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### **ACADEMIC PERFORMANCE AND SOCIAL ENVIRONMENT OF TEENAGE SMOKERS IN BENGKULU CITY, INDONESIA: A MIXED RESEARCH APPROACH**

*Muria HERLINA, Novi Hedrika JAYAPUTRA, Tria Astika Endah PERMATASARI,  
Adi FAHRUDIN, M. Rezaul ISLAM*

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# Academic Performance and Social Environment of Teenage Smokers in Bengkulu City, Indonesia: A Mixed Research Approach

Muria HERLINA<sup>1</sup>, Novi Hedrika JAYAPUTRA<sup>2</sup>, Tria Astika Endah PERMATASARI<sup>3</sup>, Adi FAHRUDIN<sup>4</sup>, M. Rezaul ISLAM<sup>5</sup>

## Abstract

This study aimed to evaluate the academic performance and social surroundings of teenage smokers in Bengkulu City, Indonesia, utilizing a mixed research methodology that incorporated both quantitative and qualitative approaches. The quantitative data was obtained via structured interviews with 130 teenage smokers, while the qualitative data was obtained through in-depth interviews, observation, and documentation. The findings revealed that 51 out of 130 participants achieved a “top 10” rank in their academic performance, and 48 claimed to have achieved a “top 3 rank”. Moreover, 65% of participants reported that their family environment was supportive of their academic achievement, and there was a significant association between family environment and academic performance (OR = 10.795;  $p < 0.05$ ). Additionally, 55% of participants reported that their peer environment was supportive of their academic achievement, and there was a significant association between peer environment and academic performance (OR = 10.706;  $p = 0.030$ ). Furthermore, 58% of participants reported that the community environment supported their academic achievement, but there was no significant relationship between the community environment and academic performance

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<sup>1</sup> Department of Social Welfare, Faculty of Social and Political Sciences, Bengkulu University, Bengkulu, INDONESIA; e-mail: mherlina@unib.ac.id

<sup>2</sup> Department of Social Welfare, Faculty of Social and Political Sciences, Bengkulu University, Bengkulu, INDONESIA; e-mail: nhjayaputra@unib.ac.id

<sup>3</sup> Department of Nutrition, Faculty of Medicine and Health, Universitas Muhammadiyah Jakarta, Central Jakarta, INDONESIA; e-mail: tria.astika@umj.ac.id

<sup>4</sup> Faculty of Psychology, Universitas Bhayangkara Jakarta, Jakarta, INDONESIA; E-mail: adi.fahrudin@dsn.ubharajaya.ac.id ORCID: 0000-0001-7140-6006

<sup>5</sup> Center for Family and Child Studies, Research Institute of Humanities and Social Sciences, University of Sharjah, Sharjah, UNITED ARAB EMIRATES; Professor, Institute of Social Welfare and Research, University of Dhaka, Dhaka, BANGLADESH; E-mail: mislam@sharjah.ac.ae ORCID: 0000-0002-2217-7507 (Corresponding author)

(OR = 6.787;  $p = 0.148$ ). Finally, 59% of participants reported that the work environment supported their academic achievement, but there was no significant relationship between workplace environment and academic performance (OR = 7.598;  $p = 0.107$ ). The study recommends that parents and schools should focus on improving their children's academic performance, particularly in the context of peer relationships.

*Keywords:* teenage smokers, academic performance, social environment, Indonesia, parenting.

## Introduction

Cigarettes are tobacco rolled or wrapped with paper, leaves, or corn husks around a cylindrical shape that is typically 8-10 cm long and smoked by lighting the ends. They are addictive and can lead to addiction and dependence (Geiss & Kotzias, 2007). Smoking is hazardous to health as it can cause several diseases such as chronic obstructive pulmonary disease (COPD), changes in lung tissue, airways, and lung function, leading to pulmonary obstruction, cancer of various body parts like mouth, nose, throat, pancreas, bladder, cervix, blood, kidney, and lungs, and is a significant risk factor for sudden death (Gagan, 2017). Smoking also has adverse effects on heart disease, impotence, skin, joints, and kidneys. Cigarette smoke can burn protein and destroy Vitamin A, resulting in dry, rough, and scaly skin. Moreover, smoking often leads to symptoms of various diseases such as asthma, colds, flu, chest infections, tuberculosis, chronic bronchitis, hyperthyroidism, multiple sclerosis, and diabetic retinopathy. Other harmful effects of smoking include dementia, cataracts, macular degeneration, pulmonary fibrosis, psoriasis, gum disease, tooth loss, osteoporosis, and neuropathy (Hidayati, 2019).

