



The Influence of Social Media Cigarette Advertising on Adolescent Smoking Behavior

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Abstract. *Smoking behavior among adolescents remains a serious public health issue in Indonesia. Social media has become a new platform for tobacco companies to indirectly promote their products through engaging content and influential public figures, potentially increasing adolescents' interest in trying cigarettes. This study aimed to analyze the relationship between exposure to cigarette advertisements on social media and adolescent smoking behavior in Banrیمانurung Village, Jeneponto Regency. A quantitative research design with a cross-sectional approach was employed. The population consisted of 171 male adolescents, with 120 respondents selected through purposive sampling. Data were collected using a closed-ended questionnaire and analyzed using SPSS software with the Chi-Square test. The results showed a significant relationship between exposure to cigarette advertisements on social media and smoking behavior, with a p-value of <math><0.001</math> (<math><0.05</math>). Exposure to cigarette advertisements on social media is therefore significantly associated with smoking behavior among adolescents in Banrیمانurung Village. Increased awareness of smoking risks, stronger family and school supervision, and enhanced health promotion by community health centers are recommended. Moreover, reducing adolescent smoking through stricter digital advertising regulation not only protects individual health but also contributes to reducing environmental tobacco smoke (ETS) exposure in public spaces, decreasing cigarette butt waste – a major source of plastic and toxic pollution – and lowering the overall environmental burden of tobacco production and disposal, aligning with SDG 3 (Good Health and Well-being) and SDG 12 (Responsible Consumption and Production).*

Keywords: Advertising; Cigarette; Behavior; Social Media; Adolescent

1. Introduction

According to the World Health Organization, cigarettes are products containing more than 7,000 chemical substances, approximately 70 of which are carcinogenic or cancer-causing agents (1). Smoking is recognized as a major risk factor for various non-communicable diseases, including lung cancer, coronary heart disease, hypertension, chronic obstructive pulmonary disease (COPD), and stroke (2). WHO also reported that tobacco causes more than seven million deaths annually worldwide and results in substantial economic losses due to healthcare costs and reduced community productivity (3). In Indonesia, smoking behavior continues to increase, including among adolescents. Adolescence is a developmental phase highly vulnerable to the influence of social environments and media, given adolescents' high

curiosity and tendency to experiment with new behaviors without considering long-term risks (4).

The development of information technology and digital media has made social media an essential part of adolescents' lives. Adolescents are currently highly active on social media platforms such as TikTok, Instagram, and YouTube, allowing them to be exposed to various types of content, including cigarette advertisements and promotions. According to WHO (5), exposure to cigarette advertisements refers to all forms of exposure to tobacco product promotions through various media that may influence an individual's perceptions, attitudes, and smoking behavior. The tobacco industry has now shifted from conventional media to social media by employing marketing strategies that are more appealing, modern, and closely connected to adolescents' lifestyles. Sari et al. (6), through a scoping review study, found that cigarette promotion on social media has a significant influence on adolescent smoking behavior in several Asian countries, including Indonesia. Furthermore, Ministry of Communication and Digital Affairs of the Republic of Indonesia (7) stated that the dissemination of cigarette advertisements on digital media has actually been prohibited because it contradicts tobacco product control policies regulated under Government Regulation Number 109 of 2012.

Although there are regulations prohibiting cigarette promotion in digital media, the tobacco industry continues to utilize social media as a means of covert promotion through influencers, event sponsorships, and entertainment content that portrays smoking as part of a modern lifestyle (8). Several examples of cigarette promotion on social media have been identified on platforms such as TikTok, Instagram, and YouTube, where cigarette and vape products are presented in appealing and viral forms among adolescents. Ramadhona et al. (9) explained that cigarette promotional videos on social media often depict smokers as attractive, productive, modern, and adventurous individuals. The World Health Organization (10) also emphasized that the use of influencers is one of the tobacco industry's strategies to manipulate and attract young people's attention. Such content indirectly shapes positive perceptions of smoking and increases adolescents' curiosity to try smoking.

