The Relationship of Adolescent Self-Control with Covid-19 Health Protocol Adherence (Survey of Adolescents in Palembang City)

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ABSTRACT

Background: *COVID-19 is a health problem that is currently a global concern caused by SARS-CoV-2 infection. South Sumatra Province has a percentage of COVID-19 mortality rate of 5.92%, which exceeds the national mortality percentage of 4.1%. Elimination of COVID-19 cases is one of the implementations of the Sustainable Development Goals (SDGs) which aims to end the epidemic of infectious diseases by 2030. Adolescents are faced with the ability to control their attitudes well in order to be consistent in action and achieve emotional maturity and character building.* ***Objectives:*** *to analyze the relationship between adolescent self-control and compliance with COVID-19 health protocols.* ***Methods:*** *analytical observational method with a quantitative approach with a cross-sectional design. This study's respondents were 100 samples using the voluntary sampling method. Information was collected online via Google form in February 2021. Data were analyzed using a simple linear regression test.* ***Results:*** *Univariate results showed that compliance with the COVID-19 health protocol was 53%. There was a significant relationship between behavioral, cognitive, and decision control on compliance with the COVID-19 health protocol. Linear regression results show a moderate and positive relationship between behavioral control (r = 0.274), cognitive control (r = 0.425), and decision control (r = 0, 473) to compliance with COVID-19 health protocols.* ***Conclusions:*** *Adolescents in Palembang City have good self-control so that they can modify and control behavior, manage information, and choose actions on COVID-19 protocols.*
Keywords: *Adolescent, Covid-19, Good health and well-being, Health protocols compliance, Self-control.*

INTRODUCTION

The current issue that has become a global polemic, namely Corona Virus Disease-19 (COVID-19) caused by the SARS-CoV-2 virus, has become a global concern. (Juhwan, 2020) The disease was first reported in December 2019 in Wuhan, Hubei Province. (Susilo *et al.*, 2020) On 12 March 2020, the World Health Organization (WHO) declared COVID-19 a pandemic and an international public health emergency. (Amornsriwatanakul *et al.*, 2022) A recent study reported 16.7% low mental health well-being among adolescents in ASEAN, which interferes with daily activities. (Güner and Hasanoğlu, 2020) COVID-19 was first reported in Indonesia on March 2, 2020, with two cases.(Muhamad, 2021) Confirmed cases in Indonesia as of March 31, 2020, totaled 1,528 cases with 136 deaths and a mortality rate of 8.9%. This is the highest rate in Southeast Asia. (Susilo *et al.*, 2020) The percentage of COVID-19 cases is increasing every day. The disease affects everyone regardless of age, gender, and other individual characteristics. (Herliandry *et al.*, 2020)

Data from the Ministry of Health of the Republic of Indonesia as of January 18, 2021, found the number of positive cases of COVID-19 amounting to 917,015 cases, 745,935 cases recovered and 26,282 cases died. This number puts Indonesia at the 19th highest number of COVID-19 cases in the world.(Santoso, 2020) South Sumatra Province is the province with the most confirmed positive COVID-19 patients on the island of Sumatra. South Sumatra has a mortality rate of 5.92%, which exceeds the

national mortality rate of 4.1%. Confirmed positive cases of COVID-19 as of February 7, 2021, in South Sumatra reached 14,724 cases with 716 of them dying. Palembang City is the city with the highest percentage of cases in South Sumatra Province with 7,095 confirmed positive cases and 315 deaths.

Elimination of COVID-19 cases is one of the implementations of the Sustainable Development Goals (SDGs) which aims to end the epidemic of infectious diseases by 2030. However, public awareness in implementing health protocols is still a challenge. An interview study conducted by Padang State University found that most people do not understand the concept of New Normal and the importance of implementing health protocols, which causes people to be less compliant with government appeals about the dangers of COVID-19. People think COVID-19 is just an ordinary virus, so people are less enthusiastic about it. (Nafa, 2020)

