

Social media and smoking behavior in college students

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Abstract

Purpose: Indonesia is the largest cigarette consumer in Southeast Asia and has the third-highest number of smokers in the world. Smoking behavior in Indonesia causes 225,000 people to die each year. Social media exposure may have an impact on smoking behavior. Most students use social media and have a high probability of viewing information about cigarettes. Information from social media can affect smoking behavior in students. This study aims to investigate the relationship between social media use and smoking behavior among college students. **Methods:** This study employed a quantitative method with an observational design, involving 200 respondents. The instrument used in this study was a questionnaire designed to determine the relationship between social media use and smoking behavior among college students. The questionnaires were distributed using the checklist and short questions method, which was shared online via Google Form. **Results:** Most college students (80.5%) do not smoke, and most smokers (87.18%) are male. The bivariate analysis result shows that active response to pro-smoking messages has a significant relationship with smoking behavior ($p < 0,05$). **Conclusion:** Pro-smoking messages in certain types of social media can influence smoking behavior in students.

Keywords: college students; smoking behavior; social media

INTRODUCTION

Indonesia is the largest cigarette consumer in Southeast Asia and the third-largest in the world [1]. Indonesia is the second-largest cigarette market in the world, with sales of 316.1 billion cigarettes in 2016 [2]. Smoking behavior in Indonesia causes 225,000 people to die each year [3]. The prevalence of smoking in Indonesia is high, 62.9% men are smokers, and 4.8% women are smokers [4].

The prevalence of male smokers is the highest prevalence of smokers in Indonesia and in the world [5]. Most smokers start smoking at less than 18 years old [6]. Smoking behavior that occurs at an early age can lead to greater health problems in the future [7]. Health problems caused by smoking at an early age are

decreased immunity, increased risk of cancer, respiratory disease, heart disease, and stroke [8].

The number of young smokers worldwide is increasing each year [9]. Smoking behavior can be influenced by media exposure [10]. Social media is a popular platform for sharing information and connecting with others. Most college students use social media and have a high probability of viewing information about smoking. Access to information on social media by college students can affect smoking behavior [11]. Smoking behavior in college students can be influenced by social pressure from parents, friends, and the media. Other factors that can influence smoking behavior in college students are poor academic achievement, low socioeconomic status, intention to smoke in the future, family members who

smoke, having friends who smoke, exposure to film promotions about cigarettes, and exposure to cigarette advertisements [12]. Cigarette advertisements can be found easily because there are no rules that prohibit cigarette advertising; cigarettes can still be advertised with some conditions. Indonesia is the only country in the Asia-Pacific region that does not prohibit cigarette advertising [2]. The terms and restrictions on cigarette advertisements do not become an obstacle for the cigarette industry to promote cigarettes. The cigarette industry utilizes social media to indirectly promote cigarettes [13]. Cigarette advertisements are displayed on social media, which is often accessed by users. Pro-cigarette messages broadcast through social media are packaged creatively, attractively, and coolly by social media users [14].

Social media has become an integral part of college students' lives. Social media makes it easy to access information that can trigger intentions and lead to smoking behavior in college students. Based on this reason, researchers are interested in investigating the relationship between social media use and smoking behavior among college students.

METHODS

This study employed a quantitative method with an observational design, involving 200 respondents. This research has received ethical approval from the ethics committee. The sampling technique employed in this study utilized a non-probability sampling method, specifically quota sampling. Respondents in this study were undergraduate students at the Faculty of Engineering, Gadjah Mada University, who used at least two social media platforms. The respondents in this study are between 17 and 25 years old.

The instrument used in this study was a questionnaire designed to determine the relationship between social media use and smoking behavior among college students. Questionnaires were distributed online using Google Forms, employing a checklist and short question method. The data collected was analyzed statistically using logistic regression in Stata software version 14. The analysis conducted in this study was both univariate and bivariate.

RESULTS

Table 1 shows that most respondents are male (71%) and that the majority are between 21 and 23 years old (51%). Based on economic status, it is known that more than half (55.50%) of the population has a low

economic status. Most of the students (80.50%) do not smoke. Based on the first smoking age among smokers, it is known that 20 people (51.28%) first smoked at 10-14 years old. Most smokers are male, comprising 34 people (87.18%). Some of the respondents who smoked were 31 people (79.49%) smoking 1-10 cigarettes each day, and 12 people (51.28%) smoking more than 40 cigarettes each week. Based on smoking distance after waking up, 20 people (51.28%) smoked after more than 60 minutes of waking up from sleep.