Exposure to cigarette advertisements on social media may influence smoking behavior through the frequency and intensity of exposure experienced by adolescents. According to Sutrisno (11), exposure frequency refers to how often individuals encounter cigarette advertisements within a certain period, whereas exposure intensity describes the level of attention individuals pay to the content of those advertisements. The more frequent and intense the exposure to cigarette advertisements, the greater the likelihood that the promotional messages will influence attitudes and behaviors. A study by Utari et al. (12) showed that 96.8% of adolescents who smoked had previously been exposed to cigarette-related content on social media, and there was a significant relationship between social media exposure and adolescent smoking behavior.

In addition to social media factors, adolescent smoking behavior is also influenced by social environments such as peers, family, and influencers. Wijaya Sutha (13) found that peer groups are among the strongest factors influencing adolescent smoking behavior compared to other social factors. A study by Susanti et al. (14) also demonstrated that peer relationships are the primary factor encouraging smoking behavior among adolescents, particularly through invitations and support within social circles. Meanwhile, Diana et al. (15) found that attitudes toward cigarette advertisements and peer social support significantly influence university students' smoking behavior. In the theory proposed by Lawrence Green, these

factors are categorized as reinforcing factors that can strengthen or encourage individuals to maintain certain behaviors, including smoking behavior.

Based on various previous studies, it can be concluded that exposure to cigarette advertisements on social media has a significant relationship with adolescent smoking behavior. However, to date, no study has specifically examined the relationship between exposure to cigarette advertisements on social media and adolescent smoking behavior in Banrیمانurung Village, Jeneponto Regency. Therefore, this study was conducted to identify and analyze the relationship between exposure to cigarette advertisements on social media and smoking behavior among adolescents in Banrیمانurung Village, Jeneponto Regency. This study is expected to serve as a source of information and consideration for the government, health professionals, parents, and the community in efforts to prevent smoking behavior among adolescents, particularly regarding the influence of social media on adolescents' lifestyles and health behaviors.

2. Methods

This study employed a quantitative, correlational, cross-sectional design. A quantitative approach was selected because this study aimed to systematically and objectively determine the relationship between exposure to cigarette advertisements on social media and smoking behavior among adolescents. The study was conducted in Banrیمانurung Village, West Bangkala District, Jeneponto Regency, from October to November 2025. The research location was selected because many adolescents in the village actively use social media and are at risk of exposure to cigarette advertisements through digital platforms such as TikTok, Instagram, and YouTube. The population in this study consisted of all adolescents aged 15–19 years in Banrیمانurung Village, totaling 365 individuals. This study only involved male adolescents because this group has a higher prevalence of smoking behavior compared to females, making it more relevant for analyzing the relationship between exposure to cigarette advertisements and smoking behavior. The sampling technique used was purposive sampling based on inclusion criteria determined by the researchers. The study sample consisted of 120 male adolescent respondents aged 15–19 years who owned mobile phones, actively used social media, and were willing to participate. Given these criteria, not all members of the population qualify as respondents. Purposive sampling allows researchers to intentionally select a sample based on specific considerations and objectives, ensuring that the data collected is more relevant, valid, and aligned with the research focus. The sample size was determined using the Slovin formula, with a 5% margin of error, based on a target population of 171 male adolescents.

