

# Indonesian adolescents' perspectives on smoking habits as a reference for a prevention program: a qualitative study

fithria fithria (✉ [fithria@unsyiah.ac.id](mailto:fithria@unsyiah.ac.id))

Universitas Syiah Kuala <https://orcid.org/0000-0001-8175-3626>

**Muhammad Adlim**

Universitas Syiah Kuala

**Syarifah Rauzatul Jannah**

Universitas Syiah Kuala

**Teuku Tahlil**

Universitas Syiah Kuala

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## Research article

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# Abstract

**Background:** Religious factors have been used in tobacco control campaigns but due to different perceptions among Muslim scholars that might have an effect on followers, the strategies of control programs are still interesting. Therefore, this qualitative research aimed to explore the perspectives of Muslim adolescents on smoking habits as a reference for developing effective prevention programs.

**Methods:** Three focus group discussions involving 24 junior high school students (mean age=13.75 years) were the main source of data for this phenomenological qualitative study. The discussion guide was developed by the researchers based on the reviewed literature and validated by experts. The research findings were analyzed using an inductive content method with systematic steps based on the stages of qualitative data analysis.

**Results:** Adolescent perspectives on smoking were grouped into two themes: (a) perception, which encompassed three sub-themes: smoking as a social habit, contradictive feelings, and the Islamic perspective; (b) smoking-related factors involving peer pressure, the parents' smoking status, curiosity, and masculinity.

**Conclusion:** The results indicated that adolescents consider smoking as a social habit but with contradictive feelings. From an Islamic perspective, smoking is not forbidden by the religion's beliefs. The smoking habit was also stimulated by peer pressure, imitating parents who smoke, curiosity, and feeling masculine. We suggest that health professionals who are interested in developing smoking prevention programs should consider the adolescent perspective on smoking so that the prevention program will be more effective and appropriate for adolescents.

## Background

Smoking causes social, economic and health problems [1,2, 3]. Various studies have shown that smoking is a risk factor for cardiovascular diseases, stroke, and various types of cancer [4, 5] and affects both active and passive smokers. However, the percentage of smokers is still high, especially in Indonesia, which has the third highest prevalence among the nine countries in north and Southeast Asia [6], and the prevalence has not declined significantly between 2007 and 2014 [7]. Among the 30 countries with a high Muslim population, Indonesia is ranked the second largest for prevalence of smokers [8]. In addition, previous study in Indonesia showed that smoking is more prevalent among men than women [6],

Smoking is also high among Indonesian adolescents; national surveys in 2006 showed that of 3737 students, aged 13 to 15 years, 37.7% were smokers, 13.5% were currently on tobacco, 11.8% smoked cigarettes, and 3.8% used other substances. Furthermore, 95.1% of adolescents who stated that they had never tried any substance wanted to do so within the next 12 months [9]. In 2014, the Global Youth Tobacco Survey (GYTS) in Indonesia showed that 20.3% of 13- to 15-year-old students were using any

tobacco products, 19.4% were smoking tobacco, 18.3% were smoking cigarettes, and 2.1% were using smokeless tobacco [10].

This shows a tendency for increasing numbers of smokers. Hence, an effective prevention effort must be prioritized because it has been shown that adolescents who tried this habit at the age of 10-14 years were predicted to continue for the next 2 years, and smoking behavior during adolescence is a predictor of smoking status in the future [11]. These statistics require serious attention because adolescents play an important role as a human resource of the future.

Many factors contribute to smoking among adolescents. Newly enrolled high school students aged 12-13 years are at high risk of smoking; they start to believe that smoking could reduce their apprehension about the regulations and social interactions in the school [12]. Previous studies have indicated that the highest rates of smoking among adolescents occurred during the transition to high school due to psychologic distress [13]. The students believe that smoking helps them to adapt to the physical, cognitive, and emotional changes that are taking place, although various studies have proved that smoking reduces self-esteem and self-image among those with severe addiction [14]. A previous study also showed that smoking addiction is associated with depression; but adolescents perceived that smoking could eliminate their negative feelings, and this perception was one of the risk factors for failure in a cessation program [15]. A previous report also found that teenagers are vulnerable to negative social influences from commercial groups that promote cigarettes, and therefore building their self-confidence is crucial to reduce vulnerability [4].

