

Research Article

Factors related to smoking behavior of students in Traditional Pesantren Aceh Besar, Indonersian in 2018Ismail^{1,2*}, Teuku Tahlil³, Nurussalam⁴ dan Zurnila Marli Kesuma⁵¹Graduate School of Mathematics and Applied Sciences (DMAS) Universitas Syiah Kuala, Banda Aceh 23111, Indonesia;^{*2}Nursing Department of Health Polytechnic Aceh Health Ministry;³Nursing Faculty, Universitas Syiah Kuala, Banda Aceh 23111, Indonesia;⁴Nursing Faculty, Airlangga University;⁵Statistic Department, Faculty of Mathematics and Natural Science, Universitas Syiah Kuala, Banda Aceh 23111, Indonesia;**Abstract:**

Smoking is a serious issue causing a variety of adverse health effects. However, pesantrens (Islamic boarding schools) do not prohibit smoking, their leaders and teachers also smoke, and cigarettes are sold freely outside. The students have further admitted that anyone may smoke any where and that no socialization on smoking has ever been conducted in pesantrens. The purpose of this study was to analyze the relationships between the student smoking behavior, knowledge, and attitudes towards the social marketing mix in traditional pesantrens. This study employed a descriptive analytics with the cross sectional study design. The total sample was 162 students from a pesantren in Aceh Besar, Indonesia. The results showed that there were significant relationships between student smoking behavior and age (p -value = 0.031), and parents' smoking behavior (p -value = 0.003), and peersmoking behavior (p -value = 0.000), and knowledge of the social marketing mix (p -value = 0.010), and attitudes (p -value = 0.000) towards the social marketing mix. It is thus recommended that all parties develop a pesantren as one of the focus areas of smoking prevention activities.

Keywords: Social Marketing, Smoking Behavior, Traditional Pesantren Students**Introduction**

Cigarette smoking has caused various health problems having been further responsible for six million deaths each year (Naeem, 2015). By 2020, smoking is projected to cause 10 million deaths per year and increase premature deaths to 70% in developing countries (Voigt, 2010). In the context of Indonesia, the number of deaths from smoking is estimated at 200,000 people each year (Risksedas, 2010).

There are a variety of reasons for individuals to smoke, one of which is due to environment. Initially, one may only observe another person smoking, and later trying smoking. When one gets addicted to smoking, one may smoke again under various pretexts, such as reducing anxiety, relieving boredom and stress, being accepted in a particular group, and family problems (Kaplan, 1993).

Several factors, like attitudes and behavior of parents or family members who smoke in front of children, will also encourage the children to smoke and lead them to assume that this behavior does not contradict the norms (Peterson et al., 2006). In a similar vein, Helgason and Lund (2001) also remark that parental smoking exposure will have an impact to their children. In the past, people used to consider smoking as a symbol of friendliness and communication, and in some cultures, smoking was thought as a prestigious behavior

resulting in personal satisfaction (Egbe, 2016). If smoking habit has been established, social factors play an essential role in maintaining smoking behavior (Kaplan, 1993).

If not prevented, smoking behavior among students is predicted to trigger a number of social issues, such as misuse of marijuana, alcohol, and other illicit substances, since many studies have found that smoking addiction was a gate way to drug and alcohol abuse (Rokiah Abu Bakar, 2013). Therefore, young consumers who only start smoking should be properly cultivated and nurtured in order not to develop the habit (Chamim et al., 2011). Smoking is one type of behaviors that can be changed (Natoatmodjo, 1993) if intention and attitudes including motivation to obey are present (Ajzen & Fishbein, 1967).

The Regional Health Research Report (Riskseda) in Indonesia in 2013 found that 52.3% of the average smokers consumed 1-10 cigarettes per day, whereas the percentage of smokers with an average of 21-30 cigarettes per day was the highest in Aceh Province (9.9 %). In addition, the prevalence of adolescents aged 16-19 years who smoked increased threefold from 7.1% in 1995 to 20.5% in 2014, and the age of beginner smokers among adolescents became much younger (early). Beginner smokers aged 10-14 years rose more than 100% in a period of less than 20 years, from 8.9% in 1995 to 18% in 2013

(Riskesdas, 2013).

