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## **INHIBITORY CONTROL AND EMPATHY: A STUDY OF SMOKING IN PUBLIC PLACES AMONG STUDENTS**

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### **ABSTRACT**

Smoking behavior in public places is often found in various places, but rarely discussed in terms of inhibitory control and empathy. This study aims to determine the relationship of inhibitory control with empathy for smokers in public places in students in Makassar. The type of research used in this study is quantitative. The sample in the study was smoker students who were in Makassar. This research was conducted on 301 student smokers in Makassar. The results of the hypothesis test analysis found  $r(12) = -.732, p = .00$ . which shows the relationship between inhibitory control and empathy for smokers in public places in students in Makassar with a negative direction. This study expects the students to be more considerate of cigarette consumption in public places and understand the principle of empathy for themselves and others.

**Keywords:** Inhibitory Control, Empathy, Smoker.

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### **INTRODUCTION**

Health is something that all living things want and is very important for human life. There are still many people who do not understand how important health is, as evidenced by the high number of smokers in the community. Smoking has become a habit in various circles, such as adolescents, adults, parents, and small children who have also smoked (Fithria et al., 2021; La Fauci et al., 2021; Tauho & Gulo, 2023). Smoking is an unhealthy habit or way of life (Balwan & Kour, 2021). The results of a study on university students found that they also pay less attention to the No Smoking Area (KTR) as an area that is important to pay attention to (Ilhamsyah, Tjoetra, & Ikhsan, 2020). This is due to the lack of socialization, half-hearted stakeholder commitment, sponsorship and intense advertising from cigarette

manufacturers, lack of funds, lack of human resources, and lack of participation in the success of the smoking ban policy in public places.

The dangers posed by cigarettes not only affect those who smoke (active smokers) but also adversely affect people who are around smokers and have to inhale cigarette smoke (passive smokers). Passive smokers have the same risk as active smokers because they inhale 4,000 particles and carcinogens in cigarette smoke (substances that can cause cancer) (Jain et al., 2021). This condition is more dangerous because the bodies of passive smokers are not accustomed to the smoke that is inhaled into their bodies. According to PP RI No.19 of 2003, the risk of developing lung cancer is 30% greater for passive smokers than for active smokers.

Empathy is an individual's ability to understand the condition or mental state of others (Nuryahrurahmah, 2018). Empathy can make a person feel like they are experiencing or being in the events others are experiencing (Eisenberg, 2018). Then, according to Iatrou et al. (2022), it shows that individuals who choose to smoke in public places tend to have lower levels of Empathy than those who do not smoke in public places. So, it is concluded that smoking in public places is one of the factors for a lack of Empathy in a person. According to Haug (2021), inhibitory control is an individual's ability to withstand impulsive reactions in situations that require caution and self-control.

Diamond (2013) defines inhibitory control as an individual's ability to direct attention, behaviour, thoughts and emotions to override internal distractions or strong external influences in taking appropriate or necessary actions. Sosa (2024) defines inhibitory control as the ability to stop or override a mental process, either in whole or in part, with or without intention. Inhibitory control is the ability to refrain from undesirable or not actions by applicable social norms.

Albaladejo-García et al. (2023) state that inhibitory control is essential for a person to exercise cognitive and motor control. Another perspective states that inhibitory control can inhibit perceptual, cognitive and unexpected responses and contribute to reasoning (Aydmune et al., 2019). Inhibitory control is also a cognitive control system inhibiting irrelevant information (Van Moorselaar & Slagter, 2020). The impact of inhibitory control behaviours on intrusive, developmental, social and cognitive behaviours.

Cuff et al. (2016) says that empathy is an individual's ability to understand the feelings of others, which includes cognitive and practical abilities.

According to Davi, empathy has four aspects: fantasy, perspective-taking, empathic concern, and personal distress. Bailey (2022) explain that empathy is the ability to feel the emotional state of others, feel sympathy, try to solve problems, and take other people's perspectives. Empathy can be described as an appropriate affective response to another person's situation rather than one's own (Van Dijke et al., 2020).

Empathy is an individual's ability to understand the condition or mental state of others (Nuryahrurahmah, 2018). Empathy can make a person feel like they are experiencing or being in the events others are experiencing (Eisenberg, 2018). If it is associated with smoking behaviour, then empathetic smokers can control themselves by not smoking in public places because they realize that smoking the smoke disturbs others around them.