Another smoking vulnerability for adolescents comes from their siblings and friends [16]. In some communities, the smoker usually has emotional and communication connections with their groups and becomes a socio-cultural identity; the smoking habit is accepted as a normative practice. Similar perceptions and behaviors will be adopted by the youth who are part of this community and interact with those groups [17]. An earlier report also found that youth smokers were usually in low socio-economic circles, from broken families with addicted parents [5] and household conflict [18].

In addition to these factors, religion also influences smoking habits. In the United States, increased doctrinism was associated with reduced risks [19]. In a Turkish study, fewer religious employees smoked compared with general staff [20]. A study conducted in China also reported that pious Muslim men were mostly non-smokers [21]. Therefore, religious approaches can be effective in programs for cigarette and drug addicts, and Islamic teachings have been reported to be effective in preventing children from starting this behavior [22]. However, this view is probably different in Indonesia, which consists of two major groups of Islamic scholars: Nahdatul Ulama (NU) and Muhammadiyah. The sources and references of these groups have similarities, but they maintain different ideologies and understandings about Islamic thoughts on smoking. Muhammadiyah issued a fatwa (Islamic scholars' decision) that smoking is forbidden or haram, and NU tends to reject this fatwa [23]. This leads to different perceptions among the Islamic community, including the adolescents.

Aceh Province Indonesia, the only province that has implemented Islamic laws since 2000, has both NU and Muhammadiyah followers. Although the NU religious model predominates, neither model is followed consistently with regard to smoking. Therefore, it is still interesting to study the smoking habits in this community. Regarding the Islamic view on smoking, Aceh Islamic Scholars (Majelis Permusyawaratan Ulama) support smoking prevention by publishing a fatwa forbidding smoking (registration number 18 in 2014).

This qualitative research provides a specific description of the phenomenon of smoking among Indonesian Muslim adolescents, which focuses on adolescents' perspective as a whole, including the Islamic viewpoint and other related factors. The research findings will be a crucial reference for the development of effective smoking prevention intervention programs.

## **Methods**

### **Study design and participants**

This is a phenomenological study, which used focus group discussions (FGDs) to explore the perspectives of Muslim adolescents on smoking, relevant to the qualitative concept [24]. Students from three junior high schools representing three sub-districts in Aceh Besar were chosen as the participants to represent a moderate life condition (between city and village life). These schools are suburban, with good public transportation and located less than 20 km from the capital of Aceh Province. Based on the district statistics in 2017, the total population in the district was 409,109 inhabitants (around 2000 people/km<sup>2</sup>), with an average household size of 4, a poverty level of 15.41%, labor force participation rate of 59.17%, and open unemployment rate of 8.49%; service, trading, and agriculture are the main sources of income [25]. The three schools were chosen based on the following inclusion criteria: located in Aceh Besar district, with the same accreditation level (B), and in a community with moderate life conditions.

Participants were chosen by purposeful selection according to the following inclusion criteria: male students, aged 12 to 18 years, living with parents, and able to communicate in the Indonesian language. The exclusion criteria were students less than 12 years old or more than 18 years old and unable to communicate well in the Indonesian language. The researchers asked permission from the school management before approaching the students. Then, the students were informed about the aim of the study and the study procedure. The researcher approached the participants and their parents by phone before collecting data. The written consent form was sent to parents via the school management except for the 18-year-old participant; he signed the form himself. Twenty-four participants, eight students from each school, were eligible to take part in the research. All communications with the students and their parents were conducted via their school management.

