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Parental Relationships, Peer Interaction, and Ease of Access to Obtaining Cigarettes on Smoking Habits in Adolescents in the PGRI Cikampek Vocational School Environment in 2024

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ABSTRACT

Background & Objective: This study aims to analyze the factors that influence smoking habits among teenagers in Vocational High Schools (SMK). This research explores the relationship between variables such as parental relationships, peer interactions, and ease of access to cigarettes. **Method:** This research is a quantitative descriptive analytic correlational research with a retrospective case control design using survey and questionnaire methods distributed to 86 respondents. The validity test results show that all items in the questionnaire are declared valid, with a calculated r value that is greater than r TABLE. Apart from that, the reliability test using Cronbach's Alpha produced a value above 0.60, which shows the questionnaire is reliable. **Result:** Analysis of parental closeness, peer interaction, and ease of access to cigarettes have a significant role in shaping smoking habits among teenagers. **Conclusion:** These findings highlight the importance of interventions that are more focused on vocational school adolescents, as well as the need for a holistic approach involving parents and the social environment to reduce the prevalence of smoking among adolescents. It is hoped that this research will provide insight for educators and policy makers in designing more effective prevention strategies.

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Introduction

The tobacco epidemic has become one of the most widespread health threats faced by the global community, causing approximately 6 million deaths per year. More than 5 million of these deaths result from direct tobacco use in the form of smoking, while over 600,000 deaths are caused by secondhand smoke exposure among non-smokers. This number is projected to increase by up to 35% by the year 2030 (WHO, 2021). Currently, there are around 1.2 billion smokers worldwide, representing nearly 20% of the global population in 2021 (World Cancer Report WHO, 2019). The WHO Report on the Global Tobacco Epidemic 2019 revealed that smoking habits are not only found in developed countries but also prevalent in developing nations across Africa and Asia (WHO, 2021).

Data from the World Health Organization (WHO, 2022) on global tobacco consumption shows that the number of active smokers has reached 62.8 million, with 40% coming from lower-middle-income economic groups. Indonesia ranks third in the world for smoking prevalence, with 46.8% of men and 3.1% of women identified as smokers. Smoking habits beginning at an early age can lead to various health problems, such as heart disease, lung cancer, and respiratory disorders. Additionally, adolescent smoking often continues into adulthood, increasing the risk of long-term health consequences (UNICEF, 2021).

According to a report by the World Health Organization (WHO) in 2015, more than 82% of the world's smokers live in developing countries with low to middle incomes (WHO, 2021). While the number of smokers in developed countries is declining, the opposite trend is occurring in developing countries, where smoking rates are increasing. On average, the rate of tobacco consumption in developing nations has grown by 3.4% annually since 2002 (WHO, 2021).

The Global Youth Tobacco Smoking Survey (2020) reported that 40.6% of Indonesian students aged 13–15 years—2 out of 3 boys and 1 out of 5 girls—had used tobacco products at least once, with 19.2% actively smoking. The prevalence of smoking among school-aged children aged 13–15 years rose from 18.3% in 2016 to 19.2% in 2019. Regionally, the highest average prevalence of male smokers in the 13–15 age group is found in Southeast Asia (9.2%), followed by Europe (8.8%) and the Americas (7.4%) (Kurniawan & Ayu, 2023).

Of the current 1.2 billion smokers worldwide, 56% are in the Asia-Pacific region, 24% in Europe, 11% in the Americas, and 9% in Africa and the Middle East. Approximately 10%—or 121 million—of these smokers come from ten Southeast Asian countries, making this region the largest contributor to the smoking population in Asia-Pacific and responsible for 20% of global tobacco-related deaths (Southeast Asia Tobacco Control Alliance [SEATCA], 2019 in Al-Ayyubi, 2022). The ASEAN region, composed of Brunei Darussalam, the Philippines, Indonesia, Laos, Cambodia, Malaysia, Myanmar, Singapore, Thailand, and Vietnam, represents about 10% of the world's population (625 million), but nearly 20% (121 million) are smokers (SEATCA, 2019).