Data collection was conducted using a closed-ended questionnaire distributed through Google Forms. The research questionnaire consisted of several questions regarding exposure to cigarette advertisements on social media and adolescent smoking behavior. The exposure to cigarette advertisements on social media variable was measured based on respondents' experiences of seeing, reading, or hearing cigarette advertisements on social media, whereas the smoking behavior variable was measured based on adolescents' experiences of smoking or trying cigarettes. Before being used in the study, the questionnaire instrument was tested for validity and reliability with 30 respondents in Pa'rasangang Beru Village, which had characteristics similar to those of the main research location. Data analysis in this study was conducted using SPSS software through the stages of editing, coding, data entry, cleaning, univariate analysis, and bivariate analysis. Univariate analysis was performed



to describe respondents' characteristics, the level of exposure to cigarette advertisements on social media, and adolescent smoking behavior. Meanwhile, a bivariate analysis was conducted to examine the relationship between exposure to cigarette advertisements on social media and adolescent smoking behavior using the Chi-Square test, as the variables were categorical. A $p < 0.05$ indicated that H_0 was rejected and H_1 was accepted, meaning that there was a significant relationship between exposure to cigarette advertisements on social media and smoking behavior among adolescents. Conversely, a p -value > 0.05 indicated that there was no significant relationship between the two variables.

3. Results and Discussion

The results of this study are presented through univariate and bivariate analyses. Univariate analysis was used to describe the characteristics of the respondents, whereas bivariate analysis was conducted to determine the relationship between exposure to cigarette advertisements on social media and smoking behavior among adolescents in Banrimanurung Village, Jeneponto Regency.

Table 1. Characteristics of Respondents

Variables	Frequency (n)	Percentage (%)
Age		
15 Years	19	15.8
16 Years	34	28.3
17 Years	27	22.5
18 Years	16	12.3
19 Years	24	20
Advertising Exposure		
Exposed	92	76.7
Not Exposed	28	23.3
Social Media		
Tiktok	55	45.8
Instagram	23	19.2
Youtube	14	11.7
Form of Promotion		
Pictures	16	13.3
Short Videos	26	21.7
Endorsements by Influencers/Celebrities	50	41.7
Smoking Behavior		
Yes	22	18.3
No		
Type of Cigarette	52	43.4

Variables	Frequency (n)	Percentage (%)
Conventional Cigarettes	25	20.8
E- Cigarettes	21	17.5
Dual User		
Reason for First Smoking		
Experience		
Stress Relief	17	14.2
Curiosity	48	40.8
Peer Influence	29	24.2
Cigarette Advertisements Influence	4	3.3
Factors Influencing		
None	3	2.5
Peer	83	69.2
Parents	1	0.8
Siblings	1	0.8
Advertisements	10	8.3

Based on respondents' age characteristics, the 16-year-old age group was the most dominant, comprising 34 respondents (28.3%), indicating that the majority of study participants were in middle adolescence. Meanwhile, the lowest proportion was observed in the 18-year-old age group, with 16 respondents (13.3%), indicating that participation in this age group was lower than in other age groups.

It was found that the majority of respondents, namely 92 individuals (76.7%), were categorized as being exposed to cigarette advertisements. These findings indicate that most adolescents in this study frequently saw or encountered cigarette advertising content, particularly through social media. Meanwhile, only 28 respondents (23.3%) were categorized as not exposed, meaning that relatively fewer adolescents rarely or never encountered cigarette advertisements. Overall, these results illustrate that the level of exposure to cigarette advertisements among adolescents remains relatively high and constitutes an important issue to be considered in efforts to prevent smoking behavior.

TikTok had the highest exposure to cigarette advertisements among respondents, with 55 respondents (45.8%), whereas YouTube had the lowest, with 14 respondents (11.7%). These findings indicate that TikTok is the most dominant social media platform, serving as a source of cigarette advertisement exposure among respondents.

The most frequently encountered form of cigarette advertising promotion among respondents was indirect promotion through endorsements by influencers, celebrities, or TikTok creators, reported by 50 respondents (41.7%). Meanwhile, the least common form of cigarette advertising was direct product promotion via images (cigarettes/vapes), reported by 16 respondents (13.3%). These findings indicate that cigarette advertising strategies are more commonly carried out indirectly through public figures on social media rather than through direct product promotion.

