
DIFFERENCES IN STRESS, SELF-ESTEEM BETWEEN SMOKING AND NON-SMOKING ACEHNESE ADOLESCENTS

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ABSTRACT

There is an increasing number of young smokers in Indonesia that has become a serious concern in recent years. Therefore, this study aimed to examine Indonesian adolescents' smoking based on related variables i.e. stress and self-esteem. Purposive random sampling was used in this study with a set inclusion criteria including male at age of 15 to 18 years old. A total of 106 students (54 smokers and 52 non smokers) from four senior high schools in Banda Aceh, Indonesian participated. The measures used were the Perceived Stress Scale (PSS), and Rosenberg Self-Esteem Scale (RSES). The result of this study founded that there were differences in stress and self-esteem level as well as certain parenting practices between smoking and non-smoking adolescents.

Keywords: stress, self esteem, smoking adolescent

Introduction

In everyday life, the sight people smoking everywhere is uncommon including within the home, community, and public places such as offices, market and even public transportation. The majority of smokers is aware of the consequences of smoking, even second-hand smoke can also be harmful to non-smoking people who are sitting next to the smokers. World Health Organization states that smoking has serious negative effects on health that has been recognized as one main cause of lung cancer, coronary heart disease, impotence and carries a high risk to pregnant mothers and the fetus (WHO, 2002). Some of the long-term consequences of smoking include impairments of general cognitive function, cognitive flexibility, psychomotor speed, working memory, verbal memory, and visual search (Glass, Buu, Adams, Nigg, Puttler, Jester, & Zucker, 2008). It is estimated that more than 430,000 tobaccousers are killed at younger ages every year. Smoking in some way is responsible for one out of every six deaths in the U.S., killing more than 1,100 people everyday. Cigarettes as the cause of premature death can be prevented in many countries in the world (Davison, Neale, & Kring, 2006).

According to WHO (2011) report on global tobacco use, the prevalence of smoking in Indonesia is among the highest in the world, they also reported that males smokers (46.8 %) are higher than females smokers (3.1 %). From a total of 62.8 million smokers, 40 % of these smokers being from lower socio economic status. Although, smoking is a major public health problem in Indonesia, responsible for over 200,000 deaths annually (Barber Adioetomo, Ahsan, & Setyonaluri, 2008). In the Asia Pacific region, Indonesia is the only country that has not signed or ratified the WHO's Framework Convention on Tobacco Control.

Age at initiation of the first smoke in Indonesia is relatively young. Global Youth Tobacco Survey's 2006 found that among students aged 13-15, 24% of boys and 4% of girls smoke. About 1 out of 3 boys and 1 in 4 women have tried smoking for the first time before 10 years old (WHO, 2009). In Indonesia, access and availability of cigarettes easier than other countries, it is evident that 6 out of 10 young smokers aged 13-15 years who profess that they buy cigarettes in stores. Over time the trend shows that the age of smoking initiation has dropped in at a younger age. The average age at initiation of smoking among smokers 15 years old and over dropped from 18.8 in 1995 to 18.3 in 2001 (Ministry of Health, 2004).

Adolescence is an important developmental milestone, which is a transitional period of childhood into young adulthood. Adolescents experience the rapid growth and development in the physical, emotional, cognitive and social domains. This period is a critical period for adolescents who are developing their sense of identity and individuality to be accepted and recognized as a growing adult. Santrock (2003) described that adolescents' success fultransition into adulthood is influenced both by the individual factors (biological, cognitive, and psychological factors) and environmental factors (family, peers, and society).

Adolescence is a period of instability and uncertainty. At this time the adolescents are not yet adults, but they are also no longer children (Monks, Knoers, & Haditono, 2000). In these uncertain times, adolescents are at greater risk to face problems while still developing their maturity (Graber & Brooks, 1999). According to Hall (1916), adolescence is often referred to as a period of storm and stress because during this period adolescents must adapt to the physical and psychological changes, the search for identity, and form new relationships with others (Santrock, 2003). Consequently, problematic behaviors such as smoking may come to the surface among many teenagers in the world.

Lloyd, Lucas, Holland, McGrellis, and Arnold (1998) states that tobacco can be used to facilitate the management and creation of self-image and may differ in variouscivilizations. Some smokers usually smoke in social situations or eliminate the stress (Miller & Cisin, 1979). People who smoke appear to be more tense, aggressive, more rebellious, more unsophisticated, and happy

go lucky in comparison non-smokers (Brooke, Whiteman, & Gordon, 1981), while Urberg and Robbins (1981) found that girls and boys have different impuls, girls engaged in a sign of rebellion and autonomy, whereas for boys smoking as a means of social coping.