## Literature Review

This study conceives three important concepts such as teenage or adolescent smokers, academic performance, and social environment. Adolescence is a crucial developmental stage in which individuals are particularly vulnerable to the harmful effects of smoking (Viner *et al.*, 2012). In Indonesia, teenaged or adolescents are defined as residents aged between 10-18 years old, meaning they are considered school-age children who attend elementary, junior high, and high school. Teenage smokers face a higher risk of addiction, health problems, and social consequences such as poor academic performance and negative peer influence (Joe *et al.*, 2009). Teenage smoking is a significant public health concern, as it can lead to long-term health problems and has been linked to a range of health issues, including respiratory problems, heart disease, and cancer. Academic performance refers to a

student's ability to achieve learning outcomes and attain good grades in academic subjects. It can be measured through various methods, such as standardized tests, class grades, and assessments. Academic performance can be influenced by various factors, including student characteristics, teaching quality, curriculum, and learning environment. On the other hand, social environment refers to the physical, cultural, and social factors that surround individuals and affect their behavior and interactions with others. It includes factors such as family, friends, peers, community, and workplace. The social environment can shape an individual's attitudes, values, beliefs, and behaviors, and can have a significant impact on their mental health, well-being, and academic performance.

This study used social environments such as family environment, peer environment, community environment, and working environment. Family environment refers to the social and physical context in which family members interact with each other. It includes factors such as family structure, parenting style, communication patterns, and the quality of family relationships. Peer environment refers to the social context in which young people interact with their peers, including friends, classmates, and acquaintances. It includes factors such as peer pressure, social norms, and the quality of peer relationships. The community environment refers to the social and physical context in which people live, work, and play. It includes factors such as neighborhood conditions, access to resources and services, and social norms and values. Work environment refers to the social and physical context in which people work, including the physical conditions of the workplace, organizational culture, and the relationships between employees and their colleagues and supervisors.

Good parenting plays a crucial role in enhancing children's academic performance (Page, 2016). The psychomotor aspect of academic achievement is closely linked to students' actions in practicing subject matter in daily life, both at home and in the community (Kpolovie *et al.*, 2014). Smoking among teenagers is a persistent issue worldwide, and many studies have been conducted to determine the reasons behind it. Peer pressure, stress, anxiety, boredom, and parental influence are some of the main factors contributing to smoking among students. Studies conducted in Pakistan (Khan *et al.*, 2020) and China (Wang *et al.*, 2021) found that peer influence and stress were significant predictors of smoking among students. Similarly, studies in India (Prakash *et al.*, 2021) and Bangladesh (Khaleque & Huque, 2020) revealed that parental smoking and low levels of parental monitoring and support were also predictors of smoking among students. These findings suggest that both peer influence and parental influence play a crucial role in shaping the attitudes and behaviors of students toward smoking. Other studies have also identified additional factors that contribute to smoking among students. For example, a study conducted in Iran found that a lack of knowledge about the health risks of smoking and the perception that smoking is socially acceptable were significant predictors of smoking among students (Sreeramareddy *et al.*, 2010). Another study conducted in Malaysia found that exposure to smoking

in movies and other media was associated with an increased likelihood of smoking among students (Wee *et al.*, 2019). These findings suggest that multiple factors, including social norms, media exposure, and knowledge about the health risks of smoking, contribute to smoking among students.

As of 2020, there were an estimated 68.8 million smokers in Indonesia, making it the second-largest tobacco market in the world after China (World Health Organization, 2021). Despite efforts to reduce tobacco use through policies such as tobacco taxation and smoke-free laws, the prevalence of smoking remains high in Indonesia, particularly among men and young people. According to a study published in 2019, the prevalence of current smoking among Indonesian students aged 13-15 years was 7.4% (Sreeramareddy *et al.*, 2019). Another study published in 2020 found that the prevalence of smoking among university students in Indonesia ranged from 16.7% to 30.3% (Nasution *et al.*, 2020).