### **Data collection and procedure**

Data collection was conducted in January 2019 in the three junior high schools. FGDs were conducted in these three locations (FGD A, B, and C) and each FGD involved eight students. Each FGD was conducted

in the school and lasted for 60-90 minutes. Three cycles of FGD is considered adequate to obtain data saturation. The justification for this was also based on previous research in which FGDs were used as the data collection method. The interviews were run by the principal researcher, a senior lecturer from the Faculty of Nursing, Universitas Syiah Kuala. She has good knowledge about qualitative studies and is also experienced in running FGDs in the community. The discussion protocol was developed by the researchers, based on the reviewed literature, and was discussed in a group meeting with several experts in qualitative research before the FGDs. The FGD process was guided by the researchers with an expert-validated protocol. The interviews were audio-recorded and the transcribed verbatim by two research assistants with a master's degree and good knowledge about FGDs and qualitative studies. The FGDs were formulated to obtain detailed information about adolescents' perceptions, opinions, and feelings about smoking. The FGD began by asking questions about perceptions on smoking: "What do you think about smoking?" Followed by "Why do adolescents smoke a cigarette?" and they were further asked to describe the factors that predisposed the behavior. The moderator (principal researcher) delivered the questions to all participants. Then, each student was given enough time to explore their opinions and perceptions.

### **Data analysis**

The data were analyzed manually using inductive content analysis, with the steps carried out systematically, based on the stages of qualitative data analysis and the various parties involved [24]. The information from all FGDs was combined and considered as the unit of analysis and transcribed verbatim. The transcripts were read repeatedly by three experts in qualitative research and the researchers to obtain an overall understanding. Then, the data were broken into units of meaning and labeled with codes. The codes were compared sequentially based on similarities and differences and further formulated into sub-themes and themes, before being translated into English. Back translation was done, and two language experts assisted the researchers to ensure the best semantic equivalent and accuracy between Bahasa Indonesia and English.

### **Ethical considerations**

This study obtained ethical approval from the Research Ethics Committee of the Faculty of Nursing, Universitas Syiah Kuala, Banda Aceh, Indonesia. Participants had the right to refuse to be involved, they knew the research objective and their personal identity was guaranteed confidentiality. Written consent to participate in this study was obtained from participants' parents, except one participant who was 18 years old gave his consent. In Indonesia, 18 year olds can make decisions about her/himself and can have an identity card.

The researchers attempted to build relationships with the participants before the FGDs to establish trust. Direct communication with all participants and their parents was conducted by phone and at an informal meeting. The study objective was explained, all information about the study was given, and the students were assured that their personal identity was confidential from the public, other students, and teachers. The teachers were excluded from the FGD, and the participants had the opportunity to explore their

perceptions freely. Before the FGD, we informed all participants that they had equal opportunity to express their opinions. We also emphasized that every comment was useful and appreciated in developing a smoking prevention program.

## Results

### Characteristics of the participants

Most of the participants in this study were 13 years old; the minimum age was 12 years and the maximum age was 18 years. Most of the participants and their parents were smokers (Table 1).

**Table 1** Characteristics of the participants

Participant	Age (years)	Smoking status	Parents' smoking status
FGD A			
P1	16	Smoker	Smoker
P2	13	Smoker	Smoker
P3	14	Smoker	Smoker
p4	15	Smoker	Smoker
P5	12	Smoker	Smoker
P6	15	Smoker	Smoker
P7	13	Smoker	Smoker
P8	12	Non-smoker	Smoker
FGD B			
P9	14	Non-smoker	Smoker
P10	14	Smoker	Smoker
P11	13	Smoker	Non-smoker
P12	14	Non-smoker	Smoker
P13	18	Smoker	Non-smoker
P14	12	Non-smoker	Smoker
P15	14	Smoker	Non-smoker
P16	13	Non-smoker	Smoker
FGD C			
P17	13	Smoker	Smoker
P18	13	Smoker	Smoker
P19	14	Smoker	Smoker
P20	13	Smoker	Smoker
P21	13	Smoker	Smoker
P22	12	Smoker	Non-smoker
P23	16	Smoker	Smoker
P24	14	Smoker	Smoker

This study explored the perspectives of Muslim adolescent's on smoking habits. Based on the results of the study, the adolescents' perspectives were grouped into two themes: perception about smoking and factors related to smoking. Perception about smoking was further divided into three sub-categories: smoking is a social habit, contradictive feelings, and Islamic perspective on smoking. The second theme was based on factors related to smoking and was divided into four sub-themes: peer pressure, parents' smoking status, curiosity, and masculinity.