There have been many regulations in Indonesian about smoking in 2011 the Minister of Health and the Minister of Home Affairs issued a joint regulation number 188/Menkes/PB/I/2011 concerning the guideline for the implementation of non smoking areas. The Indonesian Ulama Council (MUI) had also released *afatwa* (religious ruling) in 2003 that smoking was *makruh* (abominable). The *fatwa* was later revised to *haram* (forbidden) for pregnant women, for children, and in public places, following the coordination meeting of the Sumatran MUI in Palembang in July 2008. Likewise, Aceh Province had also issued a *qanun* (regional by law) number 6 of 2011 and a Regent of Aceh Besar Regulation number 40 of 2016 on free smoking areas. However, these regulations have failed to reduce the number of smokers in Aceh. The preliminary observations further revealed that, in fact, the traditional pesantrens did not ban smoking within the school areas and the leaders and the teachers also smoked, while cigarettes could be purchased easily. The students also stated that people could smoke anywhere and there has never been any socialization about smoking within the pesantrens.

Research Methods

This present study used a descriptive analytics with the cross sectional study design. The respondents in this study were 162 students of one traditional pesantren in Aceh Besar, Aceh, Indonesian. The selection criteria was having been a student of at least one year with a maximum age of 20 years.

Research Instrument

The questionnaire in this study was independently developed based on literature review. The questionnaire was made up of four parts: the characteristics of the respondents, the social marketing mix, the attitudes towards the social marketing mix, and the student smoking behavior.

Research Ethics

The research protocol was approved by the Health Research Ethics Committee of Health Polytechnic of Aceh Ministry of Health, Aceh Besar. Approval forms were obtained from the students before they responded to the questionnaire.

Data Analysis

The analysis used to test the hypotheses was a chi squared test, with a level of significance of below 0.05 (p value < 0.05).

Results

Table 1: Frequency distribution of variables

Variable	Measuring Results	Total	(%)
Age	<15 years old	14	4.0
	15-18 years	126	78.4
	> 18 years old	22	13.6
Parental smoking behavior	Smoke	109	67.3
	Do not smoke	53	32.7
Peer smoking behavior	Smoke	99	61.1
	Do not smoke	63	38.9
Knowledge of social marketing	Low	94	58.0
	High	68	42.0

Attitudes towards social marketing mix	Negative	98	60.5
	Positive	64	39.5
Smoking Behavior	Smoke	112	69.1
	Do not smoke	50	30.9

Table 1 describes that the majority of the respondents were 15-18 years old (78.4%). 67.3 % of the respondents' parents were smokers, and 61.1% of the respondents had peers who also smoked. In addition, most respondents (58.0 %) had low knowledge, were negative towards the social marketing mix (60.5%), and smoked (69.1%) as well.

Table 2: Statistics of factors related to student smoking behavior

Variable	Measuring Results	Smoking Behavior		P-Value
		Smoking (%)	No (%)	
Age	<15 years old	11 (78.6)	3 (21.4)	.031
	15-18 years	91 (72.2)	35 (27.8)	
	> 18 years old	10 (45.5)	12 (54.5)	
Parental smoking behavior	Smoke	84 (77.1)	25 (22.9)	.003
	Do not smoke	28 (58.2)	25 (47.2)	
Peer smoking behavior	Smoke	79 (79.8)	20 (20.2)	.000
	Do not smoke	33 (52.4)	30 (47.6)	
Knowledge of social marketing mix	Low	73 (77.7)	21 (22.3)	.010
	High	39 (57.4)	29 (42.6)	
Attitudes towards, Social marketing mix	Negative	83 (84.7)	15 (15.3)	.000
	Positive	29 (45.3)	35 (54.7)	

Table 2 illustrates that the respondents aged <15 years (78.6%) who smoked were slightly higher than those aged 15-18 years (72.2%), while less than half of the older respondents (>18 years old) smoked with *p-value* of 0.031. The respondents who smoked were also found to be higher within parental smoking exposure (77.1%) compared to those without (58.2%) with *p-value* of 0.003. The proportion of the respondents with peer smokers was also larger (79.8%) than those with no peer smokers (52.4%) with *p-value* of 0.000. Further, smoking was mostly within the respondents with low knowledge about the social marketing mix (77.7%) compared to those with high knowledge (57.4%) with *p-value* of .010. In addition, smoking was also more common in the respondents with negative attitudes towards the social marketing mix (84.7%) than in those with positive attitudes (45.3%) with *p-value* of 0.000.