The social environment surrounding children, which includes events and community conditions, has a significant influence on their development and educational process. This environment is comprised of various factors, including the family, school, and community environment. According to experts such as Annajah (2016) and Riyandi (2017), the cultural environment should reflect socio-cultural strengths such as family beliefs, organizations, and livelihoods. Empiricists argue that environmental factors largely determine human growth and development, with the social environment playing a crucial role. The social environment, which includes the family, school, and community, contributes to the achievement motivation of children. Annajah and Falah (2017) found a positive correlation between the quality of the social environment and children's motivation, with the social environment contributing 19.6% to motivation. However, other factors can also affect achievement motivation, as there is still 80.4% of unaccounted factors that could influence motivation.

Numerous studies on teen smokers have been conducted worldwide, looking at the relationship between their social surroundings and smoking habits. These studies have also been carried out in Indonesia, focusing on the social environments of Indonesian teenage smokers. A recent study conducted in Egypt found that family environment was significantly associated with smoking behavior among university students. Students from families with a history of smoking were more likely to smoke than those without such a history. Moreover, students who perceived their family environment as stressful and unsupportive were also more likely to smoke (Kabbash *et al.*, 2022). In terms of peer environment, a study conducted in China found that the social network of smokers among university students played a significant role in the initiation and maintenance of smoking behavior. Students who had more friends who smoked were more likely to smoke themselves, and the influence of these social networks persisted over time (Zhang *et al.*, 2020). Another study conducted in Saudi Arabia found that the community environment was significantly associated with smoking behavior among secondary school students. Students who perceived their communities as less supportive of

anti-smoking efforts were more likely to smoke than those who perceived their communities as supportive (Almutairi *et al.*, 2020). In terms of work environment, a study conducted in the United States found that workplace smoking policies and norms were associated with smoking behavior among young adults. Employees who worked in environments with less restrictive smoking policies and more permissive smoking norms were more likely to smoke (Hennrikus *et al.*, 2020).

A recent study conducted among university students in Indonesia found that family environment and peer influence were significantly associated with smoking behavior. The study found that students who perceived their family environment as permissive to smoking were more likely to smoke than those who perceived their family environment as restrictive. Moreover, students who had friends who smoked were also more likely to smoke themselves, indicating the role of peer influence in smoking initiation and maintenance (Santoso *et al.*, 2020). Another study conducted among university students in Indonesia found that the community environment was significantly associated with smoking behavior. Students who perceived their community as less supportive of anti-smoking efforts were more likely to smoke than those who perceived their community as supportive (Rahayu *et al.*, 2021). In terms of work environment, a study conducted among university students in Indonesia found that exposure to smoking environments in the workplace was significantly associated with smoking behavior. Students who worked in environments where smoking was allowed or where their co-workers' smoked were more likely to smoke themselves (Maulida *et al.*, 2019).

Another study conducted among university students in Indonesia found that stress was a significant predictor of smoking behavior. Students who reported higher levels of stress were more likely to smoke than those who reported lower levels of stress. In addition, the findings revealed that coping strategies, such as seeking social support or exercising, were associated to smoking behavior adversely, indicating a potential role for positive coping strategies in delaying the onset of smoking and promoting smoking cessation. (Anwar *et al.*, 2019). A study conducted among female university students in Indonesia found that exposure to cigarette advertisements was associated with smoking behavior. Students who reported more exposure to cigarette advertisements were more likely to smoke than those who reported less exposure. The study highlights the potential impact of tobacco marketing on smoking behavior among young adults (Kamaluddin *et al.*, 2021). A cross-sectional study conducted among university students in Indonesia found that knowledge and attitude toward smoking were significantly associated with smoking behavior. Students who had more positive attitudes toward smoking or who had lower levels of knowledge about the harms of smoking were more likely to smoke than those who had more negative attitudes or higher levels of knowledge (Wijayanti *et al.*, 2018).

