

## Conference Paper

# Association Between Stress Level and Smoking Intention in Female Adolescents in Malang

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This study aims to examine the relationship between stress levels and smoking intentions in female adolescents in Malang. This research is based on the phenomenon of smoking behavior by adolescent girls, which is influenced by one of the developmental issues called the search for identity and the transition period from children to adults which can cause stress. This study uses a quantitative approach with a descriptive correlational method. The population of this study was female adolescents in Malang, aged between 12-18 years who smoked. The sampling technique used is accidental sampling. In this study, the hypothesis was tested using Pearson's Product Moment Correlation. Data were collected using a modified Adolescents Stress Scale (ASQ) (31 items,  $r = .884$ ) and Smoking Intention Scale (23 items,  $r = .849$ ). The results of this study indicate that there is a strong and directional relationship between the two variables with a correlation coefficient of .924.

**Keywords:** smoking intentions, stress, female adolescents.

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**Published** 21 November 2022

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Knowledge E

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Selection and Peer-review under  
the responsibility of the ICoPsy  
Conference Committee.

## 1. Introduction

A problem in the medical world that most commonly occurs in the environment is smoking. Smoking behavior is still often carried out by the community, although there has been a lot of education that explains the dangers of smoking through various media. According to survey results from [1], in the 2018 Indonesia Tobacco Factsheet, it is known that as many as 14.7% of the Indonesian population died from smoking. Smoking can also harm several organ systems of the body and is considered a major risk factor for many diseases which are the biggest cause of death among adults worldwide [2]. The results of [3] show that there are 72.1% of students who have more knowledge about the dangers of smoking, but 34.9% of students are heavy smokers. In this case, it was found that although the level of knowledge about the dangers of smoking is high, smoking behavior is still often carried out by the people of Indonesia. According to data from

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the Minister of Health of the Republic of Indonesia Number 40, Indonesia is known to consume the third largest number of cigarettes in the world after the first, namely China and the second, namely India with a total of 33.8% of Indonesians who smoke consisting of 62.9% men and 43%, 8% women.

Smoking behavior is often done by adults, teenagers, and even children. However, the first age individuals start trying to smoke is in their teens, i.e., around 17-18 years old [4]. In adolescence, many individuals experiment with smoking and it will eventually become a habit that is carried into adulthood. According to Erikson, adolescence starts from the age of 12-18 years [5]. In adolescence, individuals experience age and personal development, so it usually encourages individuals to tend to try new things including smoking.

Adolescence is also referred to as the individual transition period from childhood to adulthood [6]. In this transition period, individuals are faced with an identity crisis, so that individuals will try new things or explore to find their identity. Individuals who are not emotionally ready to face this crisis will feel stressed. At times of stress, smoking is chosen as a form of coping with stress because individuals feel pleasure, satisfaction, and calm when smoking [7].

In general, more men engage in smoking behavior than women. Quoting from data-books regarding data on adolescents who smoke by gender in ASEAN, the percentage of male adolescent smokers in Indonesia in 2014 was 35.3%, while the number of female adolescent smokers in Indonesia was 3.4% [8]. From these data, it can be seen that although few, there are still young women in Indonesia who smoke. Smoking in women can cause other dangerous diseases such as breast cancer, ovarian cancer, uterine cancer, and skin cancer. In Indonesia, something that is still taboo or not common for women is smoking. When women smoke, society tends to give negative moral judgments such as being called "naughty" women. According to the results of a study, adolescent girls tend to experience exposure to stressors and higher levels of psychological pressure than boys [9]. During the transition from childhood to adulthood, the significant biological changes that occur in adolescent girls can bring unique discomfort and challenges to them.

Cigarettes are interpreted as breaking the atmosphere in social activities, needs, and lifestyle. This is evidenced by the results of previous research on women who smoke at several universities in Indonesia. A study on female students who smoked at Airlangga University showed that in addition to meeting needs, smoking behavior was carried out to make them more confident and help solve them [10]. Another study on female students who smoked at Yogyakarta State University showed that women

smoke because they get influenced by the social environment (especially the peer environment), lifestyle, and habits.

Another study on the meaning of cigarettes in adolescent girls who smoke shows that in general smoking behavior in adolescent girls is influenced by the people around them who smoke, such as family members and peers [11]. In this case, smoking behavior is considered as a behavior that can be learned from the surrounding environment through the meaning of each individual. One of the causes in the meaning of cigarettes in adolescent girls is the negative stereotype of women who smoke [11].

