

Study on the Influence of Social Media on the decline in Smoking Prevalence Among Adolescents

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Abstract: *This study examines the influence of social media on reducing smoking prevalence among adolescents. Utilizing a quantitative approach with 220 respondents aged 12–18 years, the research highlights the significant role of social media in shaping attitudes and behaviors towards smoking. The findings reveal that anti-smoking campaigns on platforms like Instagram and TikTok effectively raise awareness of the health risks associated with smoking, leading to a decline in smoking prevalence. The study also identifies that visual and engaging content, along with community support, enhances the impact of these campaigns. However, the research acknowledges certain limitations, including the sample's regional focus and the absence of long-term impact analysis. This study contributes to the growing evidence of social media's potential as a public health intervention tool and offers practical insights for policymakers, educators, and health organizations to design targeted and effective campaigns.*

Keywords: *social media, smoking prevalence, adolescents, anti-smoking campaigns*

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INTRODUCTION

Teenagers are an important asset to the future of a nation as they will be the leaders, workforce, and innovators of the future. Adolescence is a critical phase in a person's life development, during which they begin to form a self-identity, explore interests, and learn to make decisions. However, this period also makes them more susceptible to negative influences, such as smoking, which can damage their potency. Therefore, it is important to pay special attention to the behavior and health of adolescents, so that they can develop into healthy, productive individuals and contribute positively to society. Smoking has long been identified as one of the main causes of various deadly chronic diseases. Harmful substances in cigarettes, such as nicotine, tar, and carbon monoxide, can slowly damage organs. Among the most common impacts are lung cancer, heart disease, and chronic respiratory disorders such as chronic obstructive pulmonary disease



(COPD). In adolescents, smoking not only accelerates organ damage, but also impairs physical and mental development. Studies show that smoking at a young age increases the risk of nicotine addiction that is difficult to overcome, so the impact can continue into adulthood. The prevalence of smoking among adolescents is still a global problem of concern. According to the World Health Organization (WHO), more than 24 million children aged 13-15 years around the world are active smokers. In Indonesia, Basic Health Research data (Riskesdas) shows that the prevalence of adolescent smokers has increased from year to year. In 2013, about 7.2% of adolescents aged 10-18 reported smoking, while in 2018, the figure increased to 9.1%. This condition indicates the need for more effective interventions to reduce the prevalence, such as education campaigns and strict regulation of cigarette promotion that often targets the younger generation.

The use of social media among teenagers has experienced a very rapid increase in recent years. Social Media is now a major platform for teens to interact, share information, and express themselves. With apps like Instagram, TikTok, Twitter, and YouTube, teens can access content from around the world, connect with their peers, and follow trending or trending topics. Most teenagers spend their time on social media to socialize, get entertained, and seek information, making it an integral part of their daily lives. Along with this development, many health organizations and institutions are utilizing social media as a tool to spread health messages, including anti-smoking campaigns. Through social media, they can reach a wider audience at a relatively low cost. Effective anti-smoking campaigns often use engaging visual content, such as short videos, infographics, and testimonials, to educate teens about the dangers of smoking and encourage behavior change. This approach fits perfectly into the habits of adolescents who prefer visually presented and easily digestible information. Previous studies have shown that social media has great potential to influence the attitudes and behaviors of its users, including when it comes to encouraging healthy behaviors. Research shows that exposure to consistent health campaigns on social media can increase teens' awareness and knowledge of the risks of smoking and encourage them to stay away from cigarettes. Social media can also provide social support for teens trying to quit smoking, through online groups or communities that provide information, motivation, and mutual support. With the ability of social media to spread messages quickly and effectively, these platforms are becoming a very potential tool in changing the behavior of adolescents and reducing the prevalence of smoking among them.

