



Research Paper

## Adolescents' Knowledge and Attitude to Pictorial Warnings On Cigarette Packs in Jayapura City

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### Abstract

Pictorial warnings on cigarette packs are designed to convey information about the dangers of smoking to the general public. This study aimed to assess students' knowledge and attitudes toward pictorial warnings on cigarette packs. A quantitative descriptive design with a cross-sectional approach was used in this study. The study was conducted at SMA Negeri 1 Kota Jayapura with a total population of 1,396 students from grades X to XII. A total of 94 respondents were selected using an accidental sampling technique. The univariate analysis showed that 66% of students had low levels of knowledge, while 91.5% demonstrated a positive attitude toward pictorial warnings on cigarette packs. In conclusion, students in Jayapura City exhibited limited knowledge but maintained a positive attitude toward pictorial warnings on cigarette packs.

### Keywords

*attitude, cigarette, knowledge, pictorial warnings*

## 1. INTRODUCTION

Smoking remains one of the public health problems in Indonesia that is still difficult to stop. In certain tribes in Indonesia, smoking is a culture, so it is very difficult to stop. The rates of tobacco consumption among young people remain alarming. Although many smokers are aware of the health, the habit of smoking is still done and even the intensity is increasing (RSST, 2022) (WHO, 2023). Globally, China and India have the highest number of smokers in the world, with 307 million and 106 million smokers respectively, out of a total of 1.1 billion adult smokers, followed by Indonesia with 74 million (Kemenkes, 2018b). In the ASEAN region, there are 122 million smokers, with Indonesia leading the way, accounting for 65% of them. The 2022 National Youth Tobacco Survey (NYTS) revealed that 3 million teenagers, including those in junior high school and older, have tried smoking (NYTS, 2022) (Violita et al., 2023).

According to Riskesdas 2018, the most common age for first-time smoking was 15-19 years old at 52.1% and 10-14 years old at 23.1%. This means that since elementary and junior high school age, many teenagers reported having tried smoking. Even 2.5% have started smoking since the age of 5-9 years. There was an increase in the percentage of smokers among children aged 10-18 years from 7.2% in 2013 to 9.1% in 2018. This figure is not in line with the government's 2015-2019 RPJMN target, where the smoking rate among teenagers is targeted to fall to 5.4% (Kemenkes, 2018a).

Based on data from the Central Statistics Agency, the percentage of smoking in the population aged  $\geq 15$  years by Province in Indonesia from 2017 to 2019 showed that in 2017 the number of smokers in Papua Province was a total of 27.28% while in 2018 the percentage of smoking increased in the province to a total of 28.97%. The prevalence of smokers in men in 2018 at the age of  $\geq 15$  years with a prevalence of 32.0% and in women 4.8%. In 2019 the percentage of smoking in Papua Province was a total of 26.05% (BPS, 2021). Even research in Jayapura Regency found that more than 10% of elementary school-aged children had smoked (Wahyuti and Yufuai, 2024).

Government Regulation No. 109 of 2012 concerning the protection of materials containing addictive substances in the form of tobacco products for health. In Government Regulation No. 109/2012, several things are regulated to protect the public from the dangers of cigarettes, namely the obligation to include nicotine and tar levels on cigarette packs, a ban on selling or giving to children under 18 years of age or pregnant women, and the obligation to include health warnings in the form of images and writing printed on one package. With five (Violita et al., 2023) messages, namely first, mouth cancer, throat cancer, smoking kills you, smoking near children is dangerous for them, and smoking can cause lung cancer and chronic bronchitis (Trisnowati et al., 2018).

Several studies have found a significant relationship between visual warnings on cigarette packs and smoking

behavior in adolescents (Aldani et al., 2015) (Irwan et al., 2023). The persuasive messages contained in warning messages in the form of images and writing become stimulation that can encourage changes in knowledge, attitudes and smoking behavior. If adolescents are afraid of the impact of graphic messages on cigarette packs, they are more likely to perceive smoking as a serious health risk. The fear triggered by the graphic warnings can serve as a deterrent, reinforcing the understanding of the harmful effects of smoking. It also could motivate them to avoid smoking or even quit if they already smoke (Fatmawati et al., 2014) (Nasution, 2020). In light of these findings, this study aims to explore adolescents knowledge regarding pictorial warnings on cigarette packs.