Malbois (2023) said that individuals with empathy are different from sympathetic attitudes because sympathy is more focused on their feelings compared to the feelings of others, while empathy focuses more on the feelings of others. The ability to empathize is the ability to understand the feelings and needs of others so that other people will feel happy and understand their feelings (Israelashvili et al., 2019). Empathy is part of a sense of tolerance; empathy can also be described as the ability to understand and feel the feelings of others (Gkinko & Elbanna, 2022). Therefore, in this study we will describe the relationship between inhibitory control and empathy for smokers in public places among students in Makassar.

## **METHOD**

This study uses quantitative research methods. Sampling in this study used non-probability sampling. Non-probability sampling is a sampling technique that does not provide equal

opportunities or opportunities for each element or member of the population to be selected as a sample.

The sampling technique in this study used purposive sampling because the researcher did not know the exact number of subjects and populations. The sample needed in this study was students in Makassar who were active smokers. This research was conducted on 301 student smokers in Makassar.

In this study, we will use the Stroop Color-Word Task (SCWT) to measure inhibitory control. Diamond (2013) used the Stroop Color-Word Test measuring instrument to measure inhibitory control. This test measures a person's ability to withhold responses or inhibit impulses by measuring reaction time and speed in completing tasks that require cognitive control. Participants are asked to access the link [www.psychtoolkit.org](http://www.psychtoolkit.org) to measure an individual's inhibitory control ability.

The test took less than 2 minutes to complete and presented 40 trials of words consisting of "red", "green", and "blue" "yellow" displayed randomly. Subjects in this study were tasked with determining the colour of the word displayed on Stroop by ignoring the colour name text and pressing the appropriate button using English, for example, y (yellow means yellow), r (red means red), b (blue means blue), g (green means green). Sometimes, the appearance of words and colours will be the same during the test. This is called Congruent, while incongruent is the appearance of words and colours that appear differently. The score used in the study is the Stroop effect score. The Stroop effect is obtained from the average incongruent response time minus the congruent response time.

This study uses simple linear regression analysis, which is used to determine and study the relationship between the two variables and determine if only one variable affects the other

variable. The data was analyzed with the help of the JASP 0.19.0.

## RESULT

Before the main data was analyzed, we conducted assumption tests first; namely by using normality and linearity tests.

**Table 1. Normality test**

Variables	K-S*	Sig.**	Description
Empathy	0.789	0.563	Normally distributed
<i>Inhibitory Control</i>	1.312	0.064	Normally distributed

Based on the results of the data processing carried out, it can be seen in the table above that the Empathy variable gets a Kolmogorov-Smirnov value of 0.789 and a significance value of 0.563. The Inhibitory Control variable has a Kolmogorov-Smirnov value of 1.312 and a significance value of 0.064. The results of these two variables indicate that the data is normally distributed because it has a significance value greater than 0.05.

**Table 2. Linearity test**

Variabel	Linearity	Deviation from Linearity	Description
Empathy & <i>Inhibi. Control</i>	0.000	0.846	Linear

In the table of main data test results that have been carried out, the Pearson correlation result is -0.732 and the significance value is <0.05 (P<0,05). The information shows that the two variables, empathy and inhibitory control, have a correlation with a negative direction.

**Table 3. Analysis results**

Variables	Sig. (2-tailed)	Pearson Cor.	Desc.
Empathy & Inhibitory Control	0.000	-0.732	Negative Correlation

The results obtained in this population are quite unique because the higher the level of empathy, the lower the inhibitory control and vice versa.

## DISCUSSIONS

Based on the data analysis of Empathy for smokers in public places in students in Makassar conducted by researchers with five categorizations of very high, high, medium, low and very low. The results showed that the Empathy of smokers in public places in students with the Very High category was 26 people (8.6%), the High category was 49 people (16.3%), Moderate was 60 people (19.9%), Low was 160 people (53.4%), and with the Very Low category were six people (2%).

The results showed the Empathy of smokers in public places among students in Makassar, with the most dominant Low category as many as 160 people (53.4%). According to Camassa (2023), this can be caused by several factors, such as mood and feeling, situation and place, learning and identification process, nurture, and communication and language. Student smokers with low Empathy may continue to smoke in areas that are clearly stated as smoke-free areas without considering the comfort or feelings of others who are there.