## Perception of smoking

The perception of smoking was the main theme when participants discussed smoking behavior. This theme was divided into three sub-themes: smoking is a social habit, contradictory feelings, and Islamic perspective.

### Smoking is a social habit

Smoking is perceived as a social habit in the Acehese community, as seen from the following statement:

I think smoking is conventional. [FGD A, P1]

Other participants also confirmed that smoking is a social habit and usual behavior in the community:

... it is normal to see someone smoking cigarettes in the community. [FGD A, P2, P5, P7]

Therefore, the results illustrate that participants perceive smoking behavior as a societal practice. Hence, it was not considered a violation of any the rules and customs in the local community.

### Contradictory feelings about smoking

Contradictory feelings are a discrepancy between behavior and perception. Therefore, the desire to stay away from cigarettes is evident from one participant's statement. They did know about the negative effects of smoking but they were unable to say no to a cigarette from a friend. The phenomenon is known as a contradictory feeling among adolescents, where in the one hand, they want to reject cigarettes, but on the other hand, they face a situation that makes them unable to do. This was interpreted from the participant's statement:

I know smoking is not good and it causes cancer, but I smoked a cigarette because I could not stand (unable reject) to see my friend smoking beside me. I desired to smoke when I hang out with my smoking friends, we enjoy smoking together. [FGD A, P1; FGD B, P13]

Smoking can causes cancer...but I smoked for the first time in my life out of curiosity about the taste of cigarettes. Now, I am addicted, I smoke every day and I enjoy smoking. [FGD B, P10]

### Islamic perspective on smoking

Based on our findings, the Islamic perspective consists of three sub-themes: forbidden (*haram*), acceptable (*halal*), and acceptable but better to avoid (*makruh*). The forbidden theme was reinforced by the following statement:

...based on my knowledge about Islam, smoking is not good because it is haram. [FGD B, P9]

This perspective is further reinforced by other respondents:

In Islamic law, someone who commits suicide is definitely going to hell and smoking also means that you damage your body and it is like you are committing suicide. [FGD B, P9]

It implies that the habit slowly damages one's health; it is just like a suicidal behavior. According to Islam, suicide is strictly forbidden or haram; smoking is likewise suicide because it subsequently causes death. Pertaining to the illegitimacy of smoking, other participants' statements strengthened this:

In the view of Islam, smoking is not good because it damages our health; smoking also cause cancer. [FGD B P13, P16; FGD C, P22]

Other group opinions stated that smoking is perceived as makruh, indicating that it is acceptable but it should be stopped. This type of perspective serves as a reference for adolescents to make a choice to initiate or stop the habit, as shown by the following statements:

Smoking is makruh for Muslims because it is not prohibited in Islam, but it will be better if someone does not smoke. [FGD A, P8; FGD B, P11, P12]

As a Muslim, we can be a smoker or non-smoker, because smoking is makruh for us. [FGD A, P1, P2, P3, P4, P5, P6]

This research finding also indicated that Acehnese adolescents who portrayed this behavior were associating with the character of religious scholars as the role models for the community. This was confirmed by the following statement:

Muslims smoke because they see numerous religious scholars also smoke...[FGD C, P17, P18, P19]

This implies that the role of faith in providing exemplary behavior for an adolescent is significant because of the high tendency to imitate.

Besides haram and makruh, the Islamic perspective on smoking was interpreted based on the effects and benefits of smoking as analyzed from the following statement:

I know about Islamic smoking law;; it depends, smoking is acceptable, but if it causes dizziness, then it is forbidden and considered as a sin. [ FGD B, P15; FGD C, P24]

This student was skeptical about the impact of smoking on health because teenagers tend to observe the short-term influence, immediately after smoking a cigarette.

This sub-theme indicates that some youths do not just follow the arguments put forward by their peers, they also elaborate on different opinions. The participants had less understanding about the Islamic perspective, and it seems that most would agree that the Islamic perspective on forbidding smoking depends on the immediate impact of smoking as analyzed from the following statement:

Smoking can be haram for Muslims, it can become makruh because ... if we fall sick. Hence, the law is haram, but if nothing happens to the body, then makruh law is adopted. [FGD A, P2; FGD B, P15]

It can be inferred that the adolescents do not possess adequate knowledge on the effects of smoking on health. Participants would only be concerned about the short-term effects of smoking, such as dizziness and the feeling of discomfort when smoking cigarettes.