Discussion

The findings of this study indicated that there was significantly larger percentage (78.6%) of younger smokers (<15 years old) within the pesantren. This figure was higher than that in the Global Adult Tobacco Survey (GATS, 2011) which found that 23.1% of teenagers were smokers. This study, thus, supported the argument that most tobacco users started smoking during their teenage years (Hammond et al.,

2008; WHO, 2013), and around 80% of them were before the age of 18 in the US (Centers for Disease Control & Prevention, 2012). Several local studies in Malaysia also showed that the age of initiation of smoking ranged from 11 to 14 years (Lim et al., 2010; Lipperman-Kreda et al., 2014). In addition, 56.7% of male students in residential areas were smokers even before entering secondary school and 54% of them were regular smokers at the age of 16 (Lim et al., 2006). A survey among adults who smoked every day in the US found that 82% of them tried cigarettes for the first time when they were not even 18 years old, and 53% turned into daily smokers before the age of 18 (HHS, 1994). Several studies on teenage smokers conducted in developed countries also reported that nearly 50% of adolescents who were only 18 years old had already smoked and most of them were regular smokers (Naing et al., 2004).

The result of the chi squared test in this study obtained *p-value* of 0.031, highlighting that there was a significant relationship between age and smoking behavior of the students in the pesantren. This result was in line with that in Hwang's and Park's (2014) study on Korean adolescents, and relatively similar to that in Reidpath et al.'s (2013) which claimed that in Latvia there was a significant relationship between the initiation age of smoking and current smoking behavior.

The earlier one starts smoking, the harder it is to stop and the less likely one will completely stop (Flay et al., 1989), and also the greater the risk of lung cancer (Charlton, 1984) or death from coronary heart disease (Fielding, 1985). The opportunity for successful smoking cessation also decreases along with the increase of age (Lennox, 1992), and therefore, prevention programs on smoking for teenagers are deemed necessary following the strong influence of age in smoking behavior.

In regard with smoking exposure, this study discovered that 77.1% of the students lived with parents who smoked, and this proportion was quite bigger than either in Naing et al.'s (2004) study of 44.1% or Lim et al.'s (2010) of only 18.3%. The chi squared test gained *p-value* of 0.003 suggesting that there was a significant relationship between smoking behavior of parents and smoking behavior of students. This result also conformed to the findings in the study by Lim et al. (2010) on the relationship between parental smoking behavior and teenage smoking behavior as well as in the studies by Naing et al. (2004) and Wang et al. (2016).

The teenage smoking behavior can be further explained by the theory of social learning on behavior (Social Learning and Personality Development, 1963) arguing that children are more likely to model their own behavior in the actions of people they deem appropriate. Two other studies (Newman & Ward, 1989; Eiser et al., 1963) then revealed that parents' attitudes in actively preventing their children from smoking may have had a stronger impact than parents' behavior in shaping their teenagers' smoking behavior. Additionally, two other studies (Baugh et al., 1982; Paine, Amaral, & Pereira, 1985) also asserted that the majority of smokers began their smoking habit by imitating friends, coworkers or family members. These findings further suggested that in order for

the campaign against smoking in adolescents to be more effective, parents should not smoke in front of their children and vice versa. The home environment should be able to discipline children and the role model should also be set at home. Having family members who smoke elevates the risk of smoking as constant exposure of smoking to the other family members will speed up the process of copying behavior, since observation is one essential factor in learning, and this copying will generally affect individuals of the same sex (Bandura, 1977).