The distribution of smokers in Southeast Asia includes Indonesia (50.68%), the Philippines (14.28%), Vietnam (12.30%), Thailand (8.89%), Myanmar (7.32%), Malaysia (3.91%), Cambodia (1.22%), Laos (0.72%), Singapore (0.29%), and Brunei (0.06%). This data positions Indonesia as the country with the highest number of smokers in Southeast Asia, estimated at 62 million people, while Brunei has the lowest, with approximately 72,000 smokers (SEATCA, 2014). This number is expected to

continue growing due to the decreasing average age of smoking initiation—now below 18 years—and the large number of productive youth (aged 15–29) in Southeast Asia, totaling around 160 million (SEATCA, 2019).

The rise in early-age smoking prevalence has become a global public health concern, with the age of smoking initiation declining each year (SEATCA, 2019). WHO defines adolescents as individuals aged 10–19 years. At every stage of development, including adolescence, behavioral changes are common. One such change is the emergence of smoking behavior (Sarah & Angeliana, 2024). According to Indonesia's National Socio-Economic Survey, there are more than 64.5 million youths, or 23.86% of the 270.2 million population (Susenas BPS, 2020). Smoking habits are no longer confined to adults but are increasingly prevalent among children and adolescents. The Basic Health Research (Riskesdas) reported that smoking prevalence among those aged 10–18 increased to 9.1% in 2018, positioning Indonesia as the third-largest smoking population globally (Kurniawan & Ayu, 2023; Riskesdas, 2018).

The 2023 Indonesia Health Survey (SKI), conducted by the Ministry of Health, estimated that the number of active smokers has reached 70 million people, with 7.4% of them aged 10–18. Among adolescents, the 15–19 age group represented the highest proportion (56.5%), followed by the 10–14 age group (18.4%) (Marsellinda et al., 2024). Adolescents and children are the most rapidly growing smoker demographic. For example, in West Java, 32.78% of the population aged ≥15 were smokers in 2023, placing it second nationally after Lampung. In Karawang Regency, 13% of individuals aged 15–24 were identified as smokers in 2022 (Badan Pusat Statistik, 2024).

Adolescence, often referred to as puberty, is a phase of psychosocial transition where individuals are still maturing mentally and socially. This makes adolescents susceptible to emotional and social pressures. Adolescent smoking is often influenced by a smoking-friendly environment and a lack of awareness of smoking's health risks. For some teens, smoking brings a sense of pleasure and self-confidence, even enhancing focus under pressure (Kristiani & Ricky, 2023).

Recent studies identify several risk factors contributing to teenage smoking, which are grouped into individual, family, and social-environmental factors. Iqbal (2011) found that stress, low self-esteem, and a tendency to take risks play a role in adolescent smoking behavior. High stress and low self-esteem lead adolescents to seek coping mechanisms such as smoking. Budiarto (2018) emphasized the influence of parental smoking patterns and the quality of family communication. Adolescents raised in smoking households are more likely to adopt the habit, especially if family communication is weak. Peer pressure and easy access to cigarettes are also significant contributors. Liem (2014) showed that adolescents with smoking peers or easy access to tobacco are more likely to start smoking.

Vocational high schools (SMK) present a unique environment where students are transitioning from education to the workforce. Students in SMK face high academic and social pressures, and peer interactions significantly influence decisions like smoking. Easy access to tobacco products in and around schools further contributes to the problem. For instance, observations at SMK PGRI Cikampek showed that 75% of surveyed students admitted to smoking, all of whom were male. Reasons cited include smoking at home and peer imitation. Smoking usually occurs in the school parking area or nearby stalls during breaks or after school.

Adolescent smoking can cause severe health problems, such as respiratory disorders, heart disease, and developmental issues. Socially, smoking can lead to

stigmatization and mental health challenges. Adolescent smokers are also more likely to engage in other risky behaviors such as alcohol or drug use. Financially, the money spent on cigarettes burdens both individuals and the national healthcare system (Riskesdas, 2018).