The purpose of this study was to examine the relationship between stress levels and smoking intentions in adolescent girls in Malang. This research is expected to provide a scientific contribution to the science of psychology regarding the relationship between stress and smoking intention in adolescent girls and further studies that examine similar topics. This research is expected to provide practical benefits, namely helping parents and teachers to carry out preventive activities to reduce stress in adolescents so as to reduce the risk of possible smoking, help parents and teachers to help adolescent girls adapt during the transition period, and provide benefits for parents and teachers to understand psychological state of adolescents that can cause stress.

## 2. Literature Review

According to [12] stressors can also be referred to as stress conditions caused by physical conditions and the social environment. Stressor is a condition of anything that can create turmoil from within the body that is the cause of a psychological reaction. According to [13] there are several sources of stress experienced by adolescents. The first is biological stress, this can occur when the physical changes are rapid in adolescent girls from the age of 12-14 years. As a result of these very fast changes, teenagers feel that everyone sees them. Another factor that can be stressful is acne, especially for teenagers who have narrow thoughts about the ideal beauty. At the same time, the obligations of schooling and socializing responsibilities make teenagers less rested which can make them experience stress. The fifth source of stress is social stress, this is caused by a sense of not being accepted by adolescents in adult relationships. They feel they do not get the opportunity or freedom to express their opinions. Not only that, they are also prohibited from using or consuming alcohol legally and are also prohibited from working in high-paying jobs. This is what triggers adolescent stress.

Smoking intention is the tendency of adolescents to try to use cigarettes [14]. Intention is the embodiment of individual behavior which is a motivational factor. Intention is also

referred to as the initial state of action until the opportunity arises to create it in real behavior. Thus, smoking behavior in a person can be seen from his smoking intention.

The fifth developmental stage of Erikson's psychosocial theory, namely identity vs identity confusion (identity vs confusion) is a stage that occurs in adolescence [6]. In this phase, adolescents will try to find their identity or identity that will be carried into the future. Thus, adolescents are more prone to smoking because they are in the search for identity.

The many crises experienced in adolescence can cause stress. Stress in adolescents is influenced by various factors such as daily events, lecture problems, problems with peers, and so on. In addition, during adolescence there is a change or transition from childhood to adulthood. This is one of the factors that trigger stress in adolescents. One of the coping methods used by adolescents to relieve stress is smoking because it is believed to help solve problems. This can affect the tendency of teenagers to want to try smoking which is high or also called smoking intention.

### 3. Method

#### 3.1. Research Design

The approach used in this research is a quantitative approach. Quantitative research is research that uses statistical methods and aims to prove research hypotheses through field data [15]. This study uses a correlational research design. This study analyzed the relationship between stress levels as an independent variable (X) and smoking intensity as the selected variable (Y) in adolescent girls in Malang.

#### 3.2. Research Subjects

The population in this study were female adolescents in Malang who had criteria including female

adolescents in Malang who smoked, and aged 12-18 years. The sampling technique used is

accidental sampling. Accidental sampling is one of the non-probability sampling techniques that is

carried out based on chance, that is, any subject who coincidentally meets the researcher and meets

the criteria can be used as a sample [16]. According to [17], and obtained the results of 100 respondents.

### 3.3. Instruments

In this study, the researcher used two scales to measure the two variables. The first instrument used to measure the stress level variable was modified from [18] Adolescent Stress Questionnaire (ASQ). This scale has 31 valid and reliable items that are feasible to use. This scale has 4 answer choices, namely 1 = not stressed, 2 = slightly stressed, 3 = moderately stressed, and 4 = very stressed. The second instrument was used to measure the smoking intention variable. Researchers used the smoking intentions scale which consists of 23 valid and reliable items that are feasible to use. This scale has four answer options, namely 1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree.

### 3.4. Data Collection Procedures

The procedure in this study was carried out by conducting a trial of a modified measuring instrument

on 30 samples. After testing, some invalid items will be discarded. The validity test in this study uses

the type of construct validity. On the stress level scale, there are a total of 54 items that have been

modified by the researcher from the adolescent stress questionnaire scale. However, after the

validity test, there are 23 invalid items, so there are 31 items on a scale of 1 that are valid and

feasible to use. While on the smoking intention scale there are a total of 28 items that have been

modified by researchers from the smoking intention scale. However, after testing the validity there

are 6 items that are not valid. So there are 22 items on a scale of 2 that are valid and feasible to use.

The reliability test used in this study is the internal consistency reliability using Cronbach's alpha

formula. In this study, the stress level scale has a reliability coefficient of .884. While the coefficient on the smoking intention scale is .849. According to [19], if the value (.80 < reliability coefficient < .90), then the item is declared to have a good reliability value. So that the two scales in this study have a good reliability value.

### 3.5. Data analysis

In this study, descriptive analysis was used to reveal descriptions of stress levels and smoking intentions. The data analysis technique used to test the hypothesis of this research is Pearson Product Moment correlation analysis technique. The assumption test used in this study is using the normality test.