### **Smoking-related factors**

This study indicated that factors related to smoking for adolescents included peer pressure, parents' smoking status, curiosity, and masculinity.

#### **Smoking because of peer pressure**

Peer pressure is defined as a condition whereby friends persuade or influence an adolescent into partaking in a habit. However, due to the strong ties and the tendency to behave in a similar manner as their acquaintances, adolescents obtain recognition and are thus considered a part of the group. This sub-theme was reinforced by the perception that avoiding smoking makes them a ridicule to their peers as illustrated by the following statement:

If I don't smoke, I feel ridiculed by friends in my peer group. [FGD C, P21]

Then, another participant stated:

The first time, I smoked because at that time I sat with my friends, and all of them were smoking cigarettes; so I did too. [FGD B, P13]

These results further indicate that teenagers adopt this behavior because of peer and group pressure in order to survive in their units.

#### **Smoking because of parents' smoking status**

Teenagers who have parents who smoke believe that smoking is acceptable because their parents are their role model when making choices. The parents also might not encourage their children not to smoke because they have their own perceptions of the smoking habit. However, Acehnese teenagers tend to adopt the behaviors conducted by their guardians, as analyzed from the following statement:

I smoke because my father smokes in front of me. Every day I see my father smoke at home, I think smoking is enjoyable and acceptable. [FGD B, P10]

Another participant also stated

If parents smoke cigarettes in front of their children, it seems like smoking is acceptable and not forbidden at all; so the children will also smoke. [FGD A, P7]

## **Smoking is a symbol of masculinity**

Masculinity is a feeling of being recognized as a real man, and likely applies in many countries; adolescents in Aceh comprehend the term as an important issue. This study identified that smoking was affiliated with masculinity, and teenagers perceived that a smoker showed the expected features. This is inferred from the following statement:

If you don't smoke, you do not look like a real man, and you are not mature. Hence, you are ridiculed by friends to be weak man. [FGD C, P21, P22]

This perception predisposes the adolescent to greater risks, and they maintain their smoking habit to portray themselves as strong men. The stigma of being a weak man for a non-smoker is confirmed from the following statement:

When I did not smoke, one of my friends asked me, why don't you smoke, you look very weak?...Smoking help us to be a strong man. [FGD C, P22]

Therefore, smoking was perceived to be a way for the adolescent to be recognized by their peers as having masculine characteristics.

## **Smoking out of curiosity**

Adolescence is a transition period, characterized by strong curiosity about everything, including trying cigarettes, as found in the teenagers in Aceh. The phenomenon was confirmed from the following statement:

The first time I smoked was because I was curious about the taste of the cigarette. I tried it, which got me addicted. [FGD B, P10]

Then, this sub-theme was strengthened by another participant:

I smoked a cigarette because of its good smell, which stimulated me to take it. [FGD A, P3, P7]

This result reflects a connection between curiosity and the smoking habit among adolescents in Indonesia.

## **Discussion**

In this qualitative research, teenagers expressed their perceptions of smoking, based on social contexts and Islamic perspectives. The results are important for educators and health practitioners, especially those involved in smoking prevention efforts and health promotion, to assist in the development of effective intervention programs appropriate for participants' religion. The following discussion is presented according to the sub-themes.

The outcomes of this research indicate that smoking is perceived as a social habit that exists in the local community. Adolescents consider it to be acceptable and not contrary to the norms of society. These results verify previous studies, carried out in Mexico, where smoking was generally described as socially acceptable for men but not for women [5]. Such perceptions also promote smoking among teenagers. This finding is consistent with previous studies. When smoking has been accepted in social networks, especially among family members and friends, and is strongly associated with cessation and relapse, prevention is likely ineffective [26].