One of the causes of teen smoking is to get a sense of relaxation and calm (Finkelstein, Kubzansky, & Goodman, 2006). High levels of stress could lead to an increased risk for smoking. The students who had never smoked showed the lowest levels of stress (Finkelstein et al., 2006). Smoking behavior in adolescents is related to stressful events in daily life. The teens who reported high stress level also reported high levels of smoking incident, the greater intention to smoke next year, and a stronger desire to smoke in the senior high school than those who reported low stress level (Booker, Gallaher, Unger, Ritt-Olson, & Johnson, 2004). The results study in Bangladesh by Uddin, Islam, and Asaduzzaman (2012) found that the respondents who smoke cigarettes presented lower level of self-esteem and emotional intelligence, yet higher level perceived stress than who do not smoke.

There are many underlying factors for smoking behavior in adolescents. In general, smoking behavior is a function of the environment and individuals. That is, smoking behavior is caused by not only factors from within the individuals themselves, but also environmental factors. For adolescents, one of the important concerns in this stage is how they are viewed by their peers. Peers have very important meaning for a teenager (De Guzman, 2007). The need to be accepted and the attempt to avoid peer rejection is a very important part of this stage. Some teens will do anything to be included in the peer group. There are some teenagers who feel satisfied with themselves and there are some teenagers who are less satisfied or dissatisfied with themselves (Brown, 1990). Differences in self-assessment will lead to high or low appreciation of self, or self-esteem based on individual characteristics (Appau, 2011).

Self-esteem is one of the main predictors of teen smoking in which self-esteem is negatively correlated with teenage smoking (Byrne & Mazanov, 2001). A study by Martin and Pear (2007) found that the emergence of smoking behavior can be influenced by environmental events. This includes the interaction between the individual with his or her peers in the environment. In a setting with many friends who smoke this also makes them more prone to smoking (Appau, 2011).

Smoking is a health concern because it can lead to various diseases and even death (WHO, 2002). Adolescent smokers in general tend to believe that smoking is common, which can increase virility and believe that smoking can boost their self-image although they know that it's easier to prevent than to quit smoking (Appau, 2011). This is because the content of cigarettes or the tobacco is addictive. Smoking behavior among adolescents is usually influenced by the transient positive feelings induced (Scales, Monahan, Rhodes, Ewoldosen, and Turbes, 2009). These good feelings

could augment or enhance the enjoyment and pleasant feelings. Smoking behavior may also be influenced by negative feelings. Many people smoke in order to reduce negative feelings, such as when feeling angry, anxious, or nervous (Finkelstein, Kubzansky, & Goodman, 2006). Cigarettes contain nicotine and other substances, this can result in dependence in smokers. Nicotine can cause addiction because of the pleasurable feelings produced. Tobacco is an addictive substance that causes addiction and dependence, similar to narcotics, alcohol and other addictive substances (WHO, 2009). For most teen smokers, smoking inspires confidence, calmness, and a sense of control (Scales, et al, 2009). Smoking is perceived as a symbol of friendship and intimacy (Brown, 1990). Smoking can make one feel more mature and can lead to the generativity of ideas or inspiration.

Weinrich, Hardin, Valois, Gleaton, Weinrich, and Garrison (1996) examined the relationship between adolescent smoking in under pressure, psychological stress and social support. The number of samples in the study they are $N = 1,168$, completed Derogatis Brief Symptom Inventory, Spielberger's Anger Expression Scale, and revised version of Coppel's Index of Social Support. Wenrich et al. (1996) found that white students were more involved in smoking because of difficulty compared to black students. White students have psychological pressure higher and lower values of social-support. Adolescent Smoking prevention and cessation programs should consider incorporating behavioral strategies aimed at overcoming the psychological pressure and the strengthening of social support as students can smoke in response to stress.

Finkelstein, Kubzansky and Goodman (2006) found that high stress and social status have a low risk of smoking on teenagers, but that stress does not explain the relationship between the lower social status and smoking. Their research involving 1021 black and white non-Hispanic teenagers participating in a longitudinal study of school-based. Questionnaire given to students and parents provides information on their highest level of education. A hierarchical logistic regression estimates the effects of parental education, subjective social status (SSS) and the stress on the risks of Smoking. On the basis of the family, students who have parents without education are at greater risk for smoking. High School SSS decreased risk of current cigarette smoking and stress increases smoking higher risk. There is no evidence that the effect of parent education is mediated through stress. At the one year follow-up, both lower and higher school of SSS baseline stress very meaningfully linked to smoking initiation in early models, but only basic stress predicting smoking initiation in multi variate models.