## 2. METHOD

This study employed a quantitative design with a cross-sectional approach. The study was conducted at SMA Negeri 1 Kota Jayapura and involved a total student population of 1,396 across grades X–XII. The sample size was calculated using Slovin’s formula, resulting in a minimum of 94 respondents. A convenience sampling technique was employed, with inclusion criteria comprising students who were active smokers. Univariate analysis was performed using SPSS.

## 3. RESULTS

This study involved 94 students who completed a self-administered questionnaire. The results are as follows:

**Table 1.** Characteristics of Respondents

Variable	n	%
<b>Age</b>		
15 Years	31	33.0
16 Years	27	29.0
17 Years	26	27.5
18 Years	10	10.5
<b>Gender</b>		
Male	85	9.5
Female	9	90.5
<b>Ethnic</b>		
Papua	50	53.0
Non Papua	44	47.0
<b>Total</b>	94	100.0

Table 1 presents the characteristics of the respondents. The highest proportion of smokers was among students aged 15 years, comprising 31 individuals (33%). Male students represented the majority of smokers, accounting for 85 respondents (90.5%).

According to Table 2, 62 respondents (66%) had limited knowledge about cigarettes, while 32 respondents (34%)

**Table 2.** Univariate Analysis of Knowledge and Attitudes

Variable	n	%
<b>Knowledge</b>		
Enough	32	34.0
Less	62	66.0
<b>Attitudes</b>		
Positive	86	91.5
Negative	8	8.5
<b>Total</b>	94	100.0

demonstrated sufficient knowledge. Regarding attitudes toward pictorial health warnings on cigarette packages, the majority of respondents (86 students; 91.5%) exhibited a positive attitude, while only 8 students (8.5%) had a negative attitude.

**Table 3.** Frequency Distribution Based On Smoking Behavior

Variable	n	%
<b>Knowledge</b>		
Heavy Smoker	8	8.5
Moderate Smoker	46	49.0
Light Smoker	40	42.5
<b>Total</b>	94	100.0

Table 3 shows that 46 students (49%) were classified as moderate smokers, 40 students (42.5%) as light smokers, and 8 students (8.5%) as heavy smokers.

## 4. DISCUSSION

The purpose of this study was to assess students’ knowledge and attitudes toward pictorial warnings on cigarette packs. Understanding this is crucial to evaluating how effectively these visual warnings convey the health risks of smoking and influence students’ perceptions and behaviors. The purpose of this study was to assess students’ knowledge and attitudes toward pictorial warnings on cigarette packs. Understanding this is crucial to evaluating how effectively these visual warnings convey the health risks of smoking and influence students’ perceptions and behaviors.

The study found that the majority of respondents had insufficient knowledge regarding the dangers of smoking. This finding is different from the results of research at Kadugede, Kuningan, West Java which showed that most of its young respondents fell into the “good” knowledge category (56.8%). This study also found that respondents with good knowledge tended to be light smokers, whereas heavy smokers were those who had less knowledge about

cigarettes (Heryanto et al., 2017). Government Regulation No. 109 of 2012 serves to protect public health by regulating tobacco products. It aims to provide information about the dangers of smoking by mandating to protect public health by regulating tobacco products. It aims to provide Information about the dangers of cigarette by mandating the display of nicotine and tar levels on cigarette packs, it ensures that consumers are informed about the harmful substances in tobacco products (Trisnowati et al., 2018).

Several experimental studies have found a change in knowledge after exposure to warning images on cigarette packs. A Study in South Sulawesi found that there were a shift in mindset occurred after respondents were exposed to the smoking hazard images with over 66% of them reporting feelings of fear upon viewing the cigarette warning images (Ahmad et al., 2022). Meanwhile, in this study, the low level of knowledge, despite adolescents having seen warning images on cigarette packs, can be caused by several factors. One of them is the environmental factor, where adolescence is greatly influenced by peers, family, and their surroundings. If smoking is considered a common behavior within their environment, the warning images on cigarette packs may not be enough to change their attitudes or knowledge. Another possible explanation is that the images and accompanying text are too small, making them difficult to notice or pay attention to. If the warning images are not accompanied by more in-depth education and clear counseling about the harmful effects of smoking, then even though adolescents see the images, they still may not have adequate knowledge about the dangers of smoking.