## Methodology

This study utilized a mixed research approach, which combines both quantitative and qualitative methods to provide a more comprehensive understanding of the social phenomena being studied. Mixed methods research is a valuable approach that combines qualitative and quantitative methods to provide a more comprehensive understanding of complex research questions. One justification for using mixed methods is that it can help researchers to triangulate their findings by cross-validating results obtained through different methods. Additionally, mixed methods can provide a more complete picture of a research problem, as it allows for both in-depth exploration and statistical analysis. The benefits of mixed methods research include the ability to generate more robust and nuanced findings, greater flexibility in data collection and analysis, and the potential for richer and more diverse data sets. Qualitative research was used to gain a deeper understanding of the research subject and social phenomena in a specific socio-cultural context. For the quantitative aspect of the study, 130 adolescent smokers from nine sub-districts in Bengkulu City were randomly selected to participate in the structured interview using a questionnaire. Each sub-district had 15 youth smokers. Qualitative data was collected through in-depth case interviews with 11 informants until saturation was reached, meaning no new information was obtained. Observation and documentation surveys were also utilized to gather data. The data analysis process involved transcribing and collecting data, describing raw data, managing data reduction, categorizing and conducting thematic analysis, and constructing the relationship between categorization/content analysis and narrative analysis. By using a mixed research approach, the study was able to complement and support each method in obtaining a more comprehensive and detailed picture of the social phenomena studied (Evi & Sudarti, 2016; Sugiyono, 2021). The University of Bengkulu Ethical Committee's guidelines were followed in conducting this study, and ethical considerations were given to all participants. Informed consent was obtained from all participants, and a consent form was prepared and presented to them before data collection. The researchers provided a clear explanation of the research objectives and the benefits of participating in the study. The confidentiality and privacy of the participants were also maintained throughout the research process.

## Results

### *Characteristics of respondents*

This study, which utilized a combined method approach, was conducted for a three months duration in 2021. Quantitative data was collected through a questionnaire from 130 randomly selected respondents, while qualitative data was

gathered from in-depth interviews with 11 participants. The results of the study revealed that there was a correlation between the education level and the age of the respondents, with an increase in the number of respondents at the elementary school level (2 people), junior high school level (3 people), and senior high school level (5 people) observed through qualitative data analysis (Table 1). The findings also revealed that adolescents as young as below 10 years old have smoked, with 4 respondents in the 4th grade of elementary school, 2 in the 1st grade of elementary school, and 1 in the kindergarten level, indicating that even children as young as 6-7 years old have engaged in smoking behavior.

Table 1. Characteristics of Adolescent Smokers Respondents (N=130)

Variable	N	%
Age (years)		
< 10	7	5.4
10-12	29	22.3
13-15	51	39.2
16-18	43	33.1
Education		
Primary school grade 4 and below	7	5.4
Primary school	31	23.8
Junior high school	54	41.5
Senior high school	38	29.2

Table 2. Characteristics of Adolescent Smokers Informant (N=11)

Variable	N	%
Age (years)		
< 10	1	9.1
11-13	3	27.3
14-16	2	18.2
17-19	5	45.5
Education		
Not completed in primary school	1	9.1
Primary school	3	27.3
Junior high school	3	27.3
Senior high school	4	36.4

Table 2 illustrates the quantitative analysis results which indicate that the adolescent smokers in Bengkulu City have an age range of 17-19 years old, with 2 individuals being 19 years old and still in high school due to absenteeism. The majority of the respondents did not complete their education, with only a few having completed up to grade 2 of senior high school and grade 5 of elementary school.

*Results of Quantitative Data*

Out of 130 respondents, 51 reported receiving a “top 10” rank in their learning achievement, while 48 claimed to have received a “top 3 rank “ and 31 admitted to not receiving any ranking. The study found that the majority of family environments were supportive of academic achievement, with 65 respondents (65.0%) reporting such support. Statistical analysis using the Chi-Square test revealed a significant relationship between family environment and learning achievement, with an odds ratio (OR) of 10.795 and a probability (p-value) of 0.029 (< 0.05). This indicates that the more supportive the family environment, the higher the learning achievement. Similarly, the majority of school environments were found to be supportive of academic achievement, with 62 respondents (62.0%) reporting such support. Statistical testing showed a significant relationship between school environment and learning achievement, with an OR of 9.762 and a p-value of 0.045. This suggests that the more supportive the school environment, the higher the learning achievement. These findings are summarized in Table 3.