Table 2 shows that respondents who responded actively to pro-smoking messages on social media had a greater risk of smoking (OR 3.36; CI 1.53-7.40) than respondents who did not respond. Table 3 shows that respondents who gave active and passive responses to pro-smoking messages on WhatsApp had a greater risk of smoking (OR 3.20; CI 1.46-7.01) than respondents who did not respond. Respondents who gave active and passive responses to anti-smoking messages on social media did not show a significant relationship to smoking behavior. Table 4 shows a significant relationship between respondents who responded actively to pro-smoking messages on social media: WhatsApp (OR 4.18; CI 1.42-12.36), Facebook (OR 3.07; CI 1.02-9.22). Respondents who responded passively to pro-smoking messages on WhatsApp social media had a greater risk of smoking (OR 2.85; CI 1.29-6.32) than respondents who did not respond.

Table 1. Characteristic respondents

Variables	Categories	n	%
Gender	Male	142	71.00
	Female	58	29.00
Age (years)	18-20	71	35.50
	21-23	102	51.00
	≥24	27	13.50
Income	Low	111	55.50
	High	89	44.50
Smoking status	No	161	80.50
	Yes	39	19.50
Smoking status by gender	Male	34	87.18
	Female	5	12.82
First smoking age (years)	5-9	10	25.64
	10-14	20	51.28
	15-19	6	15.38
	20-24	3	7.69
Cigarette in the day	Never	4	10.26
	1-10	31	79.49
	11-20	3	3.00
	21-40	1	1.00
A cigarette a week	Never	2	5.13
	1-10	11	28.21
	11-20	4	10.26
	21-40	10	25.64
	>40	12	30.77
Consume a cigarette after waking up (minutes)	Never	6	15.38
	>60	20	51.28
	31-60	5	12.82
	6-30	5	12.82
	≤5	3	7.69

Table 2. Smoking message on social media and smoking behavior

Variables	Categories	n	OR	p	95% Low	95% High
Smoking message on social media	No	60	1.00	0.79	0.51	2.41
	Yes	140	1.11			
Pro-smoking message (active and passive response)	No	86	1.00	0.18	0.78	3.46
	Yes	114	1.66			
Anti-smoking message (active and passive response)	No	102	1.00	0.75	0.56	2.23
	Yes	98	1.12			
Pro-smoking message passive response	No	90	1.00	0.21	0.77	3.29
	Yes	110	1.60			
Anti-smoking message passive response	No	103	1.00	0.70	0.57	2.31
	Yes	97	1.15			
Pro-smoking message active response	No	163	1.00	0.00	1.53	7.40
	Yes	37	3.36			
Anti-smoking message active response	No	151	1.00	0.82	0.40	2.07
	Yes	49	0.91			

Note: p (p-value); OR (Odds Ratio)

Table 3. Pro and anti-smoking messages on social media and smoking behavior

Variables	Pro-smoking				Anti-smoking			
	OR	p	95% Low	95% High	OR	p	95% Low	95% High
Smoking message on YouTube								
No	1.00	0.51	0.63	2.55	1.00	0.18	0.80	3.37
Yes	1.27				1.64			
Smoking message on Facebook								
No	1.00	0.31	0.66	3.66	1.00	0.76	0.36	2.18
Yes	1.56				0.88			
Smoking message on Instagram								
No	1.00	0.27	0.73	3.08	1.00	0.13	0.85	3.70
Yes	1.50				1.77			
Smoking message on WhatsApp								
No	1.00	0.00	1.46	7.01	1.00	0.66	0.52	2.80
Yes	3.20				1.21			
Smoking message on Twitter								
No	1.00	0.60	0.55	2.79	1.00	0.87	0.39	2.20
Yes	1.24				0.93			
Smoking message to others								
No	1.00	0.14	0.83	3.70	1.00	0.85	0.50	2.31
Yes	1.75				1.8			

Note: p (p-value); OR (Odds Ratio)