Muslim teenagers in Indonesia apparently have a similar perception about smoking as adolescents in other countries. They tend to smoke because it is considered an acceptable habit in their social environment. This is in line with previous research showing that teenagers were sensitive to friends who smoked, and also within a wider network of friends [27]. Furthermore, other investigations reported that young adults have a special relationship with smoking. It is capable of perpetuating social inequality, based on their socio-economic status in the environment, which is worrisome, during this early stage of life because of the bad impact through the life journey [28].

The results also showed that teenagers experience contradictive feelings in relation to smoking, which are linked to the information they have about its consequences. However, warning labels that are contrary to expectations of positive effects of smoking can reduce the expectation that the explicit outcome is slightly positive, subsequently reducing the behavior in the short term. Hence, it is important to disseminate information to the public about the effects of smoking on health [29]; although teenagers are a vulnerable age group, easily influenced by various positive and negative issues, some partake in this habit because there is no direct immediate impact on health [29]. Furthermore, warnings about the dangers attributed to smoking cause contradictive feelings, as they incite fear. Therefore, contradictory warning labels are more meaningful if targeted at current smokers and can also prevent youth from starting the behavior [29]. However, this is an important issue to consider when initiating a program. A previous study illustrated the importance of negative affect indirectly motivating the desire to stop smoking, hence, serving as a source of information to influence adult smokers and non-smoking adolescents to accept the health risks [30].

Contradictive feelings also arise because of the inability of adolescents to control behavior according to their desire. Smoking is a voluntary response to unintentional desires, which in some cases, involves neglecting the use of voluntary efforts to resist impulsive actions. However, the case of adolescents tends to resemble other human behaviors [31]. The results of this study indicate the experience of contradictive feelings related to smoking; even though the decision has been made, they remain sensitive. This theme also relates to differences in views about the laws governing the behavior among scholars.

Related to the Islamic perspective, there are two groups of Islamic scholar in Indonesia, NU and Muhammadiyah, which have different opinions on the law about smoking, Muhammadiyah scholars issue fatwa that forbids smoking, whereas NU tends to not support this standpoint [23]. However, teenagers who do not smoke cigarettes say that religion is the reason they do not participate.

Furthermore, this agrees with previous research in Jordan, which showed a close relationship between religious obedience and smoking, indicating the importance of culturally appropriate programs to help health workers [32]. Moreover, one of the most significant factors associated with the habit is a decrease in religiosity [33], because Muslim smokers in Malaysia refer to their religion as a guide to stop it or not [34]. The Quran and the hadith are the primary references for the law and living principles for the faithful [35], although the law on smoking is not directly stated in either. Hence, it is still debated in Indonesia, especially in Aceh; therefore, scholars have issued fatwa about the topic by also considering the contents of these sources. For a Muslim, a fatwa includes religious rules that are not specified in the Quran and Hadits but are considered by Islamic scholars.

The results of this study on teenagers in Aceh showed that some perceive this habit according to Islam as haram, because it is seen as unhealthy due to its adverse effects and can eventually lead to death. Therefore, Islam forbids any behavior that has a negative effect on the human body as stated by the implicit law on smoking, supported by Quran Al-Baqarah: 195, which means "And do not drop yourself into destruction". Furthermore, it is also illegal because it is identified with a slow suicide, which is supported by the Quran, stating "And do not kill yourself; indeed, Allah is the Most Merciful to you." (Quran An Nisaa: 29). However, prohibition is also about the danger imposed on others, reinforced by the words of the Prophet Muhammad: "It should not start giving bad effects to other people, as well as repaying it." Moreover, this embargo was also in accordance with the fatwa of the Aceh Islamic Scholar (14, in 2014), according to the Islamic view that stressed its prohibition by medical experts. A person who allows children to participate in this habit is a sinner. Hence, it is concluded that cigarettes must be avoided by Muslims.

In addition, the Muslim perspective is emphasized by prominent scholars that urge abstinence and announce fatwas against tobacco on the grounds of their potential to cause poor health and further offend the commands of the Quran, therefore ensuring personal health and that of others [36]. However, some teenagers in this study viewed smoking as makruh, which means it is allowed, although it is better to not smoke. Furthermore, this result agrees with a previous study, which stated its permissibility, whereby Muslim smokers perceive the behavior as acceptable in Islam – hence, Makruh – although, if it is too much, it could be haram [37]. This awareness fuels the desire to smoke and the desire to continue to do so among teenagers, eventually creating dependence.