*Table 3. Relationship between Social Environment and Learning Achievement of Adolescent Smokers*

Social Environment	Achievement								OR	p-value
	Not Rank		Top 10 Rank		Top 3 Rank		Total			
	N	%	N	%	N	%	N	%		
Family									10.795	0.029
No Support	6	4.3	7	6.6	5	7.1	18	18.0		
Enough Support	17	11.2	16	17.4	14	18.4	47	47.0		
Support	8	15.5	25	24.0	32	25.5	65	65.0		
School									9.762	0.045
No Support	5	4.1	7	6.3	5	6.7	17	17.0		
Enough Support	18	12.2	18	18.8	15	20.0	51	51.0		
Support	8	14.8	23	22.9	31	24.3	62	62.0		

Peer									10.706	0.030
No Support	7	5.2	7	8.1	8	8.6	22	22.0		
Enough Support	19	13.1	19	20.3	17	21.6	55	55.0		
Support	5	12.6	22	19.6	26	20.8	53	53.0		
Community									6.787	0.148
No Support	6	4.5	8	7.0	5	7.5	19	19.0		
Enough Support	17	12.6	17	19.6	19	20.8	53	53.0		
Support	8	13.8	23	21.4	27	22.8	58	58.0		
Work									7.598	0.107
No Support	5	3.6	5	5.5	5	5.9	15	15.0		
Enough Support	18	13.4	21	20.7	17	22.0	56	56.0		
Support	8	14.1	22	21.8	29	23.1	59	59.0		
Total	51	51.0	48	48.0	31	31.0	130	100.0		

Out of 130 respondents, 55% of them reported that their peer environment was supportive of their academic achievement. Statistical testing revealed that there was a significant relationship between peer environment and learning achievement, with an odds ratio (OR) of 10.706 and a probability (p-value) of 0.030. This means that a more supportive peer environment is associated with higher learning achievement. Similarly, the majority (58%) of the respondents reported that the community environment supported their academic achievement, but statistical testing showed that there was no significant relationship between community environment and learning achievement, with an OR of 6.787 and a p-value of 0.148. This suggests that the community environment has no impact on learning achievement.

The statistical tests conducted on various social environments reveal that 59 respondents (59.0%) reported that the work environment supports student achievement. However, statistical analysis showed that the OR value is 7.598 with a p-value of 0.107, indicating that there is no significant relationship between the workplace environment and learning achievement. Therefore, it can be concluded that the work environment does not affect the learning achievement of adolescent smokers in Bengkulu City. In summary, the study found that out of the five social environments studied, three were significantly related to learning achievement: the supportive family environment, the school environment, and the peer environment. However, the community and work environments did not have a significant effect on learning achievement.

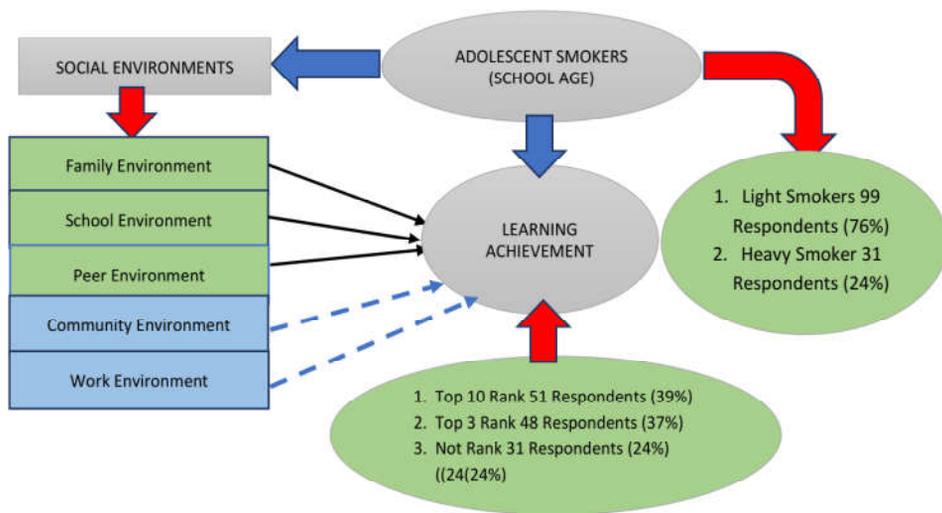


Figure 1. Schematic Adolescent Smokers: Learning Achievement and Social Environment in Bengkulu City. Source: Authors

