and invited voluntary participation. Inclusion criteria included active enrollment as a student and willingness to participate. Respondent characteristics were recorded, including age, gender, grade level, and parents' occupation, to provide contextual understanding of the sample.

2.3. Research Instrument

Data were collected using the *Smoking Behaviour Prevalence Instrument* developed by Eliasa and Afanin (2023). The instrument consists of 15 items combining closed-ended and open-ended questions, designed to capture both quantitative trends and contextual insights into smoking behavior.

The instrument categorizes respondents into three groups: non-smokers, current smokers, and former smokers. It explores several dimensions of smoking behavior, including exposure to smoking invitations, motivations for smoking, types of cigarettes used, perceived sensations, and reasons for continuing or discontinuing smoking.

Prior to use, the instrument had undergone initial development and content validation by experts in guidance and counselling and adolescent behavior. This ensures that the items are relevant and aligned with the study objectives.

2.4. Data Analysis

Data analysis was conducted using descriptive statistical techniques. The analysis process involved several stages: data collection, data coding, data cleaning, and data tabulation. Quantitative data were analyzed using frequency distributions and percentages to describe the prevalence and patterns of smoking behavior among respondents.

Open-ended responses were analyzed using simple thematic categorization to complement quantitative findings and provide contextual interpretation of adolescents' smoking experiences. This combination of quantitative and qualitative descriptive analysis enhances the depth of understanding of the phenomenon.

2.5. Ethical Considerations

This study adhered to ethical standards in social and educational research. Informed consent was obtained from all participants prior to data collection, with clear explanations regarding the purpose of the study, confidentiality of responses, and the voluntary nature of participation. Participants were informed of their right to withdraw at any time without consequences.

All data were collected anonymously to ensure respondent privacy. In addition, the research process was conducted with permission from the school authorities and in coordination with guidance and counselling teachers.

3. RESULT AND DISCUSSION

3.1. Demographic Characteristics

The number of participants was nearly equal between males and females, as shown in Table 1. The majority of respondents were aged 13–14 years and were predominantly in grade IX. Most parents worked as vegetable farmers, tobacco farmers, or in other informal sectors. Given that respondents lived in a tobacco-producing area, many parents were directly or indirectly involved in tobacco-related occupations.

Table 1. Respondents Demograpics

Information	n (%)
Gender:	
Female	94 (44,8%)
Male	116 (55,2%)
Age:	
12 years old	12 (5,7%)
13 years old	65 (31%)
14 years old	78 (37,1%)
15 years old	46 (21,9%)
16 years old	7 (3,3%)
17 years old	2 (1%)
Grade:	
VII	53 (25,2%)
VIII	53 (25,2%)
IX	104 (49,5%)
Parents' job:	
Vegetable farmer	60 (28,6%)
Tobacco farmer	25 (11,9%)
Self-employed	22 (10,5%)
Non-vegetable farmer	17 (8,1%)
Traders	10 (4,8%)
Businessman	9 (4,3%)
Tobacco/cigarette traders	7 (3,3%)
Other	60 (28,5%)

Source: Processed from primary data (2023)

Table 1 shows that most students' parents were farmers, particularly vegetable and tobacco farmers, reflecting the geographical and socio-economic conditions of Temanggung Regency. Located on the slopes of Mount Sindoro, the region's climate supports agricultural activities. These findings indicate that adolescents in this study are embedded in an agrarian socio-economic structure where tobacco is not only an economic commodity but also part of daily life. This contextual exposure is important, as it may normalize smoking behavior and increase adolescents' familiarity with tobacco products, supporting the ecological perspective that behavior is shaped by environmental context.

According to Table 1, most respondents are in early adolescence, a developmental stage characterized by vulnerability to risk-taking behaviors. Junior high school students who initiate smoking at an earlier age are more likely to continue smoking into adulthood (Azagba et al., 2020). Smoking behavior may also negatively affect academic outcomes and motivation (Larasati et al., 2019). This suggests that early adolescence represents a critical intervention window, where preventive strategies should be targeted before smoking behavior becomes habitual and difficult to reverse.