## 4. Result and Discussion

### 4.1. Descriptive analysis

Descriptive analysis was used to describe the relationship between stress levels and smoking intentions in adolescent girls in Malang. Following are the results of a descriptive analysis of stress levels and smoking intentions. On the stress level variable, the results of the analysis show a mean value of 87.86 and a standard deviation of 15,129. In the smoking intention variable, the mean value is 60.46 and the standard deviation is 12.264.

TABLE 1: Descriptive statistic.

Variabel	N	Minimum	Maximum	Mean	Std. Deviation
Stress level	100	50	114	87.60	15.129
Smoking Intention	100	33	83	60.46	12.264

The categorization carried out in this study uses the form of a hypothetical norm based on [15]. In table 2 it can be concluded that the level of stress in adolescent girls who smoke in the city of Malang is relatively high with a percentage of 57%.

According to [20], stress is the body’s reaction to stressful situations and results in feelings of anxiety, anger, and frustration. Stress that occurs in adolescents is generally caused by five main factors including biological stress, family stress, school stress, peer stress, and social stress [13]. Based on the results of the descriptive analysis

of the stress level variable, adolescent girls in Malang City experience stress in the high category. The description of female adolescent stress in Malang City is explained through eight aspects. The first aspect is home life events, which refers to the interpersonal relationships that exist at home between children and parents, the second is school performance (performance at school). namely school attendance, this stress occurs because individuals tend to go to school/college from morning to evening so they only have little or no time to do other activities outside school/college hours, the fourth aspect is romantic relationship. ) stress can occur due to problems experienced by individuals with partners such as arguments to separation from partners, the fifth aspect is peer pressure, stress occurs due to demands from peers to adjust to the environment, the sixth aspect is teacher interaction. with the teacher) stress occurs because Because teachers expect too much from individuals, the seventh aspect, namely future uncertainty, stress occurs because individuals are confused about what they really want to do, the last aspect is financial pressure. teenagers will not earn as much as adults.

Garfinkel [21] says that in general the causes of stress in adolescents include breaking up with girlfriends, differences of opinion with parents, fighting with sisters or brothers, differences of opinion between parents, changes in the economic status of parents, illness suffered by members of the family. family, problems with peers, and problems with parents. In addition to this, the learning environment in a bad school/campus can also be a cause of stress for individuals. Related to this, the heavier the pressure given by both family, school, teachers, and peers, the stress that occurs will be more often experienced by individuals.

In general, girls are more prone to stress than boys. This is because women produce the hormone corticotropin releasing factor (CRF) twice as much as men [22]. The results of a study showed that adolescent female smokers were more likely to experience suicidal ideation than boys [23]. Another factor that affects stress levels in women is menstruation [24].

TABLE 2: Stress Level Score Classification.

Classifications	Range	Frequency	Percentage
Very low	$x \leq 54$	4	4%
Low	$54 < x \leq 78$	19	19%
High	$78 < x \leq 101$	57	57%
Very High	$101 < x$	20	20%

In table 3 it can be concluded that the smoking intention of adolescent girls who smoke in Malang City is high with a percentage of 49%.

According to [14], smoking intention is an individual’s tendency to try smoking. Intention is also referred to as the initial condition of behavior until there is an opportunity to manifest it in real behavior. Thus, smoking behavior that appears in individuals can be observed through their smoking tendencies or intentions.

Based on the results of descriptive analysis of smoking intention variables, female adolescents in Malang City tend to have high smoking intentions. The description of female adolescent stress in Malang City is explained through two aspects. The first aspect is the extent of the subject’s desire to smoke. The individual’s desire to smoke can increase from the conditions of the social environment including the family environment and friendships as well as the pressure experienced by the individual. The second aspect is the extent to which or how much the individual attempts to smoke. Individuals who have a high effort to smoke will prioritize cigarettes over other needs, even willing to borrow or ask friends for money/cigarettes for their smoking needs.

According to [25], attitudes can affect smoking intentions in adolescent girls. Attitudes are formed through a social learning process, where individuals will learn a new behavior from the surrounding environment. Starting from the process of observing, the individual will assess the behavior and decide whether or not to perform the same behavior. Therefore, if the environment around individuals such as family and friends who smoke a lot, then the individual’s attitude towards smoking behavior will also increase. According to the results of a study from [26], it shows that adolescents who have the intention to smoke are influenced by pressure or stress that comes from school, home, and circle of friends. Intention to smoke can also increase because it is believed by adolescent girls to curb appetite, increase weight loss, and make women thin and independent [27].

TABLE 3: Smoking Intention Score Classifications.