### Results of qualitative analysis

After interviewing 11 adolescent smokers as informants, it was discovered that they first became familiar with cigarettes at the age of 7. This was when they tried their father's cigarettes, which tasted deliciously sweet when licked. They then attempted to emulate their fathers by burning the ends of the cigarettes and smoking them. Initially, they coughed after inhaling the smoke and were not used to it. However, as time went on, they became addicted to smoking and would experience dizziness if they did not smoke (Subject 1, 7 years old, 1st-grade elementary school). Informant Subject 2, a 16-year-old 3rd-grade junior high school student, claimed that smoking helped to relieve stress. They often smoked while hanging out with friends and playing games on their cell phones. They also mentioned that they were treated by friends and would feel dizzy and unmotivated if they did not smoke. Subject 3, a 19-year-old who dropped out of 1st grade of high school, stated that if they did not smoke, they would have a headache and feel angry, lazy to eat, and would take their mother's money without permission to buy cigarettes. Additionally, they reported sleeping late at night, waking up late, and not attending school.

Subject 4, an 18-year-old who dropped out of high school in 2nd grade, had a different experience. At 15 years old, he joined his father as a fisherman in cold weather where everyone smoked, and eventually became addicted. He now buys cigarettes using his income from selling fish. Subject 5, a 16-year-old in 3rd-grade junior high school, also started smoking due to the cold weather while working

with his uncle on a fishing boat. Although his father gets angry, he continues to smoke and uses his income to buy cigarettes. Subject 6, a 13-year-old in 6th grade, helps her mother sell vegetables at Panorama Market and uses her pocket money to buy cigarettes, although she feels guilty about it. Subject 7, a 17-year-old in 2nd-grade senior high school, buys cigarettes and hides them from his family. He smokes in his room or at a shop after school and sometimes with friends, but he doesn't find it beneficial. He earns money by selling gallons of mineral water, and his brother pays him.

During another interview, Subject 8, a 13-year-old in 6th grade, admitted to being addicted to smoking. He often takes his brother's money to secretly smoke behind the house. Recently, he has lost interest in studying and thinks that his addiction is the reason. If he doesn't smoke, his mouth tastes sour, and he often skips school to smoke with friends or play games at the internet cafe. On the other hand, Subject 9, a 14-year-old in 1st-grade junior high school, used to be a good student in elementary school, but now he doesn't focus on his studies anymore because his friends smoke cigarettes. He was caught by his father while studying with his friends and was threatened to be sent to a boarding school. He occasionally smokes now out of fear. Subject 10, an 11-year-old in 5th-grade elementary school, had a similar experience. When his father found out that he smoked, he was afraid of being sent to a boarding school in Padang, where his father's friend is the administrator. He promised not to smoke again, but he sometimes repeats the behavior when he sees his brother smoking. Subject 11, who is 18 years old and in high school, shared that he struggled with irregular sleeping patterns and loss of motivation to exercise due to his involvement with smoking marijuana through cigarettes, influenced by his smoking friends. As an only child, his uncle became suspicious and reported him, leading to him being caught and monitored. After undergoing therapy in Bandang for a month, which involved being kept away from his smoking friends, adopting healthy eating habits, going on vacations, and taking medicine and vitamins, Subject 11 has been compliant with his treatment plan. The family and Subject 11 have agreed to quit smoking, and he plans to attend college away from his smoking friends. Even when offered cigarettes by an uncle, who tested him, Subject 11 refused as he wanted to continue his recovery. Additionally, he has taken up sports and now plays tennis with his father.

## Discussion

Adolescent smoking behavior is influenced by their social environment, which includes external factors that trigger smoking. The family or parents and peers, such as associations, have the most significant impact on adolescents and their smoking behavior (Wijaya *et al.*, 2022). There are four social environmental factors: (1) Social grouping, refers to groups of people based on kinship relationships, such as family relations, clans, and ethnic groups. (2) Social arrangement, which

is a set of rules that guides interactions and relationships between individuals or groups, such as family arrangements. (3) Social institutions, which involve controlling the residential environment for the survival of the community in the social environment, with recognized members of certain organizations having rights and obligations over available natural resources. (4) Social needs, which are the desires of individuals to fulfill their life needs, such as the need for interaction with others, become important factors in the social environment (Aziz, 2022).