Adolescents tend to observe the short-term impact of smoking and therefore adopt the behavior because there is no immediate effect on health, indicating the inadequacy of the information available to them about the dangers. Furthermore, this study is in line with previous studies, which reported that a number of secondary school students in urban areas lack specific knowledge about smoking-related diseases [37], and also other studies that showed the main motivation is to be social. The dangers of tobacco are seen to be low, and an independent risk factor is a perception that friends and other students take substances and drink alcohol [38]. Based on the results, Muslim adolescents who consider this habit as makruh and not forbidden are more at risk of participating. Hence, preventive efforts are urgently needed to preventing inception, which promotes dependence.

This investigation is also in agreement with previous studies on the factors related to smoking, where the influence of friends was observed as an important factor. The main related factors include having friends who are addicted, being offered cigarettes, and ease of access [39]. However, relatives and accomplices who smoke played an important role in influencing these practices [16], consistent with a study that reported a significant association between the status of family and friends and adolescent behavior [40]. Therefore, teenagers in Aceh and the world at large are highly influenced by their associates, and hence, they tend to adopt common behaviors [41]. This is in agreement with other research that reported that habit is driven by peer pressure and fashion [42]. Thus, having friends who promote and facilitate smoking behaviors is a significant influencing factor for smoking among adolescents.

Moreover, this study found that peer modelling is also a significant issue related to smoking among adolescents. This is in line with a previous study, which stated that adolescents feel more comfortable sharing similarity with their friends, including smoking behavior; those who have such friends tend to behave likewise [43]. This agrees with previous studies, where the importance of peer pressure on this habit among students was shown [44]. Furthermore, this investigation indicated that this factor remains a focus in prevention intervention programs, involving practices to increase self-efficacy in an attempt to anticipate peer pressure and prevent the habit becoming a culture. Predictors include regular physical activity and low rejection of self-efficacy among men [45].

Parenting seems to be an important stimulus for adolescents in the period of conduct development [43]. As seen generally, Muslim teenagers in Indonesia are strongly influenced by guardians, because they serve as role models as shown in the analysis carried out in Aceh. This agrees with previous studies, where families play a strong role and therefore affect adolescent smoking behavior [46]. However, other papers have reported the close relationship between tobacco use and exposure to second-hand smoke and low socio-economic status in non-intact households where parents also smoke [5]. The continuity of this practice by guardians enhances dependence in the teenager, which is consistent with studies that show a strong positive relationship between parents and the behavior of adolescents, most significantly the father [47], because this is a strong risk factor for habit initiation between the ages of 12 and 17 years [48].

This research further illustrates the importance of exemplary behaviors in adolescents as role models in a community (at home with parents and siblings), at school and university (teacher/lecturer), and at work (director/head) [44]. Family attitude and behavior is important in influencing smoking because an adolescent tends to immitate the behavior of their family members. Therefore, the presence of family members who are addicts also reduces the desire to quit smoking [49]. Similar to family, within the school environment, the behavior of role models also plays an important part [50]. Therefore, it is important to pay more attention to environmental factor when creating smoking prevention programs. This is in line with a previous study, which found that smoking behavior is significantly associated with an anti-smoking environment [51]. Based on this discussion, the importance of character is known, although past research has differed on the influence of parents with a history of smoking and those currently addicted.

Hence, an adolescent who has parents with a history of smoking in the past are at lower risk than children with current habitual guardians [52].