COVID-19 not only affects adults and the elderly, but also affects children and teenagers.(Purwanto *et al.*, 2020) According to a report from the Centers for Disease Control and Prevention (CDC), children and adolescents are more at risk of COVID-19-related complications. One of the causes is neglecting to implement health protocols.(Iptidaiyah, Kadir and Junaidin, 2020) Data collected from February 2020 to July 2020 found that 70% of the 121 cases of children and adolescents who died from COVID-19-related complications were aged 10-20 years. (Anggraeni and Safitri, 2020)

The COVID-19 pandemic has had a devastating impact on adolescents globally, especially students who have experienced decreased academic performance, lack of physical activity, lack of nutritional intake and other mental health disorders. (Rahman *et al.*, 2022). One's response to an epidemic/pandemic may vary from person to person. Studies suggest that respondents experienced increased fear (79%), anxiety (83%) and depression (38%) during the COVID-19 pandemic. Health protocol policies cause teenagers to miss out on some big moments in their lives and everyday moments, such as chatting with friends and attending school.(Sholihah *et al.*, 2022) At first, some teenagers may feel that this is their chance to take a vacation. However, over time the impact of the pandemic has affected the mentality of teenagers. With self-control, it is hoped that adolescents will be able to control feelings, thoughts and actions to resist internal and external urges so that a person can act correctly. (Titisari, 2018) Efforts to cultivate self-control for adolescents need to be implemented properly.

Self-control will control adolescents not to engage in risky behaviors such as violating health protocols, smoking and alcohol consumption.(Perdana and Setiyawati, 2019) Jelita and Aslamawati's research found that the majority of adolescents during the COVID-19 pandemic in DKI Jakarta had low self-control. (Jelita and Aslamawati, 2019) Adolescents are faced with the ability to control their attitudes well in order to be consistent in their actions, achieve emotional maturity and character building through education, religion and family. The role of individual characteristics such as age, gender, level of education and economic status also affect the subsequent behavior of adolescents. (Wulandari *et al.*, 2020)

Based on the background description above, this study discusses the relationship between adolescent self-control and compliance with COVID-19 health protocols (survey of adolescents in Palembang City). The purpose of this study was to analyze the relationship between adolescent self-control and compliance with COVID-19 health protocols.

METHODS

This research has passed ethical review with No: 080/UN9.FKM/TU.KKE/2021. This research was conducted in February 2021 using a quantitative approach with an observational cross sectional study research design, which is a research design that studies the dynamics of the correlation between the independent variable and the dependent variable by taking measurements at a moment or one time.(Besral, 2007; Sugiyono, 2013) The population in this study were adolescents in Palembang City. The sampling technique was done by voluntary sampling with sample determination based on inclusion and exclusion criteria which resulted in 100 samples. Inclusion criteria included adolescents aged 19-24 years and willing to fill out the questionnaire voluntarily. For respondents who filled out the

questionnaire incompletely and did not include a telephone number were exclusion criteria. The independent variable is self-control (behavioral control, cognitive control and decision control) with the dependent variable being COVID-19 health protocol compliance.

This study uses a questionnaire consisting of 41 questions and refers to the self-control theory by James R. Averill in 1973.(Averill, 1973) The results of the questionnaire validity test show that all questions have a calculated r value greater than the r table value so that they are declared valid. The Cronbach's Alpha value is 0.926, which means that the questions contained in this research questionnaire are considered reliable (0.926>0.6). The

questionnaire was distributed via google form in the Palembang City area. The data obtained were then analyzed using univariate analysis and bivariate simple linear regression test with SPSS version 20 statistical processing application.

RESULTS AND DISCUSSION

This study was conducted on 100 adolescents aged 19-24 years who were selected and qualified by the inclusion and exclusion criteria and filled out a questionnaire (google form). The results of the frequency distribution of respondent characteristic data are presented in the following table:

Table 1. Overview of sample characteristics of adolescents aged 19-24 years regarding self-control of compliance with COVID-19 health protocols in Palembang City.