Scales, Monahan, Rhodes, Ewoldsen, and Turbes (2009) involve eight focus groups conducted with low-income South African-Americans and European-Americans, age 14-16 years in urban and rural locations. Scales et al (2009) was examined how teenagers understand the

relationship between cigarette smoking and stress and where they learn that smoking might be effective mechanisms under reduced pressure. Adolescents recommended is the main reason they of smoking as a coping mechanism (to calm nerves), social acceptance, and due to the influence of the environment. Family problems, problems of the boys or the girls friends and public schools that stress. Several participants reported that cigarette smoke can reduce stress, while the other believe smoke not really reduce stress. When asked for examples of smoking have they seen in popular media, teens most often produced an example of people who smoke to relieve stress. Ethnic and gender differences were found for the type of media in which they have seen their opinion of smoking, anti-smoking messages, and the media influence is felt.

Dodaj and Šimić (2012) investigated that stress life events associated with academic failure and social relationships is an important variable in understanding smoking. Psychological and physical symptoms are the most subjective often occur in smokers than non-smokers. Their study was conducted on a sample of comfort 200 students from the University of Mostar, with the average age of 21. The rate is determined using the scale events tress stress life, which assess social alienation, the pressure of time, academic failure, social conflicts and everyday academic mal adjustment. Psychosomatic symptom questionnaire explored by symptoms psychosomatic, which assess musculoskeletal, dermatological, gastrointestinal, cardiovascular, pseudo neurological, flu and cold symptoms. The students were divided into two groups, namely the Group of smokers and non-smokers. A group of non-smokers made up of 101 students who had never smoked, while a group of smokers made up of 99 students who smoke at least three cigarettes per day. Significant differences are the result of stress event directly between smokers and non-smokers who obtained for subscales of the social alienation, academic failure, and social conflicts that everyday. Different smokers from non-smokers at the rate of gastro intestinal symptoms, cardiovascular, Musculoskeletal and symptoms of flu and colds. Exposure to stressful life events and smoking is a significant predictor of psychosomatic symptoms.

Smokers also reported having low self esteem. They are more likely to have reported feeling unhappy and lonely, less confident, and taste that is not healthy. According to Samet and Yoon (2001) found that self-esteem, self-image and tobacco, coupled directly. Teenagers who smoke tend to have low self-esteem, lower expectations for the future and achieve. Smokers feel that smoking can overcome their feelings of stress, depression, and anxiety that comes from a lack of self-confidence.

Zolnowski (2012) examined the personality characteristics, self-esteem, self-efficacy, coping types of groups of non-smokers, ex-smokers, and current smokers. The sample consists of a student at Dublin School, Ireland. Participants in this study involve i.e. 125, 52 males and 73

females, aged between 19 to 61 years old. The study found that there are significant differences were observed between the three groups on self-esteem, self-efficacy and coping types. Data collected using paper, and the online version of the survey. Participants who complete survey paper consists of a full time student and part time. Participants who complete surveys online is known by researchers or known by other participants. The study population was divided into three groups: non-smokers, former smokers, and smokers. Smokers who are portrayed as individuals who have never smoked or smoked only occasionally. Former smokers were described as individuals who used to smoke on a regular basis. Smokers who are portrayed as individuals who smoke regularly, irrelevant of the number of cigarettes spent each day.

Shaniya and Sharma (2012) found that tobacco users has low self-esteem, low life satisfaction in comparison to non- users. It has implications in tobacco cessation program and community level tobacco prevention program for adolescents. The sample consisted of 76 tobacco users and 76 non- users in the age range of 16-19 years. Basic data sheet, Fagerstrom Test for Nicotine Dependence, Satisfaction with Life Scale and Rosenberg Self-Esteem Scale were used.

Contrast to the above study, study by Kavas (2009) revealed that self-esteem was negatively associated with alcohol and illicit drug use. However, these results did not suggest any significant relationship between self-esteem and smoking cigarettes. Comparisons between males and females did not indicate any gender differences on the self-esteem scale. The sample for this study consisted of 243 undergraduate students from different departments of Middle East Technical University, a large urban state university. Of the respondents, 119 (49%) were female and 124 (51%) were male.