Interviews with school counselors on August 10, 2024, revealed that SMK PGRI Cikampek has implemented several smoking prevention policies. These include school rules, student-parent agreements, periodic inspections, warning signage, and collaboration with police and health centers. Nurses play a crucial role in delivering education and health campaigns about smoking's dangers. According to the Centers for Disease Control and Prevention (2021), school nurses can conduct health education, organize anti-smoking campaigns, perform early screening, collaborate with teachers and parents, and even conduct research to understand and address student smoking behavior.

Objective

Although many studies have been conducted on adolescent smoking risk factors in general, there remains a gap in research specifically targeting the vocational school environment. This study aims to identify and analyze the specific risk factors influencing smoking habits among adolescents in SMK settings. This knowledge is essential for developing more effective and contextually relevant smoking prevention interventions tailored to vocational high school students. Therefore, this study focuses on the relationship between parental relationships, peer interactions, and ease of access to cigarettes and their impact on smoking behavior among adolescents at SMK PGRI Cikampek.

Method

A research design is a systematic method used to obtain answers to research questions. It outlines the rules and procedures that must be followed throughout the research process. Broadly speaking, the definition of a research design encompasses the tasks undertaken by researchers, including identifying the problem, formulating hypotheses, determining operational procedures, data collection methods, and data analysis. In a narrower sense, a research design serves as a guideline to achieve research objectives (Syafrida, 2022).

This study employed a quantitative descriptive analytic correlational approach with a retrospective case-control design. This type of analytical research aims to study the causes of an event retrospectively by tracing the sequence from the effect (health problem) back to the cause (exposure). The direction of inquiry in this design moves from the outcome toward the factors that may have contributed to it, allowing for the identification of relationships between variables. This method is particularly appropriate for exploring associations such as parental relationships, peer interaction, and ease of access to cigarettes with smoking habits among adolescents.

Results

Univariate Analysis

The characteristics of respondents include data on class origin, gender, and age. The objective of this presentation is to determine whether the characteristics between the case group (smokers) and the control group (non-smokers) are matched, as a prerequisite of a case-control study design.

TABLE 1. Frequency Distribution of Respondents Based on Class Origin
Among Case (Smoker) and Control (Non-Smoker) Groups of Adolescents at SMK PGRI Cikampek 2024

Class Level	Case (Smoker)		Control (Non-Smoker)	
	f	%	f	%
1st Grade	11	25.6	7	16.3
2nd Grade	32	74.4	36	83.7
Total	**43**	**100**	**43**	**100**

Most respondents from both groups came from the second grade, indicating the groups are relatively matched by class origin.

TABLE 2. Frequency Distribution of Respondents Based on Gender

Gender	Case (Smoker)		Control (Non-Smoker)	
	f	%	f	%
Male	43	100.0	43	100.0
Female	0	0.0	0	0.0
Total	**43**	**100**	**43**	**100**

All respondents were male, indicating gender-matching between groups.

TABLE 3. Frequency Distribution Based on Age

Age	Case (Smoker)		Control (Non-Smoker)	
	f	%	f	%
15 Years	11	25.6	8	18.6
16 Years	28	65.1	22	51.2
17 Years	4	9.3	13	30.2
Total	**43**	**100**	**43**	**100**

The majority of respondents were 16 years old in both groups, supporting matched characteristics.

Research Variables

TABLE 4. Parental Closeness in Case (Smoker) Group

Parental Closeness	f	%
Support Non-Smoking	16	37.2%
Do Not Support Non-Smoking (Permissive)	27	62.8%
Total	**43**	**100.0%**

TABLE 5. Peer Interaction in Case (Smoker) Group

Peer Interaction	f	%
Support Non-Smoking	11	25.6%
Do Not Support Non-Smoking (Influence to Smoke)	32	74.4%
Total	**43**	**100.0%**

TABLE 6. Ease of Access to Cigarettes in Case (Smoker) Group

Access to Cigarettes	f	%
Support Non-Smoking (Restricted Access)	18	41.9%
Do Not Support Non-Smoking (Easy Access)	25	58.1%
Total	**43**	**100.0%**

Bivariate Analysis

TABLE 7. Parental Closeness and Smoking Habit

Parental Closeness	Case (Smoker)	%	Control (Non-Smoker)	%	Difference	p-value
Support Non-Smoking	16	37.2%	31	72.1%	34.9%	0.001
Do Not Support Non-Smoking	27	62.8%	12	27.9%		
Total	**43**	**100%**	**43**	**100%**		

There is a significant relationship between parental closeness and adolescent smoking behavior (p = 0.001).