Table 4. Pro-smoking message on social media and smoking behavior

Variables	Pro-smoking							
	Active response				Passive response			
	OR	p	95% Low	95% High	OR	p	95% Low	95% High
Smoking message on YouTube								
No	1.00	0.36	0.56	5.01	1.00	0.42	0.66	2.69
Yes	1.67				1.33			
Smoking message on Facebook								
No	1.00	0.04	1.02	9.22	1.00	0.45	0.58	3.41
Yes	3.07				1.40			
Smoking message on Instagram								
No	1.00	0.07	0.92	5.95	1.00	0.24	0.75	3.17
Yes	2.34				1.54			
Smoking message on WhatsApp								
No	1.00	0.01	1.42	12.36	1.00	0.01	1.29	6.32
Yes	4.18				2.85			
Smoking message on Twitter								
No	1.00	0.22	0.65	6.15	1.00	0.54	0.57	2.90
Yes	2.01				1.29			
Smoking message to others								
No	1.00	0.22	0.65	6.15	1.00	0.10	0.89	3.97
Yes	2.01				1.88			

Note: p (p-value); OR (Odds Ratio)

DISCUSSION

Smoking behavior is higher in males because males have the potential to smoke 3 times greater than females [15]. Males believed that smoking would make them appear more attractive and accepted in society [16]. Males also tend to be more easily exposed to cigarette advertisements than females [17]. College students who have higher pocket money also have a greater risk of smoking [18]. This is because people with higher pocket money also have easier access to cigarettes [19]. Higher income is likely to increase the possibility of being exposed to cigarette advertisements [20]. Exposure to pro-smoking advertisements can increase cigarette use and increase the desire to smoke [21].

Smokers share more pro-smoking messages than non-smokers [11]. Exposure to pro-smoking messages is related to smoking attitudes because smokers are more able to identify pro-smoking messages than non-smokers. The image of smokers in pro-smoking messages also looks attractive to smokers and non-smokers [22]. Pro-smoking messages contain interesting and beneficial effects of smoking [23]. It can turn a bad smoking picture into something good and looks cool to consume [24]. Pro-smoking norms also influence smoking initiation in individuals who actively respond to cigarette messages on social media to reward smokers [25].

Some social media sites have bans on cigarette advertising, but these bans are not strictly enforced for all content [26]. Strict bans on cigarette advertisements have a significant impact on their exposure on social media, which increases each year [17]. Social media, in its use, also involves communication activities and the involvement of friends in sharing information. This is used by certain parties to advertise cigarette products and can be an opportunity to initiate cigarette consumption [27]. Certain social media platforms are particularly popular for disseminating information, including details about smoking [28].

Social media that contains anti-smoking messages does not have a significant relationship with smoking behavior [29]. Anti-smoking messages, such as the dangers of smoking, do not affect individuals in consuming cigarettes [30]. Anti-smoking messages can raise awareness of the dangers of smoking, but cannot change the behavior of smokers [31]. Anti-smoking messages can have a boomerang effect, especially for college students who smoke [29]. Anti-smoking messages circulating are considered ineffective and

need to be improved in the midst of incessant promotions carried out by cigarette companies [32]. Smokers also have low smoking cessation intentions even after exposure to anti-smoking information [33]. Cigarette advertisement exposure on social media also does not affect susceptibility to smoking in young adult age groups [17]. This is due to the low exposure to information about smoking and the low use of certain social media by individuals [34].

The problem of smoking in young adults or in college-age individuals has an inverse relationship with education. Individuals entering college may have the urge to try smoking cigarettes or smoke more frequently while in college. Therefore, an anti-smoking campaign is needed in the university environment [35]. Anti-smoking messages on social media have not been successful in reducing the intention to smoke, even though it is a tool to persuade [23]. Campaign to reduce cigarettes, increase cigarette taxes, denormalize smoking behavior, and limit access to cigarettes [36]. Prohibition of smoking in public places, a comprehensive control program, communication by social media, warning of the dangers of smoking on cigarette packs, prohibition of cigarette advertising, and the existence of a treatment policy to stop smoking are needed to reduce the number of smokers [37].

CONCLUSION

Pro-smoking messages on social media have a relationship with smoking behavior in college students. WhatsApp and Facebook, in their active response to pro-smoking messages, have a relationship with college students' smoking behavior.

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