They may smoke inside university buildings, in canteens, or in other public places where smoking is prohibited; what could be one of the causes of low Empathy among smokers students in Makassar is that smokers are dependent on nicotine, so smokers are more focused on meeting their nicotine needs

than considering the feelings or welfare of others (Churchill & Farrell, 2017).

As for the things that cause low Inhibitory Control in Student Smokers in Makassar due to the lack of ability and self-awareness of the long-term consequences of actions taken. Such as how the dangers caused and the impact of cigarette smoke both for yourself and others (Qasim et al., 2019). Meanwhile, according to Nigg (2017), he is said that the individual's living environment can also cause the low inhibitory control possessed by a person.

Inhibitory control refers to an individual's ability to control their impulses and behaviour; in the context of being an individual smoker, inhibitory control relates to the ability to refrain from smoking or control the desire to smoke, especially in public environments. Individuals with reasonable inhibitory control will be more able to avoid smoking in public places. At the same time, Empathy is the ability to understand and feel the feelings and experiences of others.

In the context of someone who smokes in public, the level of Empathy possessed by individual smokers can affect the extent to which they consider the feelings and experiences of others related to the impact of smoking and the cigarette smoke they cause, such as how passive harm to people exposed to cigarette smoke.

As explained above, there is a variation between Inhibitory control and empathy of smokers, in this case, those who smoke in public places. Someone with better inhibitory control will tend to be better able to control their smoking behaviour in public, but this may not necessarily correlate with their level of empathy towards people affected by their cigarette smoke.

It is important to remember that the relationship between inhibitory control and empathy is sometimes complex or

linear. Many other factors can influence a smoker's behaviour in public, including personal habits, social pressures, and an individual's understanding of the impact of smoking on the health of others. Improving inhibitory control can help individuals control their smoking habits better and be more considerate of others around them.

Based on the table of hypothesis test results, which have been carried out, the Pearson correlation results are -0.732. The information that empathy and inhibitory control have a negative correlation (negative relationship). This shows a relationship between empathy and inhibitory control of smokers in public places for students in Makassar.

Noten et al. (2020) showed in his research that there is a positive relationship between inhibitory control and Empathy. Inhibitory control affects more complex functions such as social cognition, tolerance, and empathy. The lower the inhibitory control in an individual, the lower the Empathy in that individual. Hansen also found that individuals with better inhibitory control abilities can understand the feelings and emotional experiences of others and are more likely to have positive empathic responses.

The research results obtained in this study show that the variable on inhibitory control has a correlation of 0.846 with a significance value below 0.05. The basis for decision-making is that if the Pearson correlation value is above 0.05 with a significance value below 0.05, the two variables can be correlated.

The findings described above are also inseparable from a person's ability to control their smoking habit in public places. Individuals with a high level of inhibitory control tend to be more able to control their smoking habits in unspecified places. These individuals can more easily refrain from smoking in

public places or near people who do not smoke because they have a better ability to control the emergence of the urge to smoke.

The high understanding possessed by students in Makassar of the impact that cigarette smoke will have on the health of others can increase their level of Empathy for people who may be affected by cigarette smoke, such as children of pregnant women or passive smokers in public places. Students in Makassar can also follow the rules and regulations regarding smoking in public places. Someone with reasonable inhibitory control will also be more compliant with smoking restrictions in buildings or areas designated as smoke-free zones.

## **CONCLUSIONS**

The findings described above are also inseparable from a person's ability to control their smoking habit in public places. Individuals with a high level of inhibitory control tend to be more able to control their smoking habits in unspecified places. These individuals can more easily refrain from smoking in public places or near people who do not smoke because they have a better ability to control the emergence of the urge to smoke.

The high understanding possessed by students in the Makassar of the impact that cigarette smoke will have on the health of others can increase their level of Empathy for people who may be affected by cigarette smoke, such as children of pregnant women or passive smokers in public places. Students in Makassar can also follow the rules and regulations regarding smoking in public places. Someone with reasonable inhibitory control will also be more compliant with smoking restrictions in buildings or areas designated as smoke-free zones. With these results we hope that students can pay attention to their



health much better and future researchers can consider other emotional conditions in the study of their activities.

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