Classifications	Range	Frequency	Percentage
Very low	$x \leq 39$	6	6%
Low	$39 < x \leq 55$	26	26%
High	$55 < x \leq 72$	49	49%
Very high	$72 < x$	19	19%

## 4.2. Testing of Assumptions

The assumption test carried out in this study is by using the normality test. The normality test was carried out to determine whether the distribution of research data was normally distributed or not [28]. In this study, the normality test used was the Kolmogorov-Smirnov

test. The following is the calculation result of the Kolmogorov-Smirnov normality test on the stress level variable and the smoking intention variable.

TABLE 4: Test of normality Kolmogorov-Smirnov.

Variabel	Sig.	sig. level	Description
Stress level	.112	> .05	Normal
Smoking intention	.119	> .05	Normal

Based on table 4 above, the results of the calculation of the normality test for the stress level variable are .112. Because the significance value is more than .05 (.112 > .05), it can be concluded that the stress level variable is normally distributed. While the results of the calculation of the normality test on the smoking intention variable are .119. Because the significance value is more than .05 (.119 > .05), it can be concluded that the smoking intention variable is normally distributed.

### 4.3. Hypothesis Testing

The results of hypothesis testing using Pearson’s Product Moment Correlation are as follows (Table 5) below :

TABLE 5: Pearson Product Moment Correlation.

Variabel	r	Sig.	Description
Stress level (X) dan smoking intention (Y)	.924	.000	Significant relationship

Based on the results of the Pearson Product Moment correlation analysis, it is known that the significance value is less than .05 (.000 < .05), from these results it can be concluded that the H1 hypothesis is accepted. This means that there is a significant relationship between the stress level variable (X) and the smoking intention variable (Y), with a correlation coefficient value of .924 indicating a positive value (+).

The results of this study are in line with research conducted by [29] with the title “The Relationship between Stress Levels and Smoking Behavior in Indra Bangsa Islamic Vocational High School students in Tangerang City”. In this study, which used the analysis method with the correlation test, the results showed that the proposed hypothesis was accepted, (sig = .035 < .05), from these results it showed that there was a significant positive relationship between stress levels and smoking behavior in adolescents.

In Indonesia, especially for women, smoking is considered a taboo subject by society. However, smoking is still believed to relieve stress. As described earlier, the many crises experienced during adolescence can cause stress. Therefore, smoking is considered

as one of the coping methods used and is believed to reduce stress levels experienced by adolescents.

The cause of increased stress levels and their relationship with smoking behavior is due to the many demands and temptations experienced by teenagers. This makes teenagers become depressed and feel stress on themselves. The difference in stress levels in men and women is when men experience more active and exploratory stress, while women experience stress with anxiety, inadequacy and sensitivity [30]. The classification of stress levels in men and women is generally the same. But in reality, women are more susceptible to stress with anxiety disorders, eating disorders, sleep disorders, guilt, and a sense of decreased appetite. The stress experienced by women is caused by the influencing hormone estrogen [31]. Whereas in men, stress does not easily affect even though it has many sources of stress (stressor).

The results of a study conducted by [32], show that adolescent girls have high levels of stress caused by unhealthy dating behaviors including kissing, necking, petting, and intercourse. Dating behavior in adolescents itself begins to occur because during adolescence there are psychological changes that result in teenagers starting to like the opposite sex.

A cigarette smoked can have a big effect on the perceived problem. Cigarettes can forget the problems experienced by teenagers, especially when they are hanging out with a negative environment, because the mind only focuses on the enjoyment of cigarettes so they forget there is a problem, especially if the stress is higher, the desire for smoking will also continue to increase [33]. However, according to [34], smoking is done continuously in adolescents can affect memory and learning disorders.

The way adolescent girls interact with their peers can affect the willingness of girls to smoke. This is in accordance with the results of research conducted by [35] that close friends are more likely to influence adolescent girls in smoking behavior than are influenced by their larger peers.

## Acknowledge, Funding & Ethics Policies

The completion of this article will never be separated from the help of various parties to assist the process of writing and working on this article and also to provide support to the author from beginning to end, so the author would like to express his deepest gratitude to Prof. Dr. Fattah Hanurawan, M.Sc., M.Ed. Dean of the Faculty of Psychology, State University of Malang and also as a supervisor who always supervises, takes the time, and provides support in completing this article.

The author's family, my beloved father (Arief Zainal) and mother (Asih Yulianti), who are always listeners and also always provide support, motivation, and never-ending prayers for smoothness and ease at every stage of the author's life. And don't forget also my sister (Anang, Indah, Fajar, Eva, Fara, Adi) who also always accompanies and inspires the writer to always proceed.

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