TABLE 8. Peer Interaction and Smoking Habit

Peer Interaction	Case (Smoker)	%	Control (Non-Smoker)	%	Difference	p-value
Support Non-Smoking	11	25.6%	26	60.5%	34.9%	0.001
Do Not Support Non-Smoking	32	74.4%	17	39.5%		
Total	**43**	**100%**	**43**	**100%**		

There is a significant relationship between peer interaction and smoking behavior (p = 0.001).

TABLE 9. Ease of Access to Cigarettes and Smoking Habit

Access to Cigarettes	Case (Smoker)	%	Control (Non-Smoker)	%	Difference	p-value
Support Non-Smoking	18	41.9%	28	65.1%	23.2%	0.018
Do Not Support Non-Smoking	25	58.1%	15	34.9%		
Total	**43**	**100%**	**43**	**100%**		

A significant association was found between cigarette access and adolescent smoking behavior (p = 0.018).

Discussion

This study revealed that the majority of adolescent smokers were male students aged 16, predominantly from the second grade of senior high school. This finding aligns with Rahmatika and Prasetyo (2019), who reported that smoking behavior is more prevalent among students in higher grades, particularly grade 2 and 3, influenced by peer pressure and a growing sense of autonomy in decision-making. Similarly, Putra et al. (2020) found that adolescents aged 16–18 are more susceptible to smoking initiation, as this transitional age often encourages them to explore adult-like behaviors, including smoking. Supporting this, the Indonesian Ministry of Health (2018) noted that smoking prevalence is highest among those aged 15–19. Riskesdas (2018) also reported a significantly higher smoking rate among male adolescents compared to females, consistent with the finding that all adolescent smokers in this study were male. These data reinforce the idea that the age group of 15–17 years is a critical developmental stage marked by identity exploration, where peer influence, family environment, and media play substantial roles. Erikson's theory of psychosocial development identifies this phase as "Identity vs. Role Confusion,"

during which adolescents actively seek social recognition (Erikson, 1968). Smoking may serve as a means to conform to peer norms or assert independence. According to Bandura (1977), such behaviors are often learned through observation and imitation, particularly of influential peers. Marcia (1980) further explained that adolescence is characterized by increased risk-taking as a part of identity formation, which explains why many smokers in this study were 16 years old.

Parental influence also plays a significant role. The study showed that most adolescent smokers had parents who were permissive or indifferent toward their smoking behavior. Hirschi (1969) argued that weak social bonds, particularly a lack of parental attachment, contribute to deviant behaviors such as smoking. Utami (2020) found that adolescents living with smoking parents are 1.397 times more likely to smoke themselves. Norlita and Amaliah (2023) identified that permissive parenting styles correlate with increased adolescent smoking, while Za'im et al. (2024) found that non-democratic parenting—either permissive or authoritarian—was also associated with higher smoking behavior. These findings suggest that adolescents whose parents fail to enforce healthy boundaries or are not emotionally close are more susceptible to smoking. Bowlby's Attachment Theory (1982) supports this by emphasizing that weak emotional bonds lead adolescents to seek validation from peers, potentially leading to risky behaviors. Bandura's Social Learning Theory (1977) similarly highlights that adolescents may adopt behaviors modeled by their parents or peers, especially when there is no clear guidance. From a parental monitoring perspective, lack of supervision increases opportunities for adolescents to access and experiment with smoking.