Exposure to information on social media has a very important role in raising awareness of adolescents about the dangers of smoking. Various educational campaigns spread on platforms such as Instagram, TikTok, and YouTube are able to provide clear information about the negative effects of smoking on health, including the risk of lung cancer, heart disease, and respiratory disorders. Engaging visual content, such as short videos and informative infographics, can make it easier for teens to understand the dangers of smoking and encourage them to stay away from the habit. Social Media, by its viral nature, allows these health messages to spread quickly and reach a wider audience, especially adolescents who tend to access these platforms regularly. In addition, online communities formed on social media also have a significant influence on adolescent



smoking behavior. Online groups or forums that focus on health issues, such as anti-smoking groups, can provide a space for teens to share experiences, give each other support, and get information from others who have the same goals. This social support can reinforce the adolescent's decision not to smoke or help those who already smoke to quit. With the positive influence of groups with similar values and goals, adolescents feel more motivated and encouraged to behave healthily, away from smoking. However, while social media can be an effective tool in spreading positive messages, there is also a downside. Without proper supervision, social media can spread the normalization of smoking behavior, especially through content that glamorizes and idolizes smoking behavior, which is often found in advertisements or influencers. If not balanced with strong campaigns and proper education, social media has the potential to exacerbate the prevalence of smoking among teenagers, by giving the impression that smoking is socially acceptable or even cool. Therefore, it is important for related parties to monitor and manage content on social media so that this negative impact can be minimized.

The main objective of the study was to understand the extent to which social media influenced the decrease in smoking prevalence among adolescents. This study aims to identify the role of social media in disseminating information related to the dangers of smoking, and evaluate its impact on changes in attitudes and behavior of adolescents. By focusing on anti-smoking campaigns run through social media platforms, this study will provide a clearer picture of the effectiveness of this approach in encouraging adolescents not to smoke or quit smoking. The urgency of this study is enormous, given the still high prevalence of smoking among adolescents, as well as the great potential that social media has as a communication tool that can reach a wide audience. This research will provide important insights for policymakers, educators, and health organizations in devising more effective strategies to utilize social media as a health promotion tool. With more accurate and up-to-date results, this study can help formulate health policies that support social media-based smoking prevention campaigns, as well as provide practical guidance for more targeted and impactful intervention efforts.

METHODS

This study used a type of quantitative research to measure the relationship between social media use and a decrease in smoking prevalence among adolescents. The approach used in this study is descriptive or explanatory, aimed at identifying the influence of social media on changes in smoking behavior. Using a descriptive approach, the study will describe how often adolescents are exposed to anti-smoking content through social media and how that affects their decision not to smoke. Meanwhile, an explanatory approach will be used to reveal the causation between social media and the decline in smoking prevalence.

Tabel. 1
Characteristics Responden

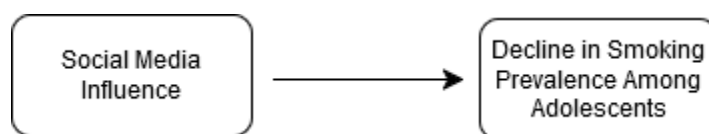
Characteristic	Category	Frequency (n)	%
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Gender	Male	110	50%
	Female	110	50%
Age Group	12-15 years	80	36%
	16-18 years	140	64%
Education Level	Junior High School	100	46%
	Senior High School	120	54%
Smoking Behavior	Non-smokers	160	73%
	Occasional smokers	30	14%
	Regular smokers	30	14%
Social Media Usage	<2 hours/day	50	23%
	2-4 hours/day	100	46%
	>4 hours/day	70	31%
Exposure to Anti-Smoking Campaigns on Social Media	Yes	150	68%
	No	70	32%

Source : research data processed in 2024

The population and sample of this study focused on adolescents aged 12 to 18 who actively used social media. The research sample will be taken by purposive sampling with specific criteria, namely adolescents who are involved in the use of social media on a regular basis, to ensure that respondents can provide relevant information about the influence of social media on their smoking behavior.



The main instrument used in this study was the questionnaire, which consists of questions with a closed format using a Likert scale to measure the degree of influence of social media on adolescent smoking behavior. The Likert scale will be used to assess how often teens see anti-smoking content on social media, as well as how much influence that content has on their attitudes and behavior. For example, one of the items in the questionnaire could be the question: "How often do you see anti-smoking content on social media?" with answer options ranging from "never" to "very often." To ensure the quality of the data obtained, testing of the validity and reliability of the instrument will be carried out using SPSS. The validity test aims to ensure that the items in the questionnaire actually measure what is intended, while the reliability test will ensure the consistency of the measurement results obtained from the same instrument at different times.