Our study found the family environment plays a significant role in shaping children's academic excellence, which is similar to the findings of Setiana and Tahlil's (2017). They found a relationship between the physical and family environments and adolescent smoking behavior ( $p = 0.023$ ), a relationship between the social environment and adolescent smoking behavior with learning achievement ( $p = 0.001$ ), and a relationship between the family cultural environment and adolescent smoking behavior ( $p = 0.006$ ). These findings suggest that the physical social environment, family culture, and social environment all play a part in influencing adolescents' smoking behavior. According to Rosyid *et al.*, (2019), learning achievement is a reflection of a student's performance and is measured through symbols, numbers, letters, and sentences. The study also found that most parents apply democratic parenting, and most students have good learning achievements. Pranoto *et al.*, (2020) claimed that despite various policies set by the school, students still have opportunities to smoke. This is due to teachers smoking in schools, which makes students feel more comfortable smoking at school and insufficient supervision that allows some students to smoke in the school canteen.

The influence of the school environment on student achievement is significant. Manah *et al.*, (2017) mention that learning achievement can be measured by test scores, grades, averages, and degrees, indicating knowledge acquired through formal education. Therefore, a supportive social environment at school is crucial for academic success. Narayani *et al.*, (2021) found that parents' involvement in their children's learning during the COVID-19 pandemic had a significant relationship with student learning discipline and outcomes, emphasizing the importance of parental support. Similarly, Damang *et al.*, (2019) found that parental control, self-control, and peer attitudes affect male students' smoking behavior, but not the effect of advertising. Meanwhile, Ulfah (2016) highlighted the impact of teachers' attitudes and behaviors on student motivation and achievement, particularly in their approach to lessons.

The social environment, particularly the influence of peers, has an impact on both smoking behavior and academic achievement among children. The findings of this study indicate a significant relationship between the peer environment and smoking behavior and academic achievement ( $p\text{-value} = 0.030 < \alpha 0.05$ ), as demonstrated by the responses of students in Indonesia with a majority expressing negative social influences (59.8%) and the majority of students being smokers (53.3%) (Mayenti, 2019). Similarly, Ferdita *et al.*, (2020) found that smoking behavior hurts student achievement, as nicotine build-up resulting from smoking

can decrease motivation, concentration, and memory, ultimately affecting academic performance. Pratama *et al.*, (2021) also found that peer interaction plays a major role in influencing adolescent smoking behavior, as adolescents seek acceptance among their peers and may engage in smoking to conform to social norms.

The study results suggest that there is no significant relationship between hackers at school and children becoming smokers, indicating that the community environment plays a significant role in adolescent behavior. This finding is consistent with the finding of Sugiyono (2021) who found that most junior high school smokers had negative feelings towards smoking (53.2%) and satisfactory academic performance (67.9%). Our study found a significant relationship between smoking behavior and academic achievement ( $p$ -value = 0.0001). Additionally, a 14-year-old student named Subject 9 described how he lost focus on studying after befriending fellow smokers, which resulted in him being caught by his father and threatened to be sent to a boarding school. However, he noted that the community where he lives is accustomed to people coming home late at night, and the sound of motorcycles is common. Herlina (2018) found that local culture supports smoking, with cigarettes provided at celebrations and marriage ceremonies, and betel holders containing cigarettes.

Our study did not find significant relationship between the workplace environment and learning achievement, as indicated by a statistical test result of 0.107 with a  $p$ -value of  $0.107 > \alpha 0.05$ . Therefore, it can be concluded that the workplace environment does not support learning achievement. However, this finding differs somewhat from the narrative of informant Subject 4, an 18-year-old who dropped out of high school in grade 2. At the time, she was about 15 years old and began smoking because everyone around her smoked when her father went fishing in cold weather. Over time, she became addicted and experienced symptoms such as a sour taste in her mouth, dizziness, and erratic behavior if she didn't smoke. Now, she works as a fish seller and can buy cigarettes with her income, no longer relying on her parents' money. However, she regrets not heeding advice to not smoke while in school, as she now suffers from coughing and a lack of appetite. Subject 4's story suggests that the workplace environment can influence smoking behavior, which can lead to underachievement and even dropping out of high school due to decreased focus and concentration. This is supported by the narrative of Subject 6, a 13-year-old in 6th grade who helps her mother sell vegetables at Panorama Market. To combat sleepiness, Subject 6 sometimes smokes to stay awake, though she feels guilty because her mother has no friends to help with the selling. Subject 6 wants to help her mother despite having three older sisters and being the only son.