3.2. Junior High School Smoking Behavior

Table 2. Junior High School Smoking Behavior

Topic	n (%)
Students have tried smoking and still smoke	48 (22,9%)
Students have tried smoking, but don't smoke anymore	40 (19%)
Students know about smoking, but have never tried smoking	100(47,6%)
Students never know about cigarettes and have never tried	22 (10,5%)

Source: Processed from primary data (2023)

Table 2 shows that 22.9% of students are active smokers, 19% are former smokers, 47.6% have never smoked but are aware of cigarettes, and 10.5% have never been exposed to smoking.

As displayed in Table 2, most respondents are aware of smoking, although levels of experience vary. Importantly, the combined proportion of current and former smokers (41.9%) indicates a substantial level of experimentation and exposure among adolescents. This suggests that smoking behavior in this population may follow a transitional pathway from awareness to experimentation and potentially to habitual use.

Table 2 also shows that many non-smokers have received offers to smoke, indicating that exposure to smoking is already present even among those who have not initiated the behavior. Adolescents may obtain cigarettes from social sources such as friends or family members, and those who are raised in environments where smoking is common tend to have easier access to cigarettes and more frequent exposure to smoking behavior (Sargent & DiFranza, 2003). In this context, adolescent smoking behavior is significantly shaped by peer pressure and social networks. This finding is important because adolescents who engage in experimental smoking are at significant risk of developing cigarette addiction in adulthood. In addition, smoking behavior may also be influenced by adolescents' limited ability to refuse cigarette offers, as well as other vulnerability factors such as poor academic performance and low self-esteem. Agustang explains that adolescents may respond to smoking offers in different ways, either by directly accepting them or by accepting them conditionally under certain circumstances.

Taken together, these findings reinforce the role of social influence in smoking initiation. Repeated exposure to smoking offers and behavioral modeling may gradually reduce adolescents' resistance and normalize smoking practices, which is consistent with social learning theory. This suggests that smoking initiation should not be viewed solely as an individual choice, but rather as a socially mediated process shaped by interactions within adolescents' immediate environment.

This phenomenon raises further concern because adolescents are particularly susceptible to influence during their exploratory developmental phase. Moreover, weak enforcement of age restrictions on cigarette sales may increase accessibility for underage individuals (Clark et al., 2000). Therefore, both social exposure and structural factors, such as regulatory gaps, appear to jointly facilitate adolescents' access to cigarettes, ultimately increasing the likelihood of smoking initiation.

3.3. Non-Smoker

Table 3. Identification of Non-Smoker

Topic	(%)
Receiving offer to smoke:	
Once	51,9%
Never	48,1%
Reasons not to smoke:	
Not interested	27%
Fear of the dangers of smoking	18%
Obey parental rules	17%
Don't want to smoke	17%
Fear of being rebuked by parents	11%
Fear of being reprimanded by the teacher	6%
Significant others' suffering from a smoking-related disease	4%
Friend's response:	
Just normal	83%
Praised	11,8%
Bullied	6,5%
Excommunicated	5,4%

Source: Processed from primary data (2023)

Table 3 shows that non-smokers often refuse smoking offers, mainly due to fear of health risks, adherence to parental rules, and lack of interest. Non-smoker adolescents also reported additional reasons, such as concern about the dangers of smoking and the influence of significant others who have experienced smoking-related diseases. Notably, these reasons are largely externally driven (e.g., fear of punishment and obedience to authority figures), indicating that non-smoking behavior may not yet be fully internalized as a personal value. This suggests a potential vulnerability, where such behavior may change if external controls are reduced or removed.

Awareness of smoking risks plays an important role in shaping adolescents' attitudes toward smoking (Shabir et al., 2013). Exposure to educational campaigns, school-based programs, and information from media and the internet has contributed to increasing adolescents' understanding of the harmful effects of smoking, including risks of lung cancer, heart disease, and respiratory disorders. This increased awareness appears to reduce curiosity and lower adolescents' intention to engage in smoking behavior (Shabir et al., 2013).

In addition to knowledge, family influence also serves as a key protective factor. Adolescents who grow up in non-smoking family environments are more likely to perceive smoking as undesirable, whereas those exposed to smoking family members may be more vulnerable to initiation. Parents who provide guidance through communicative and supportive approaches, while maintaining warmth within the family, can effectively prevent adolescent smoking behavior (Sanjiwani & Budisetyani, 2014).