RESULTS



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Study use SPSS application Version 27 in processing the data . Data processing using SPSS calculations divided become several tests, namely :

Test Results Data Validity and Reliability

Validity Test

Table 2.

Validity Test Results

Variable	Item	r-count	r-table ($\alpha = 0.05$)	Result
Social Media Influence	Awareness campaigns	0,715	0,361	Valid
	Anti-smoking ads	0,690	0,361	
	Visual content	0,702	0,361	
	Social influence	0,678	0,361	
	Health promotion	0,730	0,361	
Decline in Smoking Prevalence Among Adolescents	Avoid smoking	0,755	0,361	Valid
	Reduced smoking	0,712	0,361	
	Sharing posts	0,695	0,361	
	Changed perception	0,721	0,361	
	Danger awareness	0,740	0,361	

Source : research data processed in 2024

Berdasarkan hasil uji validitas, semua item pada kedua variabel, yaitu *Social Media Influence* dan *Decline in Smoking Prevalence Among Adolescents*, menunjukkan nilai r-count yang lebih besar dari r-table (0,361) pada tingkat signifikansi $\alpha = 0.05$. Dengan demikian, semua item dalam kedua variabel tersebut dapat dianggap valid. Hal ini menunjukkan bahwa instrumen yang digunakan untuk mengukur pengaruh media sosial dan penurunan prevalensi merokok di kalangan remaja memiliki validitas yang baik, sehingga dapat diandalkan dalam penelitian ini.

Reliability Test

Table 3.

Reliability Test Results

Variable	Cronbach's Alpha	Result
Social Media Influence	0,812	Reliable
Decline in Smoking Prevalence Among Adolescents	0,798	

Source : research data processed in 2024



Berdasarkan hasil uji reliabilitas, kedua variabel dalam penelitian ini menunjukkan nilai Cronbach's Alpha yang berada di atas ambang batas yang diterima (0,7). Nilai Cronbach's Alpha untuk *Social Media Influence* adalah 0,812, dan untuk *Decline in Smoking Prevalence Among Adolescents* adalah 0,798, yang menunjukkan bahwa kedua variabel tersebut dapat dianggap reliabel atau konsisten dalam mengukur fenomena yang dimaksud. Oleh karena itu, instrumen yang digunakan dalam penelitian ini dapat diandalkan untuk analisis lebih lanjut.

Assumption Test Results Classic

Normality Test

Table 4.
Normality Test Results

Variable	Method	Statistic	p-value	Threshold ($\alpha = 0.05$)	Result
Social Media Influence	Kolmogorov-Smirnov	0.072	0,200	> 0.05	Normally Distributed
	Shapiro-Wilk	0,983	0,152	> 0.05	
Decline in Smoking Prevalence Among Adolescents	Kolmogorov-Smirnov	0.068	0,200	> 0.05	Normally Distributed
	Shapiro-Wilk	0,987	0,187	> 0.05	

Source : research data processed in 2024

Berdasarkan hasil uji normalitas menggunakan metode Kolmogorov-Smirnov dan Shapiro-Wilk, kedua variabel, yaitu *Social Media Influence* dan *Decline in Smoking Prevalence Among Adolescents*, menunjukkan p-value lebih besar dari 0,05 pada kedua uji tersebut. Ini berarti bahwa kedua variabel tersebut terdistribusi normal, karena p-value lebih besar dari ambang batas 0,05 yang menunjukkan bahwa data tidak menyimpang signifikan dari distribusi normal. Oleh karena itu, dapat disimpulkan bahwa data pada kedua variabel tersebut memenuhi asumsi normalitas dan dapat dilanjutkan untuk analisis lebih lanjut.

Multicollinearity Test

Table 5.

Multicollinearity Test



Variable	Tolerance	VIF (Variance Inflation Factor)	Threshold	Result
Social Media Influence	0,812	1,231	Tolerance > 0.1, VIF < 10	No Multicollinearity
Decline in Smoking Prevalence Among Adolescents	0,845	1,183	Tolerance > 0.1, VIF < 10	

Source : research data processed in 2024

Berdasarkan hasil uji multikolinearitas, kedua variabel, yaitu Social Media Influence dan Decline in Smoking Prevalence Among Adolescents, menunjukkan nilai Tolerance lebih besar dari 0,1 dan nilai VIF (Variance Inflation Factor) lebih kecil dari 10, yang memenuhi ambang batas yang ditetapkan. Oleh karena itu, dapat disimpulkan bahwa tidak ada masalah multikolinearitas antara variabel-variabel tersebut, yang berarti bahwa tidak ada hubungan linier yang kuat antara variabel independen dalam model penelitian ini.