Sample characteristics	Number (n)	Percentation (%)
Gender		
Male	37	37
Female	63	63
Education level		
Not graduated from high school	1	1
High school graduate	71	71
Not graduated from university	2	2
University graduate	26	26
Parental income		
≤ Rp, 1.000.000	9	9
>Rp,1.000.000 - ≤ Rp, 3.000.000	33	33
>Rp, 3.000.0000	58	58
Age		
19	14	14
20	27	27
21	44	44
22	11	11
23	2	2
24	2	2

Table 1 shows that the majority of samples are female (63%), the most recent education is high school graduate (26%), the most sample parents' income is above Rp. 3,000,000 (58%) and the most sample age is 21 years old (44%).

The average distribution of behavioral control, cognitive control and decision control of adolescents aged 19-24 years in Palembang City after conducting a normality testshowed that all self-control variables (behavioral control, cognitive control and decision control) were normally distributed (p-value> 0.05) so that the mean and standard deviation values could be interpreted. The mean value and standard deviation of the

behavior control variable, cognitive variable, and decision control variable were 36.06 (SD = 3.984), 39.88 (SD = 3.991), 40.90 (SD =5.511) respectively.

While the average distribution of health protocol compliance for adolescents aged 19-24 years in Palembang City after conducting a normality test, the results of the COVID-19 health protocol compliance variable were normally distributed (p-value> 0.05) so that the mean and standard deviation values could be interpreted. Mean value of COVID-19 health protocol compliance variable is 45.07 with a standard deviation of 5.030. The frequency distribution of COVID-19 protocol compliance variable was 53% compliant and 47% compliant, which

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means that the highest proportion was in the compliant group with a difference of 6%.

Table 2. Correlation and regression analysis of behavioral control, cognitive control and decision control on compliance with COVID-19 health protocols in adolescents aged 19-24 years in Palembang City

Variable	r	r^2	Line equation	*p-value*
Behavioral control	0,274	0,075	Compliance = 32.575 + 0.347 (BC)	< 0.006
Cognitive control	0.425	0.180	Compliance = 23.725 + 0.535 (CC)	< 0.000
Decision control	0.473	0.224	Compliance = 26.944+0.432 (DC)	< 0.000

Based on table 2, the relationship between behavioral control and compliance with the COVID-19 health protocol among adolescents in Palembang City shows a moderate and positive relationship (r=0.274), meaning that the more one's ability to control behavior increases, the higher the level of compliance with the COVID-19 health protocol. Results showing a moderate relationship and positive pattern were also found in the cognitive control variable (r=0.425) and decision control (r=0.473). The behavioral control coefficient value with a determination of 0.075 means that the regression line equation obtained can explain 7.5% of the variation in the level of compliance or the line equation obtained is good enough to explain the behavioral control variable. Similarly, the cognitive control variable with a coefficient value of 0.180 which explains 18% of the variation in the level of compliance to explain the cognitive control variable and the coefficient value of the decision control variable 0.224 which explains 22.4% of the variation in the level of compliance or the line equation obtained is good enough to explain the decision control variable.

The results of statistical tests on behavioral control (<0.006), cognitive control (<0.000), and decision control (<0.000) show a p-value <0.05 so that the statistical test rejects H_0 and it can be concluded that there is a relationship between each variable (behavioral control, cognitive control and satisfaction control) with compliance with the COVID-19 health protocol.

From the line equation obtained, it is also possible to predict the dependent variable (adherence to COVID-19 health protocols) with independent variables (behavioral control, cognitive control and decision control). For example, if you want to know compliance with the COVID-19 health protocol if you know the behavioral control score is 45, then:
Compliance = 32.575 + 0.347 (BC)
Compliance = 32.575 + 0.347 (45)
Compliance = 48.19

The regression prediction cannot produce an exact number as the result above, but the estimate depends on the value of the 'Std. Error of the estimate' (SE) which is 4.861. Thus, the variation of the dependent variable = Z (SE). The Z value is calculated from the Z table with a 95% confidence level and the Z value = 1.96, so the variation is 1.96 (4.861) = ± 9.52756. So with a 95% confidence level for behavior control with a score of 45, it can be predicted that compliance with COVID-19 health protocols is between 38.66244 until 53.71756.