Furthermore, adolescents with stronger behavioral control and self-regulation are more likely to resist smoking and maintain their intention not to smoke. From a behavioral perspective, this indicates that strengthening internal factors such as self-efficacy and personal health beliefs is essential for long-term prevention, as reliance solely on external control mechanisms may not be sufficient to sustain non-smoking behavior.

3.4. Smokers

Table 4. Identification of Smokers

Topic	%
Reasons for smoking:	
Appealed by the taste of cigarettes	35%
Want to look cool	23%
Imitate parents	15%
Receiving smoking offers from others	12%
Imitate relatives	6%
Join friends	6%
Interested in cigarette ads	3%
Types of cigarettes used:	
Hand-rolled cigarettes	39%
Regular Cigarettes	37%
Clove Cigarettes	19%
E-cigarette	5%
Feelings when smoking:	
Just normal	40%
Relaxed	32,3%
Comfortable	13,8%
Happy	7,7%
Lightheaded sensation	6,1%
Reasons for still smoking:	
Relieve stress	33,3%
Alleviate loneliness	18,9%
Pleasant sensation	13,3%
Offered by friends / acquaintances	8,9%
Offered by Family members	6,7%
Increase confidence	6,7%
Feel more mature	4,5%
Feel more masculine	4,5%
Feel cooler	2,2%
Got recognition	1%

Source: Processed from primary data (2023)

Table 4 shows that adolescents smoke due to taste preference, desire to appear cool, imitation of parents, and social influence. Most respondents reported neutral or positive sensations (relaxed, comfortable, happy) when smoking. Mulyani and Lestari (2015) also found that adolescents perceive smoking as calming and refreshing. This indicates that smoking behavior is reinforced not only by social factors but also by perceived psychological benefits, particularly emotional regulation and stress coping.

Smoking is associated with emotional and behavioral problems (Giannakopoulos et al., 2010), and anxiety in early adulthood is linked to adolescent smoking (Moylan et al., 2013). Adolescents often perceive smoking as a way to relieve stress (Komasari & Helmi, 2000), although evidence shows it may increase anxiety and stress (Lawless et al., 2015; Choi et al., 2015; Perski et al., 2022). This contradiction highlights a cognitive misperception, where adolescents believe smoking provides relief despite its harmful psychological effects. Addressing this misperception is essential in intervention strategies.

Curiosity about cigarettes also accounts for adolescents' smoking behavior (35%) in this research. Previous studies have shown that curiosity is a reliable predictor of susceptibility to smoking and the transition to established smoking behavior among adolescents (Portnoy et al., 2014). For instance, 10.3% of middle and high school students in the United States reported being curious about smoking cigarettes (Ilesanmi & Afolabi, 2022). Adolescents who are inclined to seek new experiences and challenges as part of self-exploration are more likely to engage in experimental smoking. Curiosity is also associated with a broader tendency to engage in risky behaviors, particularly when combined with limited understanding of healthy lifestyles and insufficient skills to resist peer pressure. In addition, adolescents' belief in their own resilience and desire to explore novel experiences may further encourage experimentation with smoking. Taken together, these findings suggest that curiosity is not merely an individual trait but part of a developmental process in which adolescents actively explore identity and new experiences, thereby increasing their vulnerability to smoking initiation.

In addition to curiosity, adolescents reported smoking due to the desire to have fun, imitate parents or peers, respond to smoking offers, and be influenced by cigarette advertisements. These behaviors indicate that smoking is embedded within social interactions and role modeling processes. Adolescents may smoke not only out of curiosity but also to imitate significant others and understand the perceived attractiveness of smoking. Accordingly, adolescent smoking behavior is strongly shaped by social processes and influential agents within their environment (Rachmat et al., 2013), including social norms, peer pressure, and family and school contexts (Lakon et al., 2010; Lin et al., 2023).

Adolescents often experience a strong need to belong and to be accepted by their peers, which may lead them to adopt behaviors perceived as "cool" or socially desirable. Most male adolescents, for example, associate smoking with power, masculinity, and maturity. This tendency to conform to peer group norms increases vulnerability to environmental influences and risky behaviors such as smoking, which is consistent with findings that environmental modeling can trigger smoking behavior (Septiana & Syahrul, 2016). This indicates that smoking behavior among adolescents is closely tied to identity formation and social acceptance, where smoking functions as a symbolic behavior used to negotiate status and belonging within peer groups.