The next variable discussed is attitude. According to Notoadmodjo, attitude refers to a mental state or disposition how individuals respond to a particular object, person, or situation. It refers to the way a person thinks, feels, and behaves in relation to specific stimuli, which can be positive, negative, or neutral. Attitudes are shaped by personal experiences, beliefs, values, and social influences, and they play a key role in determining behavior (Soekidjo, 2012). The results of this study indicate that the majority of students' attitudes at SMA Negeri 1 Jayapura are positive about the presence of pictorial warnings on cigarette packs. This result is supported by study in West Java which states that 52,9% of respondents have a good attitude towards pictorial health warnings on cigarette packs (Heryanto et al., 2017). Other studies in Medan have also found similar things, where many adolescents agree and show positive attitudes regarding smoking hazard or picture warning on cigarette packs (Hutabarat and Indrayani, 2021).

The respondent's attitude in this study was stated to be good because students from SMA Negeri 1 Jayapura agreed with the statement that pictorial health warnings on cigarette packs had a greater effect on reducing smoking. The picture also made them aware of the dangers of cigarettes through the health warning pictures and on the other hand respondents demonstrated a negative attitude

by disagreeing with the statement regarding pictorial warnings, which they perceived as merely frightening. Several studies found that the perception of informative, interesting, motivating and threatening images significantly influenced adolescent smoking behavior (Irwan et al., 2023) (Arindary and Agustina, 2019) (Tantri et al., 2018).

The inclusion of images should require printing Health warnings should include images that cover more than 50% of the surface area on both the front and back of cigarette packaging so that people can see it clearly. The text should be more descriptive so making it easily visible and effective in raising public awareness about the risks of smoking. This approach is in line with the practices of various countries that include health warning images on cigarette packaging (Irwan et al., 2023).

The health warning consists of the following types of images, images of mouth cancer, images of smokers with smoke forming a skull, images of throat cancer, images of people smoking with children nearby and images of blackened lungs due to cancer. The intended purpose of these images is to instill fear in smokers and ultimately reduce smoking prevalence. Warnings about the dangers of smoking are accompanied by images of the consequences of smoking on the packaging, including using verbal and nonverbal language built into the cigarette advertisement (Trisnowati et al., 2018).

Health warnings on cigarette packaging are very important as a means of communication and making smokers aware of the health risks of smoking. When individuals read and view health warning images, and also read the messages about diseases that are the effects of smoking listed on the health warning label on cigarette packaging, it is hoped that it will provide greater knowledge of the health effects due to cigarettes, and trigger the intention to quit smoking (Ana R et al., 2018) (Nasution, 2020).

The results of this study show that students fall into the moderate smoking category, with some classified as heavy smokers. This is certainly worrying for adolescent health. This study is in line with the study conducted by Arindari, which obtained results that the smoking behavior of respondents was mostly moderate, namely 49% compared to the smoking behavior of respondents with light and heavy criteria (Arindary and Agustina, 2019). Behavioral aspects in adolescents are influenced by three components, attitudes, subjective norms and perceptions of behavioral control (Soekidjo, 2012).

Adolescent smoking behavior is influenced by sociocultural factors, most of which are influenced by the surrounding environment. The majority of respondents smoke due to the influence of friends. The role of parents in maintaining and supervising adolescent behavior can certainly also be a factor that can influence adolescent smoking behavior. In this study, it can be seen that lack of knowledge and good attitudes in respondents do not affect respondents' behavior not to smoke. In this study, it was found that

many respondents had a cigarette consumption rate of 11-20 cigarettes per day. This is because respondents know the dangers of smoking but smoking has become an addiction, offering perceived benefits such as relaxation, headache relief, stress reduction, and combating feelings of lethargy.

#### 4.1 Limitation and Cautions

The research design is cross-sectional with univariate analysis so it cannot show the association relationship with the dependent and independent variables.

#### 4.2 Recommendation for Future Research

Recommendations for further research can add other variables such as social and technological. In addition, further analysis and testing can be carried out to see the association relationship.

### 5. CONCLUSION

The findings of this study indicate that students of SMA Negeri 1 Jayapura regarding the presence of warning images on cigarette generally have a positive attitude, the majority of which are positive and their level of knowledge about the dangers of smoking remains relatively low the majority of respondents fall into the moderate smoker category. Therefore, it is recommended to develop and implement a sustainable counseling program that involves teachers, parents, and the community in efforts to reduce adolescent smoking prevalence among. For future research, it is suggested to apply the Health Belief Model (HBM) to gain deeper insights into students' perceptions of smoking and pictorial warnings on cigarette packs. The Health Belief Model focuses on individuals' beliefs about health risks and the benefits of taking preventive actions, which can help explain how students' attitudes toward smoking and health warnings are shaped.

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### CONFLICT OF INTEREST

The authors declare no conflicts of interest.

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