Based on the result of this study, masculinity is a significant issue related to smoking. Adolescents were determined to smoke because it made them appear strong and mature, in agreement with earlier research, which associated initiation with the desire to be a real man. Having a positive subjective health status, promoting self-perception of being thin or of average body weight, portrays average happiness; stress, consuming alcohol, suicidal ideation, having sexual relations are associated with low or average academic achievement, as well as having parents with a middle school education or less, skipping travel trips with family within the previous 12 months, and having relations who allow smoking at home [53]. However, the results do not support previous studies in Canada, which perceived smoking as unhealthy and uncool [17]. Misunderstandings about the topic still occur in Aceh, due to the perception that it indicates a person's maturity. This illustrates the problem of the self-concept experienced by teenage smokers as being against the goals of increasing self-confidence, in agreement with previous studies that showed men with lower self-esteem exhibited more positive beliefs and behaviors than women [54]. However, others found that of the 13 risk factors investigated, eight (including smoking status of parents and friends, the absence of a ban at home, exposure to cigarettes in cars, vulnerability, increased symptoms of depression, and self-esteem) were statistically significant in relation to the initiation of the habit in teenagers, after adjusting for age and the education level of the parents [54]. Previous research also found that another influence was the stigma of not smoking (and reducing smoking) as well as guilt, loss of self-esteem, self-defense, and determination to continue [55].

Based on the theory of development, adolescence is characterized by an increase in curiosity about various objects, because it is a stage of cognitive development, enhancing the need to explore new activities, including smoking. Furthermore, curiosity is identified as a person's internal motivational system, activated by specific stimuli or activities, which involve uncertainty and novelty and further motivate exploratory behavior [56]. This study showed inquisitiveness to be a major factor contributing to the risk of smoking among adolescents in Aceh, supporting previous studies that reported a close relationship between seeking a sensation and cigarette use. Conversely, the search for an increased thrill was significantly associated with e-cigarette experience among Texas teens [57], driven by curiosity, peer pressure, and fashion [42].

Being inquisitive is also attributed to other factors; pro-smoking attitudes and perceived social norms support smoking and low self-efficacy is against this habit in a cross-sectional manner [55]. The consequences of interest tend to expose adolescents to the behavior, which is difficult to terminate [42]. Hence, the issue of curiosity is essential when developing prevention programs for adolescents. Furthermore, rejection of self-worth is an important predictor of smoking incidence, which does not depend on specific communication about the topic among parents, siblings, and friends [58]. However, this result complements various previous findings, which serve as a guideline for the development of effective smoking prevention interventions. This study may have a limitation. It is possible that opinions from smokers dominated the discussions because most of the participants were smokers.

## Conclusion

The results of this study illustrated that adolescents consider smoking as a social habit, a contradictive feeling, and from the Islamic perspective, it is deliberated by most teenagers to be makruh. The initiators were peer pressure, parents' smoking status, curiosity, and masculinity. We recommend that health professionals who are interested in developing smoking prevention programs should consider religious factors as a significant issue that could increase the effectiveness of the program.

## Declarations

### Ethics approval and consent to participate

This study obtained ethical approval from the Research Ethics Committee of the Faculty of Nursing, Universitas Syiah Kuala, Banda Aceh, Indonesia. Participants had the right to refuse to be involved. They were given detailed information about the research and confidentiality was guaranteed. Written consent to participate in this study was obtained from participants' parents.

### Consent for publication

All data about the respondents in this article were approved by the participants for publication.

### Availability of data and material

The datasets used in the current study are available from the corresponding author on reasonable request.

### Competing interest

There was no conflict of interest among the authors.

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Some of the funds for collecting the research data were provided by Universitas Syiah Kuala. Funding for preparing the proposal, the analysis, interpretation of the data, and writing the manuscript was provided by the researcher.

### Authors' contributions

FF was involved in all aspects of the research, including research design, data collection, and analysis. MA and SRJ were involved in research design, interpretation of the data, and editorial review and revision. TT participated in research planning, data analysis and interpretation, and review of published articles. All authors agreed to the final article for publication.

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### **Authors' information**

1. Graduate School of Mathematics and Applied Sciences, Universitas Syiah Kuala, Banda Aceh 23111, Indonesia.
2. Department of Family Health Nursing, Faculty of Nursing, Universitas Syiah Kuala, Banda Aceh, Indonesia.
3. Department of Psychiatry and Mental Health Nursing, Faculty of Nursing, Universitas Syiah Kuala, Banda Aceh, Indonesia.
4. Department of Community Health Nursing, Faculty of Nursing, Universitas Syiah Kuala, Banda Aceh, Indonesia.

**Correspondence** : fithria@unsyiah.ac.id

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