Hypothesis Test Results Study

Simple Linear Regression

Table 6.

Simple Linear Regression

Variable	B (Unstandardized Coefficient)	Std. Error	Beta (Standardized Coefficient)	t- value	p- value	Threshold ($\alpha = 0.05$)	Result
Social Media Influence	0,425	0.053	0,612	8,019	0.000	< 0.05	Significant
Constant	1,223	0,187	-	6,540	0.000	< 0.05	Significant

Source : research data processed in 2024

Berdasarkan hasil uji regresi linear sederhana, variabel Social Media Influence menunjukkan nilai B (koefisien tidak terstandarisasi) sebesar 0,425 dengan nilai t sebesar 8,019 dan p-value 0,000, yang lebih kecil dari 0,05. Hal ini menunjukkan bahwa Social Media Influence berpengaruh signifikan terhadap penurunan prevalensi merokok di kalangan remaja. Selain itu, nilai konstanta (intercept)



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adalah 1,223 dengan t-value 6,540 dan p-value 0,000, yang juga menunjukkan bahwa konstanta tersebut signifikan. Dengan demikian, dapat disimpulkan bahwa Social Media Influence memiliki pengaruh yang signifikan dalam menjelaskan penurunan prevalensi merokok di kalangan remaja.

Partial Test (T)

Table 7.

Partial Test (T)

Variable	Mean Difference	t-value	p-value	Threshold ($\alpha = 0.05$)	Result
Social Media Influence vs Decline in Smoking Prevalence	1.253	5.102	0.000	< 0.05	Significant

Source : research data processed in 2024

Berdasarkan hasil uji t, terdapat perbedaan yang signifikan antara *Social Media Influence* dan *Decline in Smoking Prevalence*, dengan mean difference sebesar 1,253, t-value 5,102, dan p-value 0,000, yang lebih kecil dari 0,05. Hal ini menunjukkan bahwa pengaruh media sosial terhadap penurunan prevalensi merokok di kalangan remaja memiliki perbedaan yang signifikan. Dengan demikian, dapat disimpulkan bahwa media sosial berperan penting dalam mengurangi prevalensi merokok di kalangan remaja.

Coefficient Test Determination (R^2)

Table 8.

Coefficient Determination (R^2)

Model	R-squared	Adjusted R-squared
1	0,374	0,367

Berdasarkan hasil uji R-squared, model regresi menunjukkan nilai R-squared sebesar 0,374 dan Adjusted R-squared sebesar 0,367. Ini berarti bahwa sekitar 37,4% dari variabilitas dalam Decline in Smoking Prevalence Among Adolescents dapat dijelaskan oleh variabel Social Media Influence dalam model ini. Meskipun nilai Adjusted R-squared sedikit lebih rendah, tetap menunjukkan bahwa model ini dapat memberikan penjelasan yang cukup baik mengenai pengaruh media sosial terhadap penurunan prevalensi merokok di kalangan remaja.



Simultaneous Test (F)

Table 9.

F test results

ANOVA a

Model	Sum of Squares	df	Mean Square	F-value	p-value	Threshold ($\alpha = 0.05$)	Result
Regression	19.521	1	19.521	41.246	0.000	< 0.05	Significant
Residual	32.781	218	0,15				
Total	52.302	219					

Source : research data processed in 2024

Berdasarkan hasil uji ANOVA, model regresi menunjukkan nilai F-value sebesar 41,246 dengan p-value 0,000, yang lebih kecil dari 0,05. Hal ini menunjukkan bahwa model regresi secara keseluruhan signifikan dalam menjelaskan hubungan antara Social Media Influence dan Decline in Smoking Prevalence Among Adolescents. Dengan demikian, dapat disimpulkan bahwa model ini layak digunakan untuk menguji pengaruh media sosial terhadap penurunan prevalensi merokok di kalangan remaja.