Further, in this study, it was found that more than 70% of the respondents had friends who were smokers. This result was apparently higher than that in Lim et al. (2010) of only 28.1% and that in the study by Subramanian, Arifah, and Addy (2017) of 51.8%. The chi-squared had *p-value* of 0.000 indicating that there was a significant relationship between peer smoking behavior and smoking behavior of the students in the pesantren. The finding was similar to that in the study of Subramanian et al. (2017) in the district of Jatinangor, Indonesian outlining a relationship between peer pressure and smoking behavior of students.

The primary factor associated with smoking in adolescents is having friends who smoke (Pereira et al, 2017). Some studies also agreed that being friends with smokers created more tolerance to smoking habit, including the possibility of adopting the behavior (Schaefer, Haas, & Bishop, 2012). These data were also corroborated by research in North America, which observed that non-smoking teens who had smoking friends were more likely to develop smoking habit in the future than those who did not (Bricker, 2006).

Peer influence is a modifiable external variable that contributes to smoking and it may also become a double-edged sword (Wen et al., 2007) as having a friend who smokes can affect a teenager to also smoke because of peer pressure and encouragement to be accepted into a group. 90% of smokers started smoking with their friends, as also shown in Unger et al. (2002) on Chinese and California adolescents, and thus, peer influence factor is critical in smoking initiation.

Peer influence was found to be a strong predictor of smoking initiation in almost all studies. The two types of peer pressure, having close friends who smoke and having close friends who encourage to smoke, are among the strongest risk factors for smokers (Preventing Tobacco Use among Young People, 1994), and these were proven in the study in China (Zhu, Liu & Wang, 1992). In addition, studies from Japan (Kawabata, Maruya, & Nakamura, 1991) and Spain (Auba & Villalbi, 1993) have shown that the smoking rate of school students was strongly related to having friends who smoked. These findings suggested that the students should be advised to avoid befriending smokers as the negative effects are not only limited to the smell of cigarettes and the dangers of passive smoking, but also the pressure to keep up with the habit.

In terms of knowledge, it was found that most (77.7%) of the respondents who smoked had low knowledge in this study. This outcome was comparably higher than that in Obaid et al.'s (2015) study of 35.0%. Moreover, smokers generally had lack of knowledge about the harmful effects of smoking

compared to non-smokers (Foong& Tan, 2008; Nagggar,2011). The chi-squared test on this factor resulted in *p-value* of 0.000, referring to a significant relationship between knowledge about the social marketing mix and the smoking behavior of the students in the pesantren. The finding was in accord with those in the studies of Obaid et al. (2015) and Nagggar (2011); however, it differed from those in the studies of Yogae et al.(2014) and Samira (2017) that non -smoking students had better knowledge of smoking and its dangers and conversely, confirming the studies in South Australia (Dollman, 2007) and in Turkey (Golbasi, 2011).

Further, in relation to attitudes, this study pointed out that 84.7% of the students' attitudes were mostly negative. The study had a much greater proportion than that of Obaid et al.'s (2015) study which identified only 41.3% with a negative attitude. The result of the Chi-Squared test then obtained *p-value* of 0.000, showing that there was a relationship between the students' attitudes and their smoking behavior. The same findings were also reported by the studies of Naggaret al., (2011), Yogae et al., (2014), and Samira (2017). In this study, the students who did not smoke possessed a better attitude towards the use of tobacco and its harmful effects and vice versa, as also conformed by the research of Dollman (2007) and Golbasi (2011).

Having reviewed the afore mentioned findings, the study pinpointed that there is the need to improve the students' knowledge by promoting the anti-smoking campaign through various ways. School-based smoking prevention programs should also be sensitive to the diversity of culture, ethnicity, and economy of the students (Shetgiri, 2011; McKennitt& Currie, 2012).

Conclusions

The study concluded that the relationships were significant between student smoking behavior and age (*p-value*= 0.031), and parents' smoking behavior (*p-value*= 0.003), and peers smoking behavior (*p-value*=0.000), and knowledge of the social marketing mix (*p-value*= 0.010), and attitudes (*p-value*= 0.000) towards the social marketing mix. The implication is that future anti-smoking propaganda should take into account the students' age, culture, family, and ethnicity in order to prevent the younger generation to smoke. It is also recommended that pesantrens become one of the focus areas of smoking prevention activities.

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