In this study, the majority of respondents were categorized as smokers, totaling 98 individuals (81.7%). These findings indicate that the proportion of adolescents who engage in smoking behavior was higher than that of those who do not smoke. Meanwhile, 22 respondents (18.3%) were classified as non-smokers, indicating that this group was relatively smaller. Overall, these results suggest that smoking behavior remains quite common among adolescents in the study area. The most commonly consumed cigarette type among respondents was kretek (conventional) cigarettes, with 52 respondents (43.3%). Meanwhile, the least commonly consumed type was electronic cigarettes (vapes), with 25 respondents (20.8%). These findings indicate that conventional cigarettes remain the primary choice among respondents compared to electronic cigarettes.

The most common reason respondents first tried smoking was curiosity or experimentation, reported by 48 respondents (40.8%). Meanwhile, the least common reason was the influence of cigarette advertisements, reported by only 4 respondents (3.3%). These findings indicate that curiosity is the main trigger for adolescents to start smoking, whereas cigarette advertisements are relatively less frequently identified as the initial reason for smoking. The factor that most strongly influenced respondents' smoking behavior was peers, reported by 83 respondents (69.2%). Meanwhile, the least influential factors were parents and siblings, each reported by 1 respondent (0.8%). These findings indicate that peer influence plays a dominant role in adolescent smoking behavior compared to family influence.

Table 2. Relationship Between Exposure to Cigarette Advertisements on Social Media and Smoking Behavior Among Adolescents

Exposure to Cigarette Advertisements on Social Media	Smoking Behavior				P - Value
	Non-Smoking		Smoking		
	n	%	n	%	
Not Exposed	15	53.6	13	46.6	0.000
Exposed	7	7.6	85	92.4	

The results of the analysis presented in Table 2 show that among the 28 respondents who were not exposed to cigarette advertisements, 15 respondents (53.6%) were non-smokers and 13 respondents (46.4%) were smokers. Meanwhile, among the 92 respondents who were exposed to cigarette advertisements, only 7 respondents (7.6%) were non-smokers, whereas 85 respondents (92.4%) were categorized as smokers.

These findings demonstrate a substantial difference between the two groups, in which the proportion of adolescents who smoked was considerably higher among those exposed to cigarette advertisements compared to those who were not exposed. Overall, this pattern of association indicates that exposure to cigarette advertisements may contribute to the increased prevalence of smoking behavior among adolescents in this study.

The results of the Chi-Square test showed $p < 0.001$ ($p < 0.05$), indicating a significant relationship between exposure to cigarette advertisements on social media and smoking behavior among adolescents in Banrimanurung Village, Jeneponto Regency. This finding

suggests that the higher the exposure to cigarette advertisements on social media, the greater the tendency of adolescents to engage in smoking behavior.

This study concludes that there is a significant relationship between exposure to cigarette advertisements on social media and smoking behavior among adolescents in Banrیمانurung Village, Jenepono Regency, with a p-value of 0.001 ($p < 0.05$). Adolescents with a high level of exposure to cigarette advertisements tended to exhibit higher smoking behavior compared to those with lower levels of exposure. The widespread use of social media has made adolescents more vulnerable to cigarette promotions packaged attractively through influencers, entertainment videos, and digital lifestyle content. In addition, peer influence and the social environment also reinforce smoking behavior among adolescents (16). Therefore, health education, stricter monitoring of cigarette promotion on social media, and stronger regulations regarding digital cigarette advertising are necessary to reduce smoking behavior among adolescents .

Although only a small proportion of respondents stated that cigarette advertisements were the initial reason they started smoking, the findings of this study still demonstrated a significant relationship between exposure to cigarette advertisements on social media and smoking behavior among adolescents. This condition indicates that the influence of cigarette advertisements does not always operate directly in encouraging adolescents to begin smoking, but rather gradually shapes positive perceptions toward smoking through the normalization of smoking behavior within digital environments. Cigarette promotional content packaged through entertainment videos, modern lifestyle representations, music, and public figures may create an image that smoking is normal, attractive, and closely associated with adolescent social identity. Over time, repeated exposure may increase curiosity and reduce adolescents' perceptions of the risks associated with smoking.