Family factors play a significant role in shaping adolescents' smoking behavior. Adolescents who are frequently exposed to smoking within the family environment are more likely to initiate smoking (Barman et al., 2004), particularly when parents are nicotine-dependent or when exposure occurs over a long period (Mays et al., 2014). In addition, receiving smoking offers from family members or observing smoking behavior at home may reduce adolescents' ability to resist smoking (Mirnawati et al., 2018; Sutha, 2016). Gender-specific patterns further indicate stronger associations between maternal smoking and daughters, and paternal smoking and sons (Alves et al., 2017). Earlier findings also show that adolescents with smoking parents, siblings, or peers face significantly higher risks of becoming smokers (Sirait et al., 2002). These findings suggest an intergenerational transmission of smoking behavior, where the family functions not only as a source of exposure but also as a primary context for behavioral modeling.

Beyond the family, the broader social environment reinforces smoking behavior. Peer influence has been identified as a key determinant, often exerting a stronger effect than parental influence (Scalici & Schulz, 2017). Adolescents may smoke to maintain social bonds (Anggraeni, 2019) or due to direct invitations and pressure from peers (Liem, 2014). Through daily interactions, adolescents tend to emulate peer behaviors, particularly in their effort to gain social acceptance (Saari et al., 2014), while positive perceptions of smoking further increase its likelihood (Lin et al., 2023). This indicates that smoking behavior is socially constructed and diffused within peer networks, where acceptance and identity formation play a central role.

In addition to social influences, emotional factors also contribute to smoking behavior. Adolescents in this study reported maintaining smoking as a way to cope with loneliness and enhance feelings of happiness. Limited social connections have been associated with increased loneliness and smoking behavior (Dyal & Valente, 2015), while smoking may function as a coping mechanism for emotional emptiness or a means of seeking attention (Martini, 2014). However, this reflects a maladaptive coping strategy, where temporary pleasurable effects (e.g., dopamine release) reinforce continued smoking despite its negative consequences.

Furthermore, smoking is often linked to identity construction. Adolescents associate smoking with self-confidence, masculinity, and social recognition, consistent with findings that smoking enhances perceived social identity and attractiveness (Wibawa, 2013). In Southeast Asian contexts, smoking is closely tied to masculine norms, and adolescents may internalize smoking as part of their gender identity (Hadisuyatmana et al., 2020). Similarly, smoking behavior has been associated with perceptions of masculinity, social solidarity, and stress relief, as well as a maladaptive response to anxiety and life challenges (Ferinadia et al., 2019).

Overall, these findings indicate that adolescent smoking behavior is shaped by a complex interplay of familial exposure, peer influence, emotional regulation, and identity formation. This highlights that smoking is not merely an individual choice but a socially and psychologically embedded behavior. Consequently, prevention efforts should move beyond restrictive approaches and focus on strengthening adolescents' risk awareness, decision-making skills, and emotional coping capacities.

3.5. Former Smokers

Table 5. Identification of Former Smokers

Topic	%
Time to quit smoking:	
< 1 month	39%
1 < 3 Months	23%
3 < 6 Months	6%
6 Months < 1 Year	32%
Reasons to quit smoking:	
Aware of the dangers and effects of smoking	27%
Significant others suffer/die from smoking-related diseases	5%
reprimanded by the teacher	5%
rebuked by parents	17%
No need for cigarettes anymore	24%
Uninterested in smoking	22%

Source: Processed from primary data (2023)

Table 5 shows that most adolescents who quit smoking did so within a relatively short period (less than one month), although some required up to one year. The main reasons for quitting include awareness of the dangers of smoking, decreased interest in cigarettes, and the perception that cigarettes are no longer needed. This pattern suggests that adolescent smoking behavior remains relatively unstable and reversible, indicating a critical window for intervention before smoking becomes a long-term habit.