The study revealed that many adolescent smokers in Bengkulu City were categorized as light smokers who consumed only 1-2 cigarettes, accounting for 72% of the sample. Meanwhile, the remaining 28% were identified as heavy smokers who consumed more than one pack per day. This finding is consistent with a study conducted by Luji and Lubis (2019) who showed that 73.9% of male

students in class XI were categorized as light smokers, while 23.9% were classified as moderate smokers and only 2.2% were heavy smokers. The study, however, did not provide information on the number of cigarettes smoked for each category. Furthermore, Siahaan and Malinti (2022) reported that the relationship between smoking habits and sleep disorders in adolescents are found most moderate and heavy-smoking adolescents experienced poor sleep quality, with 91% reporting disrupted sleep patterns. This finding suggests that smoking behavior is related to sleep quality and that adolescents who smoke are more likely to experience disrupted sleep patterns. This finding is supported by the account of Subject 3, a 19-year-old who dropped out of high school, and reported feeling dizzy, angry, and lazy to eat when not smoking. Subject 3 also admitted to taking his mother's money to buy cigarettes and experiencing disrupted sleep patterns, leading to late waking times and missed school. Additionally, Subject 3 reported feeling short of breath and lazy to take a bath, which affected his overall health and hygiene.

## **Conclusion**

The study on adolescent smokers in Bengkulu City identified five indicators in their social environment, with three of them having a significant impact on their learning achievement - family, school, and peer environments. However, the community and workplace environments did not show a significant relationship with their learning achievement. The majority of adolescent smokers were light smokers, consuming one to two cigarettes per day, while the remaining 24% were heavy smokers who consumed more than one pack per day. Among the adolescent smokers, 37% were in the top three ranks, 39% were in the top ten, and 24% did not receive any ranking. The study also revealed that adolescent smokers began smoking at the early age of seven, mostly out of curiosity after seeing their father's cigarettes. They typically acquired cigarettes by taking money from their family or through work, but one informant was found to be a marijuana user. Two informants continued their studies in high school, while two others stayed in junior high school, and one informant dropped out in the second year of high school. To improve adolescent achievement at school, parents should pay more attention to and supervise their children, especially in their peer environment. Additionally, schools should strictly enforce rules against smoking and set an example for students by complying with them.

The study on academic performance and social environment of teenage smokers in Bengkulu City, Indonesia has significant policy implications for the country. Policy makers in Indonesia can use the findings of the study to develop and implement targeted interventions that aim to reduce the prevalence of teenage smoking and promote healthier lifestyles among young people. The findings of the study suggest that teenage smoking is a prevalent issue that has serious consequences for academic performance and social environment of teenagers.

The study revealed that teenage smokers were more likely to experience social isolation and engage in risky behaviors, such as drug use and delinquent activities, compared to non-smokers. Additionally, teenage smokers were found to have lower academic achievement and were more likely to have disciplinary problems in school. These findings have important implications for policy makers in Indonesia who are responsible for developing and implementing policies to prevent teenage smoking. One of the key policy implications of the study is the need to increase awareness among teenagers about the harmful effects of smoking on their academic performance and social environment. This can be achieved through targeted education campaigns that aim to educate teenagers about the dangers of smoking and the benefits of a healthy lifestyle.

Another policy implication of the study is the need to strengthen the enforcement of existing tobacco control laws in Indonesia. The study revealed that teenage smokers had easy access to cigarettes and were able to purchase them without any difficulties. This suggests that existing tobacco control laws are not being effectively enforced and that more needs to be done to prevent the sale of tobacco products to minors. Finally, the study highlights the need for targeted interventions to address the social and environmental factors that contribute to teenage smoking. The study found that peer pressure and social isolation were significant factors that contributed to teenage smoking. This suggests that interventions that focus on building positive social connections among teenagers, such as after-school programs and peer mentoring programs, could be effective in reducing the prevalence of teenage smoking.

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