The dominance of TikTok as a medium of exposure to cigarette advertisements in this study also indicates that short-video-based platforms have substantial potential to influence adolescent behavior. TikTok's algorithm enables content to spread rapidly and repeatedly according to users' interests, allowing adolescents to be continuously exposed to cigarette-related content, often without their awareness. In addition, the use of influencers, celebrities, and TikTok creators in cigarette promotion reflects a form of covert marketing strategy that is more difficult to recognize as advertising. This type of promotion tends to be more effective because it is delivered by figures perceived as relatable, attractive, and influential role models among adolescents. The results of the Chi-Square test showed $p < 0.001$ ($p < 0.05$), indicating a significant relationship between exposure to cigarette advertisements on social media and smoking behavior among adolescents in Banrیمانurung Village, Jenepono Regency.

The findings of this study also revealed that peer influence was the most dominant factor affecting smoking behavior among adolescents. This suggests that social media and peer environments may operate simultaneously in shaping smoking behavior. Cigarette-related content encountered on social media may become part of adolescents' social interactions, such as sharing videos, following trends, or imitating behaviors considered popular within peer groups (17). In the context of adolescence, social acceptance plays a highly influential role; therefore, smoking behavior is often perceived as a symbol of maturity, courage, or social adaptation within peer groups (18). This finding is consistent with Lawrence Green's theory, which posits that reinforcing factors, such as peer support and social environments, can strengthen the development and maintenance of health-related behaviors, including smoking .

Furthermore, the high proportion of adolescents exposed to cigarette advertisements indicates that monitoring and control of cigarette promotion on digital media remain suboptimal. Although the government has established regulations restricting cigarette advertising through Government Regulation Number 109 of 2012, the implementation of supervision on social media platforms continues to face significant challenges, particularly regarding indirect promotional strategies through endorsements and digital entertainment content. This finding is consistent with Lawrence Green's theory, which posits that reinforcing factors, such as peer support and social environments, can strengthen the development and maintenance of health-related behaviors, including smoking.

Conclusions

This study concludes that there is a significant relationship between exposure to cigarette advertisements on social media and smoking behavior among adolescents in Banrیمانurung Village, Jenepono Regency, with a p-value of 0.000 ($p < 0.05$). Adolescents who were exposed to cigarette advertisements on social media demonstrated a higher tendency to smoke compared to those who were not exposed. The majority of respondents in this study were exposed to cigarette advertisements through social media, particularly TikTok, and through indirect promotional strategies such as influencer, celebrity, and TikTok creator endorsements. The high level of exposure indicates that social media has become an effective medium for disseminating cigarette promotions to adolescent age groups.

This study also demonstrates that adolescent smoking behavior is influenced by various factors, including exposure to cigarette promotional content, peer influence, social environments, and adolescents' perceptions of smoking as part of a modern lifestyle and social interaction. The high prevalence of smoking behavior among adolescents indicates that cigarette promotion on social media is capable of shaping positive perceptions toward smoking, thereby increasing adolescents' curiosity and tendency to experiment with smoking.

Furthermore, this study reveals that the lack of effective supervision of cigarette promotion on social media enables adolescents to easily encounter various forms of cigarette advertising, both direct and covert, through digital entertainment content. Therefore, more intensive health education regarding the dangers of smoking is needed for adolescents, along with stronger supervision of social media use and stricter regulations concerning digital cigarette promotion in order to reduce smoking behavior among adolescents.

Further research could be conducted by examining the specific effects of exposure to cigarette advertising on social media, focusing on the advertisements viewed by the study participants. Additionally, a comparison could be made between two groups of adolescents: those who directly view cigarette advertisements and those who view smoking-related content without commercial elements on social media.

Conflicts of Interest

The authors declare no conflict of interest.

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