Peer interaction was another strong influence identified in this study. Most adolescent smokers reported peer interactions that encouraged smoking. Gede Eka et al. (2021), Akira et al. (2024), Musniati et al. (2020), and Parawansa & Nasution (2022) consistently found a significant correlation between peer interactions and smoking behavior. These findings underscore that peer groups serve as powerful social agents shaping adolescent norms. Health Belief Model (HBM) theory explains that peer pressure can alter adolescents' perception of the risks and benefits of smoking. In this context, social acceptance often outweighs perceived health risks. Social Support Theory reinforces this by suggesting that negative social support—such as friends who smoke—can foster unhealthy behaviors. Adolescents with low self-concept may conform to peer behaviors to gain acceptance. Adolescent Development Theory emphasizes that peer influence becomes particularly dominant during adolescence, further explaining the link between peer interactions and smoking. Therefore, preventive strategies should involve peer-based interventions that promote healthy lifestyles and empower adolescents to resist negative social influences.

In terms of accessibility, this study found that easy access to cigarettes through local shops or stalls significantly contributes to adolescent smoking. Astuti (2020) and the Global Youth Tobacco Survey (2019) reported similar findings, showing that a large proportion of students bought cigarettes from small shops and were rarely denied due to their age. Jamal et al. (2020) and Keperawatan et al. (2021a) also confirmed that the proximity of cigarette vendors to schools and lack of regulation enforcement facilitate smoking behaviors among adolescents. According to the HBM, the perception that cigarettes are easily obtainable and socially acceptable increases the likelihood of smoking. Green's PRECEDE model supports this through the

concept of enabling factors, indicating that environmental factors like easy access significantly contribute to health-risk behaviors.

The inferential statistical analysis in this study further supports these findings. There was a significant difference in parental support between the case and control groups (37.2% vs. 72.1%, p=0.001), suggesting a strong relationship between parental involvement and smoking behavior. This is consistent with the work of Luh Putu (2021), Utami (2020), Rudhiati et al. (2020), and Norlita & Amaliah (2019), all of whom emphasized that weak or ineffective parenting correlates with higher adolescent smoking rates. Similarly, the peer interaction variable showed a significant proportion difference (25.6% vs. 60.5%, p=0.001), reinforcing the role of peer pressure in smoking behavior. Previous studies (Gede Eka et al., 2021; Musniati et al., 2020; Parawansa & Nasution, 2022; Akira et al., 2024) support this conclusion by showing high smoking prevalence among adolescents with strong peer influences.

Finally, the accessibility of cigarettes showed a significant association with adolescent smoking (41.9% vs. 65.1%, p=0.018). Supporting evidence from GYTS (2019) and Astuti (2024) highlights that adolescents with greater access to retail cigarette outlets are more likely to smoke, especially when combined with sufficient pocket money. These findings indicate that easy access to cigarettes is a critical factor in adolescent smoking habits. Regulatory interventions—such as stricter enforcement of age restrictions and limiting the sale of cigarettes around schools—are necessary to mitigate this issue.

In conclusion, this study affirms that adolescent smoking behavior is influenced by multiple interrelated factors: age and gender, parental involvement, peer interaction, and environmental access to cigarettes. Addressing these factors through family engagement, peer-based education, and community regulation is essential to reduce smoking prevalence among adolescents.

Conclusion

This study concludes that the majority of adolescent smokers at SMK PGRI Cikampek are 11th-grade male students, with the highest prevalence found among those aged 16 years (65.1%). Parental involvement was found to be low, with 62.8% of parents tending to tolerate their children's smoking behavior. Peer influence plays a significant role, with 74.4% of adolescents reporting that their peers encouraged smoking. Access to cigarettes remains relatively easy, with 58.1% of students stating that they could purchase cigarettes from nearby shops or stalls. The statistical analysis revealed significant relationships between smoking behavior and three main variables: parental closeness ($p = 0.000$), peer interaction ($p = 0.000$), and ease of access to cigarettes ($p = 0.018$). These findings indicate that adolescent smoking behavior in vocational school settings is strongly influenced by familial tolerance, peer encouragement, and environmental access to tobacco products.

To address these issues, several recommendations are proposed: educating parents about their role in supervising adolescent smoking behavior; strengthening positive peer groups within schools; restricting access to cigarettes in areas surrounding the school; implementing educational programs to raise awareness among students about the dangers of smoking; improving monitoring and mentoring by school staff; and enhancing collaboration with health centers and relevant public health institutions. These interventions are expected to help reduce smoking habits among adolescents and promote a smoke-free environment for students.

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