Awareness of smoking risks appears to be a central factor influencing adolescents' decision to quit. This finding is consistent with previous studies showing that knowledge about smoking-related health

risks positively shapes attitudes toward smoking (Nuradita, 2013). Conversely, limited knowledge and misperceptions about smoking dangers are associated with lower awareness and reduced intention to quit. Educational interventions that enhance health literacy have also been shown to increase adolescents' intention to stop smoking (Lee et al., 2022), while greater knowledge is linked to stronger commitment to quitting (Gobel et al., 2020). However, variations in knowledge levels may produce different attitudinal outcomes, as students with limited understanding tend to show weaker negative attitudes toward smoking compared to those with more comprehensive knowledge (Rahmadi et al., 2013).

These findings indicate that knowledge functions as a cognitive foundation for behavior change, but it must be sufficiently internalized to translate into sustained smoking cessation. In this regard, effective education and social support play a crucial role in reducing adolescent smoking rates (Park, 2011). Providing accurate and comprehensive information about smoking dangers is particularly important during adolescence, a stage characterized by exploration and susceptibility to misinformation (Wulandari, 2017). Furthermore, health education can facilitate behavior change by strengthening adolescents' intention to quit, reducing smoking intensity, and promoting healthier lifestyles (Purnawan et al., 2022).

Beyond individual knowledge, social influences particularly from parents and teachers also play a significant role in shaping adolescents' decisions to quit smoking. Parents and teachers can regulate adolescent behavior through supervision, guidance, and positive role modeling (Virtanen et al., 2009; Etrawati, 2014). Emotional support and encouragement from parents have also been shown to assist adolescents in quitting smoking (Thomas et al., 2015). However, punitive approaches, such as reprimands or harsh discipline, may have unintended consequences by reinforcing smoking behavior, as adolescents may perceive such responses as tolerance or inconsistency (Sanjiwani & Budisetyani, 2014). This suggests that supportive and communicative parenting strategies are more effective than punitive approaches in promoting smoking cessation among adolescents.

The cultural context further strengthens this dynamic. In Indonesia, where collectivist values and filial obedience are strongly emphasized, adolescents tend to comply with parental expectations. At the same time, parents often combine control with explanation and discussion to guide adolescent behavior. The effectiveness of such socialization practices has been linked to higher levels of adolescent self-control, which in turn reduces engagement in risky behaviors, including smoking. Therefore, smoking cessation among adolescents should be understood not only as an individual cognitive process but also as a socially and culturally embedded phenomenon, where family dynamics and cultural norms play a central role.

Overall, these findings highlight that successful smoking cessation in adolescence is influenced by the interaction between cognitive factors (knowledge and awareness), social support (parents and teachers), and cultural context. This implies that prevention and intervention strategies should adopt a comprehensive approach that integrates health education, family involvement, and culturally sensitive communication to achieve more sustainable outcomes.

4. CONCLUSION

This study shows that smoking behavior among junior high school students in tobacco-producing areas is influenced by a combination of individual, social, and environmental factors. Exposure to smoking offers, peer influence, and the availability of cigarettes in the surrounding environment play a role in shaping the initial smoking experience of some students. In addition, motivations such as curiosity, the desire to look more attractive, and attempts to cope with stress also reinforce the continuation of smoking behavior. These findings indicate that smoking behavior among adolescents cannot be separated from the social and cultural context of communities that are closely involved in tobacco production.

On the other hand, awareness of the dangers of smoking, reprimands from parents and teachers, and a decline in interest in cigarettes are important factors that encourage students to quit smoking. Therefore, prevention efforts need to be carried out comprehensively through strengthening health education in schools, increasing the role of families in monitoring adolescent behavior, and developing intervention programs that take into account the social and economic conditions of communities in tobacco-producing areas. A more contextual approach is expected to support more effective tobacco control strategies for adolescents in these areas.

Ethical Approval

This study does not require ethical approval..

Informed Consent Statement

Informed consent was obtained from all participants involved in the study. For participants under the age of 18, consent was also obtained from their parents or legal guardians prior and also their teachers to participation.

Authors' Contributions

AH and EIE contributed to conceptualization. AH, EIE, and FIS contributed to methodology. EIE and FIS contributed to validation. AH, EIE, and FIS contributed to formal analysis. AH contributed to resources. AH and EIE contributed to writing – original draft preparation. FIS contributed to writing – review and editing.

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