Research Method

The approach used in this study is a quantitative method. A quantitative approach has many advantages such as to obtain quantifiable data, examining the cause and effect of relationship, and analysis of the numerical data to obtain a generalization of the population. The sample is defined as a group of subjects in a study the results of which may be generalizable to specific population (Azwar, 1999). Sample is the general use of subject that has the quantity and specific characteristics defined by the researchers, to be able to analyze and draw conclusions of the population studied (Shaughnessy, Zechmeister, & Zechmeister, 2009). The sample in this study comprised the students of four senior high schools in Banda Aceh, which meet the inclusion criteria, i.e. male and between 15 to 18 years old. They were categorized into two groups, i.e., 50 smoking students and 50 non-smoking students. The instruments used include the Perceived Stress Scale (PSS), and Rosenberg Self- Esteem Scale (RSES).

Perceived stress is measured through Perceived Stress Scale developed by Cohen, Kamarck and Memelstein (1983). This questionnaire consists of 10 items, with a 4 point Likert scale, ranging from never to very often. This measures the extent to which the situation or circumstances in life is judged as stress. Items that are designed to take advantage of how unpredictable things, uncontrolled, and overloaded the respondents find their lives. This scale also includes a number of direct questions about the level of experience in times of stress. Self-esteem is measured by the Rosenberg Self-Esteem Scale (Rosenberg, 1965). RSES is made up of 10 items that refer to self-respect and self-acceptance rated on a 4 point Likert type scale, The scale contains 5 positive and 5 negative items. A score of 0 is assigned to strongly disagree, 1 to disagree, 2 to agree, and 3 to strongly agree.

Result

The population of this study comprised of smoking and non-smoking adolescents in Banda Aceh based on the set inclusion criteria with the age range of 15-18 years old.

Table 1.

Demographic Data: Age and Smoking Status

	N	Percent (%)
<u>Age</u>		
15	12	11.3
16	35	33.0
17	52	49.1
18	7	6.6
<u>Smoking Status</u>		
Smoking	54	50.9
Non-smoking	52	49.1
Total	106	100.0

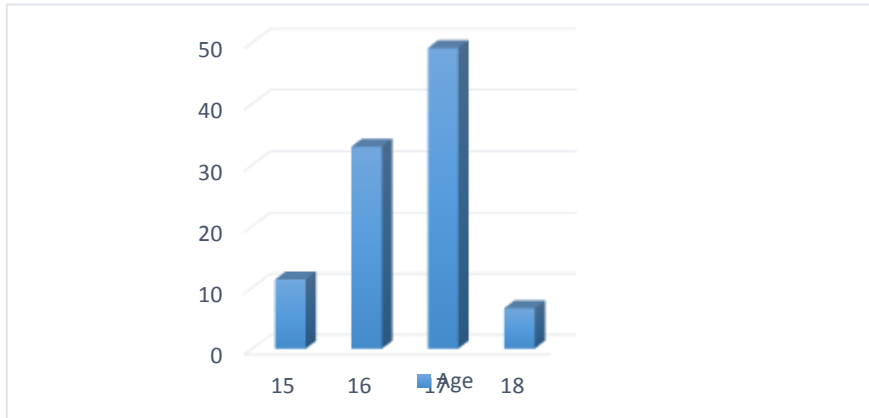


Figure 1. Age of Participants

Based on the breakdown of age of the participants as presented in Table 1 and Figure 1, it can be seen that 12 (11.3%) participants were 15 years old, 35 (33.0%) participants were 16 years old, 52 (49.1%) participants were 17 years old, and 7 (6.6%) participants were 18 years old. In terms of smoking status, 54 (50.9%) participants were smokers and 52 (49.1%) participants were non-smokers from a total of 106 participants.

Differences in Stress between Smoking and Non-Smoking Acehese Adolescents

Table 2.
 Mean and Standar Deviation Perceived Stress

	Smoking status	N	Mean	Std. Deviation	Std. Error Mean
Perceived stress average	Smoking	54	2.58	.21	.02
	non smoking	52	2.41	.38	.05

Table 3.
 Perceived Stress Level

		t-test for Equality of Means						
		t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
							Lower	Upper
Perceived stress average	Equal variances not assumed	2.76	78.62	.007	.16	.06	.04	.28

An independent-samples t-test was conducted to compare the perceived stress level for smoking and non-smoking adolescents. There was a significant difference in the stress level for smoking adolescents ($M = 2.59, SD = .21$) and non-smoking adolescents [$M = 2.42, SD = .39; t(79) = 2.76, p < .05$]. The magnitude of the mean difference was significant, though moderately small (eta squared = .068)



Figure 2. Perceived Stress Level

in Smoking and Non-smoking Adolescents

In Figure 2 above, it can be seen that smoking adolescents reported higher level of perceived stress compared to non-smoking adolescents.