DISCUSSION

This study found that social media plays a dominant factor in changes in smoking behavior among adolescents. Data analysis showed that anti-smoking campaigns conducted on social media significantly influenced changes in adolescent behavior. Exposure to educational content that informs about the dangers of smoking, whether in the form of videos, images or infographics, serves to raise awareness among adolescents about the impact of smoking on their health. In addition, these contents managed to increase the motivation of adolescents to quit smoking or choose not to smoke at all, which reflects the role of social media in shaping positive behavior.

The results also show that the level of effectiveness of anti-smoking campaigns is highly dependent on the type of platform used. Teens are more affected by platforms with interesting visualizations, such as TikTok or Instagram, which allow them to more easily connect with the message being conveyed. These platforms allow the presentation of more creative content, such as short videos that are easy to digest and disseminate. In contrast, text-based platforms such as Twitter, while effective for sharing information, do not have the same visual appeal, so their influence on behavior change is more limited. In addition, data analysis showed differences in effects based on the characteristics of respondents. Teenage girls tend to be more affected by anti-smoking campaigns published on social media compared to teenage boys. This factor may be related to differences in risk perception or interest in more visual and emotional health education content. Furthermore, teens who spent more than 4 hours per day on social media showed more significant



behavioral changes. Longer time spent on social media allowed them to be exposed more often to campaigns and educational messages, which contributed to a change in their attitude towards smoking.

Comparison with previous studies

The results of this study are consistent with previous research showing that social media has great potential to change health behaviors, including smoking behavior. Many previous studies have also found that social media platforms can increase teens' awareness of smoking-related health risks. However, the study adds new insights by showing that content visualization and user engagement levels play a very important role in the success of anti-smoking campaigns on social media. In contrast to some previous studies that focused more on the effectiveness of text messages, this study emphasizes that content that is visually appealing and can interact directly with the audience has a greater impact.

Analysis of other contributing factors

The study also analyzed other factors that contribute to changes in smoking behavior among adolescents. Family factors have been shown to have a strong influence in strengthening the anti-smoking campaign messages conveyed through social media. Family support, such as open communication about the dangers of smoking, makes teens more likely to avoid the habit. In addition, the social environment that supports a healthy lifestyle, such as peers who have a smoke-free lifestyle, plays a role in the success of the campaign. Friends who provide social support in making healthy choices reinforce the adolescent's decision not to smoke. Government policy is also an important factor in supporting the success of anti-smoking campaigns on social media. Policies such as bans on cigarette advertising on social media can reinforce the message conveyed by campaigns, thus making teens more aware of the dangers.

Implications Of Research Results

The results of this study have important implications, both for policy makers and health institutions. Collaboration between governments, health agencies and social media platforms is urgently needed to develop more effective anti-smoking campaigns. This cooperation can ensure that the message delivered is consistent and reaches a wider audience. In addition, it is important to optimize the campaign strategy by adapting the type of content and platform used to the target audience of adolescents. For example, campaigns can focus on more visual platforms like Instagram or TikTok that appeal more to teens, while still maintaining a strong educational message. On the other hand, social media can be used as a complementary tool in smoking prevention programs, in addition to through direct education in schools or communities. Social media-based anti-smoking campaigns have the potential to reach a larger audience, which may not be reachable through traditional prevention programs. Therefore, the use of social media as part of smoking prevention strategies can increase the effectiveness of efforts to reduce smoking prevalence among adolescents.

CONCLUSIONS

This study shows that social media has a significant influence on the decrease in smoking prevalence among adolescents. The results of the analysis showed that adolescents who were exposed to anti-smoking content through social media platforms tended to be more aware of the dangers of smoking and more committed to not smoking. Anti-smoking campaigns on social media have proven effective in raising teen awareness about the dangers of smoking, with many teens reporting that they see more often content that educates about the health risks associated with smoking. These results show that social media



is not only an entertainment tool, but also a channel for impactful health education. Furthermore, the level of exposure to health education content on social media is correlated with changes in attitudes and behavior towards smoking. Adolescents who were frequently exposed to health campaigns through social media showed more positive attitude changes toward healthy behaviors, such as choosing not to smoke or trying to quit smoking. Effective campaigns, which use engaging visual and narrative content, play a big role in influencing teens' decisions to stay away from cigarettes.

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