In this study, there was moderate and positive relationship between behavior control and compliance with COVID-19 health protocols among adolescents in Palembang City. The coefficient value with determination states that the regression line equation obtained can explain 7.5% of the variation in the level of compliance or the line equation obtained is good enough to explain the behavior control variable. The statistical test results show that there is a significant relationship between behavior control and compliance with the COVID-19 health protocol.

The results of this study are in line with the results of research conducted by Nabila and Noor which states that there is a high correlation between behavior control and student compliance, which means that the higher the behavior control, the higher the student compliance.(Nabila and Noor, 2016) The similarity of these results may be influenced by other factors such as the ability of respondents to control their behavior in receiving information, regulating implementation and modifying

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stimuli which of course is also influenced by the characteristics of each respondent. Behavior control is a response displayed by someone when in the field and it is the implementation behavior in the field that really determines whether someone can control their behavior or not. Controlling behavior related to health is certainly influenced by many factors, including knowledge, perceptions, emotions, motivation, and the environment.(Titisari, 2018) Exploration of public health behavior can be seen from various components, including perceptions of disease susceptibility, barriers to prevention efforts, benefits, encouragement, and individual perceptions of their ability to make prevention efforts.(Bunga and Fatimah, 2020)

The relationship between cognitive control and compliance with the COVID-19 health protocol in this study also shows a moderate and positive relationship. The regression line equation obtained can explain 18% of the variation in the level of compliance or the line equation obtained is good enough to explain the cognitive control variable. The results of the statistical test show that there is a significant relationship between cognitive control and compliance with the COVID-19 health protocol.

When a person knows the situation faced by him or her at this time (COVID-19 pandemic), adolescents can know their condition for sure and think of various possibilities that can occur in dealing with this situation.(Bariyyah Hidayati and ., 2016) After all this information is collected, adolescents can determine the conditions currently being faced and can determine various alternatives to take the chosen action so that they are accepted by their environment and can avoid negative consequences that might arise.(Sari, Shilihah and Atiqoh, 2020) With knowledge, an adolescent can also choose alternative behaviors that can be displayed.(Buana, 2020) The results of this study are in line with Nabila and Noor's research which states that there is a relationship between cognitive control and compliance. The data means that the higher the cognitive control, the higher the compliance.(Nabila and Noor, 2016) Kusumadewi's research also states that cognitive control affects a person's compliance. When a person's cognitive control ability is high, the individual is able

to process information and interpret the events around him. (Kusumadewi, Hardjajni and Nanda, 2012)

Decision control variables also showed a moderate and positive relationship with adherence to COVID-19 health protocols. The regression line equation obtained can explain 22.4% of the variation in the level of compliance or the line equation obtained is good enough to explain the decision control variable. There is a significant relationship between decision control and compliance with the COVID-19 health protocol.

An adolescent has the ability to choose and determine the right decision to take actions that do not harm themselves and others or make things worse through various considerations.(Sary, 2017) Nabila and Noor's research states that there is a relationship between decision control and compliance. That is, the higher the student's decision control, the higher the level of compliance. Students will choose action decisions where they can avoid negative consequences.(Nabila and Noor, 2016) The results of this study are also in accordance with McKendry's opinion that compliance is a person's tendency or willingness to fulfill and also accept requests, either those that come from a leader or those that are absolute as rules or orders. (Amsar, 2020) Therefore, one of the factors that support compliance is the ability to control decisions.(Marsela and Supriatna, 2019)

Self-control is one of the factors that influence the number of COVID-19 cases and mortality rate in adolescents. Other factors that also play an important role include population density, transmission areas, the presence of comorbid underlying diseases, and productive age.(Ikbar, Ghiffari and Silvana, 2021) In this study, these factors were not examined, thus becoming a limitation in this study.

CONCLUSION

There is a moderate and positively patterned relationship between behavioral control, cognitive control, decision control on compliance with the COVID-19 health protocol which indicates that part of the adolescent population in Palembang City is able to modify and control behavior, manage information and choose actions well. The other factors that influence

mortality rate were not examined in this study. Schools and universities are expected to be able to collaborate with government and private agencies to empower adolescents as role models by utilizing youth organizations as a forum for education and dissemination of COVID-19 information.

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