Differences in Self-Esteem Between Smoking and Non-Smoking Acehnese Adolescents

Table 4.
 Mean and Standar Deviation Rosenberg Self Esteem

	Smokers Status	N	Mean	Std. Deviation	Std. Error Mean
Self esteem average	Smoking	54	3.45	.37	.05
	Non-smoking	52	3.14	.51	.07

Table 5.
 Rosenberg Self Esteem Level

t-test for Equality of Means							
Self	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
						Lower	Upper

esteem average	Equal variances not assumed	3.54	92.29	.001	.31	.087	.13	.48
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An independent-samples t-test was conducted to compare the self-esteem level for smoking and non-smoking adolescents. There was a significant difference in self-esteem for smoking adolescents ($M = 3.45, SD = .37$) and non-smoking adolescents [$M = 3.14, SD = .51; t(92) = 3.54, p < .05$]. The magnitude of the mean difference was significant, though moderately small (eta squared = .108).

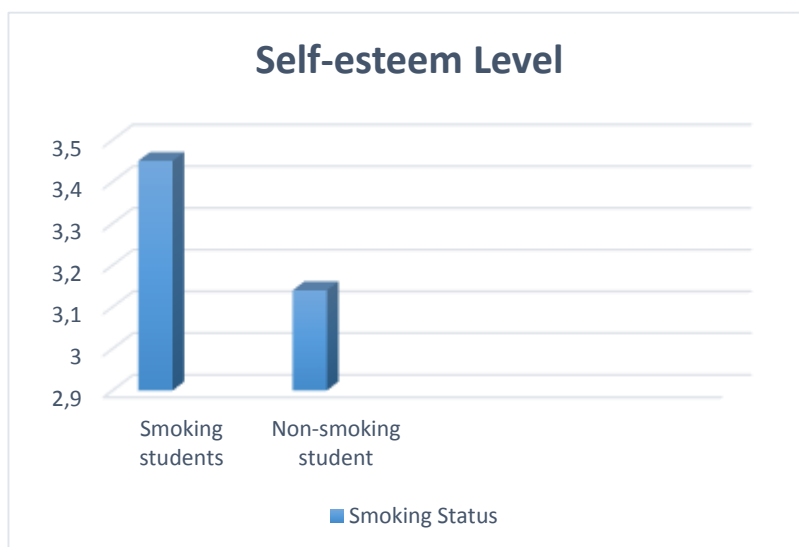


Figure 3. Self-Esteem Level in Smoking and Non-smoking Adolescents

In Figure 3 above, it can be seen that smoking adolescents reported higher level of self-esteem compared to non-smoking adolescents.

Discussion

In comparing the stress level using the Perceived Stress Scale (PSS), there was a significant difference in the stress level between smoking and non-smoking adolescents. Smoking adolescents reported higher level of stress compared to non-smoking adolescents. This result was supported by Booker, Gallaher, Unger, Ritt-Olson, and Johnson's study (2004) that found that smoking behavior in adolescents is related to stressful events in daily life. The teens who reported high stress level also reported high level of smoking incident, the greater intention to smoke next year, and a stronger desire to smoke in the senior high school than those who reported low stress level. In line with this finding, Finkelstein, Kubzansky, and Goodman's study (2006) showed that higher stress and lower social status increase risk of smoking. The present findings were also consistent with a past study by Booker (2006) that revealed that stress is associated with smoking behaviors in both

US and Chinese adolescents. Stressful life events also appear to have a greater impact on females than males in both the US and in China. Scales, Monaham, Rhodes, Ewoldsen, and Turbes (2009) found that stress is related to smoking, however there was controversy regarding the association between smoking and stress reduction. Their study examined how adolescents perceived the relationship between smoking and stress and if smoking cigarettes might be an effective stress reduction mechanism.

In comparing the self-esteem level using Rosenberg Self-Esteem Scale (RSES) in smoking and non-smoking adolescents, this study found a significant difference in the self-esteem level for smoking adolescents. Smoking students reported higher level of self-esteem compared to non-smoking students. This result was consistent with Kawabata, Cross, Nishioka, and Shimai's findings (1999) that self-esteem might be a factor associated with the inclination of smoking among early adolescents. Interestingly, those who had smoked before reported higher level of self-esteem compared to those who had never smoked. Other findings by Tucker, Edelen, Go, Pollard, Green, and Kennedy (2012) were also compatible, in that adolescents reported higher self-esteem when they were joined by their best friends in smoking. This shows that smoking as a proxy for adolescents to fit in with their peer group could play a role in their self-esteem.

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